National Energy and Climate Plan of the Republic of Albania

31 October 2024

MINISTRIA E INFRASTRUKTURËS DHE ENERGJISË

MINISTRIA E TURIZMIT DHE MJEDISIT

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by giz

Responsible for this document: Ministry of Infrastructure and Energy of Albania

Document version: NECP 31st October 2024

The development of this document was supported by Capacity Development for Climate Policy in the Countries of Southeast, Eastern Europe, Southern Caucasus and Central Asia, Phase III. This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag.

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List of abbreviations and acronyms

ACA	Albanian Competition Authority
ACER	Agency for the Cooperation of Energy Regulators
AEE	National Agency of Energy Efficiency
AFD	*Agence Française de Développement*
AKPT	National Territorial Planning Agency
ALKOGAP	Albania Kosovo Gas Pipeline
APEX	Albanian power exchange
ASOR	State Agency for Security of Oil Reserves
AVR	Automatic voltage regulator
AZHBR	National Agency for the Rural and Agricultural Development
BaU	Business as Usual
BPA	Code Best Practice in Agriculture
BRE-E	RES in the electricity sector
BRE-N & F	RES in the heating and cooling sector
BRE-T	RES in the transport sector
BTR	Biennial Transparency Report
cap	capita
CAPEX	capital expenses
CCL	Citizens' Climate Lobby
CDD	cooling degree days
CfD	Contract for Difference
CH_4	Methane
CO2	Carbon dioxide
CO_2eq	CO_2 equivalent
DCM	Decision of Council of Ministers
EBRD	European Bank for Reconstruction and Development
ECMs	Energy Conservation Measures
EE	Energy Efficiency
EEAP	Energy Efficiency Action Plan
EED	Energy Efficiency Directive
EIA	Environmental Impact Assessment
EPBD	Energy Performance of Buildings Directive
EnC	Energy Community
ENTSO-E	European Network of Transmission System Operators
ERE	Energy Regulatory Authority
ERRU	Albanian Water Regulatory Authority
ESCO	Energy Service Company
ESIA	Environmental and Social Impact Assessment
ESO	Transmission system operator of Bulgaria
ETS	Emission trading system
EV	Electric Vehicle
FEC	Final Energy Consumption
FiT	Feed in Tariff
GACMO	Greenhouse Gas Abatement Cost Model
GDP	Gross Domestic Product
GHG	Green House Gas
ha	hectare
HDD	heating degree days
HEI	Higher Education Institutions
HERE	Higher Education Reform Experts
HPP	Hydro Power Plant
HVDC	High Voltage Direct Current
IAP	Ionian Adriatic Pipeline
IECC	Inter-Ministerial Energy and Climate Committee
IEE	Industrial Energy Efficiency
INDC	Intended Nationally Determined Contributions
INSTAT	Albanian Institute of Statistics
IPA	Instrument for pre-accession assistance
IPARD	Instrument for pre-accession assistance for rural development
IPPU	Industrial Processes and Product Use
ISARD	Intersectoral Strategy for Agriculture and Rural Development
IST	Intelligent Systems of Transport
ISWM	Integrated Solid Waste Management
ITS	Intelligent Transport System
KESH	Albanian Power Corporation

KfW	*Kreditanstalt für Wiederaufbau*
KOSTT	Kosovo power system operator
LDN	Land Degradation Neutrality
LNG	Liquified Natural Gas
LPG	Liquified Petroleum Gas
MARD	Ministry of Agriculture and Rural Development
MEPSO	Transmission system operator of North Macedonia
MIE	Ministry of Infrastructure and Energy
MMR	Monitoring Mechanism Regulation
MFE	Ministry of Finance and Economy
MHSW	Ministry for Health and Social Welfare
MRVA	Monitoring, Reporting, Verification and Accreditation
MTE	Ministry of Tourism and Environment
MVP	Monitoring and Verification Program
MW	Megawatt
NAMAs	Nationally Appropriate Mitigation Action
NANR	National Agency of Natural Resources
NASRI	National Agency of Scientific Research and Innovation
NCREAP	National Consolidated Renewable Energy Action Plan
NDC	Nationally Determined Contributions
NEA	National Environment Agency
NECP	National Energy and Climate Plan
NEEAP	National Energy Efficiency Action Plan
NIR	National Inventory Report
NREAP	National Renewable Energy Action Plan
NSDI II	Second National Strategy for Development and Integration
NSE	National Strategy of Energy
nZEB	Near Zero Energy Building
OSHEE	Power supplier and distribution system operator
OST	Transmission system operator
PaM	Policy and Measure
PBL	Policy-Based Loan
PECI	Projects of Energy Community Interest (list).
PHEV	Plug-in Hybrid Electric Vehicle
PMU	Phasor Measuring Unit
PREs	Policy Reforms Elements
PT	Public transport
PV	Photovoltaic
QA/QC	Quality Assurance / Quality Control
RES	Renewable Energy Source
RFNBO	Renewable fuels of non-biological origin
SCC	Security Coordination Centre
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEAP	Sustainable Energy Action Plan
SEE CAO	South-East Europe Coordinated Auction Office in Montenegro
SET-Plan	Strategic Energy Technology Plan
sHPP	small Hydro Power Plant
SLED	Support for Low Emission Development in Southeast Europe
SLM	Sustainable Land Management
TAP	Trans Adriatic Pipeline
TEFC	Total Energy Final Consumption
TEN-E	Trans-European Energy Networks
TEN-T	Trans European Transport Networks
toe	ton(s) of oil equivalent
ToR	Terms of reference
TPES	Total primary energy supply
TPP	Thermal Power Plant
TSSAP	Sectorial Transport Strategy and Action Plan 2016-2020
TYNDP	Ten-Year Network Development Plan
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value added tax
WAM	With Additional Measures
WB	Western Balkans
WB*	World Bank
WB6	Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, Serbia

WBIF	Western Balkans Investment Framework
WEM	With Existing Measures
WWTP	Waste Water Treatment Plant

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SECTION A: NATIONAL PLAN

1 OVERVIEW AND PROCESS FOR ESTABLISHING THE PLAN

1.1 Executive Summary

Albania has committed to prepare its first NECP during the year 2020, approved with the Decision of Council of Ministers No. 872 of 29.12.2021 “On the approval of the National Energy and Climate Plan 2020 – 2030” that complements the Energy Strategy, which draws up an integrated policy framework to steer decarbonisation efforts until 2030 and beyond, aligning with the goals of the European Green Deal.

The National Energy and Climate Plan (NECP) has been recently undergoing additional revisions to harmonize with the recommendations of the Energy Community Secretariat (EnCS) on NECP improvement and to accommodate new 2030 objectives.

The NECP revision process to address EnCS recommendations was initiated in 2022, which has been undergoing further revision during 2024, supported by GIZ's technical assistance, to align with the new goals of 2030 set by the Energy Community Ministerial Council based on the Decision of the Ministerial Council of the Energy Community No 2022/02/MC-EnC, of 15 December 2022, regarding the reduction of greenhouse gases (GHG), the share of renewable energies and energy efficiency, respectively for final energy consumption and primary energy consumption.

This Plan is based on the following important documents:

1. National Energy Strategy for the period 2018–2030 (DCM No. 480, of 31.7.2018) as the core strategic document for the country’s energy sector,
2. The document of the National Determined Contribution, NDCs (DCM No. 581, of 6.10.2021), for national climate objectives, and
3. European Agreements (such as, such as Paris Agreement and Sofia Declaration on the Green Agenda for the Western Balkans as part of the "Berlin Process" in November 2020).

The design of the NECP has brought about the need for a wide range of reliable and consistent data, of which the most important are those on climate change. Being a country not included in Annex 1 of the UNFCCC, Albania has compiled an inventory of anthropogenic emissions by sources and the absorbing by absorbers for all greenhouse gases (GHGs) emitted into the atmosphere or absorbed by the atmosphere since 1990, as part of its Communications (CC) on Climate Change and most recently the report entitled "First biennial updated report for Albania", which provides detailed information regarding the GHG inventory.
Law no. 155/2020 "On Climate Change" has laid the foundations for the transposition of the Regulation "On the Governance of the Energy Union" (Regulation on Governance) and the relevant EU legislation on climate change.

1.1.1 Political, economic, environmental, and social context of the plan

Political context:

The Republic of Albania is an official candidate for membership in the European Union since 24 June 2014 and is negotiating Albania's entry as a member state of the European Union since July 19, 2022.

Meanwhile, the Berlin Process was launched, as an initiative aiming at stepping up regional cooperation in the Western Balkans region and aiding the integration of countries into the European Union (EU) which was followed by the signing of the Sofia Declaration on the Green Agenda for the Western Balkans at the Western Balkans Summit in November 2020, and committed to work towards the 2050 target of a carbon-neutral continent together with the European Union. By gradually harmonizing the national legal framework with the EU acquis, the Republic of Albania performed numerous legislative alignments in the areas of climate change, environment and energy during this time.

Moreover, at COP26 Albania engaged in launching a planning process for the integration of energy factors in the framework of global Climate Change. Albania is proceeding further with the process of alignment with the EU acquis in the context of accession negotiations.

The Republic of Albania has in place policies and legislative framework for each of the five dimensions of Vision 2030 in the field of energy and climate. There are in place the new Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources", Law 124/2015 "On energy efficiency", as amended in 2021, Law No 43/2015 of 30.04.2015 "On power sector", as amended , Law no. 52 dated 29.05.2024 "On the labeling of products with an impact on energy" as well as the Law No.155/2020 on Climate Change. Law 124/2015 "On energy efficiency", as amended, Law No 43/2015 of 30.04.2015 "On power sector" and Law No.116/2016 "On the energy performance of buildings" are in process of aligning with the new relevant directives.

Albania is involved in the process of creating a supportive domestic energy market, ensuring energy security, energy efficiency, environmental protection including GHG emissions reduction which are described and presented through so many planned measures and investments identified in different policy documents. In this context, Albania has gone through very important developments in the electricity market. Notably, the Albanian Power Exchange (ALPEX) was created in 2020 and went live on 12 April 2023 fulfilling one of the requirements of the Third Energy Package and integrating the Albania and Kosova electricity markets. From 1 January 2020, the legal and functional unbundling of the Distribution System Operator (OSHEE S.A.) was completed; three subsidiary companies now operate independently, as per licenses issued by the Energy Regulatory Authority. Albania has fully implemented the separation of KESH S.A. from the OST S.A., an obligation under the Third Energy Package. Operator (DSO) S.A.", approved the contract for the provision of compliance officer services of the distribution system operator (OSSH S.A.)". Unbundling of gas utilities was completed with the establishment of Albgaz S.A.

The National Strategy of Energy, NECP 2020-2030, Mitigation Action Plan, as an integrated part of the National Climate Change National Plan for the Mitigation of GHG, and the Strategy of Transport have defined objectives and targets on increasing the security of supply by investments in the power sector, gas penetration in the Albanian market, increasing the share of RES and Energy efficiency followed by a reduction of GHG emissions. "Long-term renovation Plan (for public and private buildings)", is under preparation.

The law no.155/2020 on Climate Change has created the basis for transposition of the Governance Regulation and the relevant EU legislation on climate change.

For the full implementation and enforcement of energy and climate policies, most of the secondary legislation acts pursuant to the Law No 124/2015 of 12.11.2015 "On energy efficiency", as amended, were approved during 2022-2024 and all the bylaws under the Law "On the energy performance of buildings" were approved during 2020. Regarding the secondary legislation on renewable energy sources has been partially drafted or is still under the development.

Moreover, the Law no.2/2023 “on fluorinated gases” plays a critical role in addressing greenhouse gas emissions. It aims to control and reduce the use of fluorinated gases, which are potent greenhouse gases. By regulating the reduction of these substances, the law complements existing climate and energy policies, contributing to overall emissions reduction and supporting the transition to a more sustainable energy landscape.

With the amendment of the national law on climate change provisions will be foreseen align it with the relevant parts of the updated ETS Directive (Directive 2003/87/EC) with the purpose of setting up the necessary legal base for the MRVA. Furthermore, secondary legal acts will align with MRR regulation (Commission Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions); 2.) AVR Regulation (Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers, in order to establish the necessary regulatory framework for introducing carbon pricing.

The institutional setup for planning and reporting energy and climate related policies and measures is under development. The following institutions and professions that have been established by law need still to be established in practice: the responsible Agency for Renewable Sources, Renewable Energy Operator, Scientific Institute of Hydrocarbons, natural gas operators, etc.

Economic context:

The development and implementation of the national energy and climate policies will not only aim to reduce greenhouse gas emissions but also generate significant economic benefits in different economic sectors. These policies foster investments in renewable energy, energy efficiency, and sustainable practices, creating new revenue streams and stimulating economic growth. Many investments foreseen to be realised in whole energy sector will have a very great impact to increase the sectorial GDPs, generating revenues and the increase in labour forces in different areas.

For instance, the construction and renovation of buildings; the expansion of the renewable energy sector has led to the establishment of new industries, such as solar and wind manufacturing, which in turn has increased job opportunities across various skill levels. Reduced dependence on energy imports will not only contribute to improving the security of energy supply but also to macroeconomic and political security of the country through decreasing the domestic budget deficit.

Additionally, the emphasis on green technologies and infrastructure has spurred innovation, leading to the emergence of new markets and services focused on sustainability. As a result, the transition towards a low-carbon economy is not only addressing climate challenges but also enhancing labor force participation in green jobs, contributing to a more resilient and diversified economic landscape.

Environmental context:

The development and implementation of national climate policies have been crucial in addressing environmental challenges and fostering sustainable practices across various sectors. These policies prioritize the reduction of greenhouse gas emissions, the promotion of renewable energy sources, and the enhancement of energy efficiency, thereby mitigating the impacts of climate change. In agriculture, initiatives aimed at sustainable farming practices help improve soil health and reduce emissions, while in transportation, policies encouraging electric vehicles and public transit aim to decrease reliance on fossil fuels. Additionally, the protection of biodiversity and ecosystems is integrated into climate strategies, ensuring that natural habitats are preserved and restored. Overall, these comprehensive climate policies are essential for promoting environmental resilience, safeguarding natural resources, and fostering a sustainable future.

Albania's energy policies aim to align with broader environmental goals, fostering a sustainable future through involving several key elements:

- The plan addresses Climate Change Mitigation considering the reduce of the greenhouse gas emissions to combat climate change pursuant to international agreements such as Paris Agreement.
- Sustainable Energy Security through the development of renewable energy sources, such as solar, wind, and hydropower, in order to minimize environmental impact and enhance energy security.
- Enhancing energy efficiency across sectors is crucial to reduce overall energy demand and lower emissions, contributing to both economic savings and environmental protection.
- The plan considers the impact of energy projects on ecosystems and biodiversity, promoting practices that are more friendly with natural habitats while developing energy infrastructure.
- Public Engagement through involving communities and stakeholders in the planning process ensures that local environmental concerns are addressed and that the diversification of energy in sustainable way is socially accepted.

Social context:

In the social context, the development and implementation of national energy and climate policies have significant implications for well-being and social equity. These policies prioritize inclusivity by addressing the needs of vulnerable populations disproportionately affected by climate change. For instance, initiatives aimed at promoting clean energy can create access to affordable energy sources, improving living conditions and e increase of employment mainly through investments in the energy and building sector led to the increase of the personal/families revenues followed by the increase of living standard of the society. Additionally, the transition to a green economy will encourage public participation and stakeholder engagement, fostering a sense of ownership and responsibility among citizens.

There is a strong connection between personal and society welfare which means that investments create not only jobs, but they have their impact on municipalities and governmental revenues through taxes, fees, etc and their use in budgeting forms to be spent for purposes such as health, education, etc.

Specifically, targets on Energy Efficiency aim at the reduction of energy consumption per unit and thus at a contribution to affordable energy supply and reducing the energy poverty.

The plan aims to balance environmental goals with social well-being, enhancing the quality of life for all citizens.

Educational programs related to sustainability raise awareness and empower individuals to take action in their own lives, cultivating a culture of environmental stewardship. Ultimately, effective energy and climate policies not only aim to combat environmental challenges but also enhance social cohesion, promote equity, and improve the quality of life for all members of society.

1.1.2 Strategy relating to the five dimensions of the Energy Union

The National Energy and Climate Plan has to address the five dimensions in an integrated way, for determining the national goals.

The five dimensions of the Energy Union are: (i) energy security; (ii) the internal energy market; (iii) energy efficiency (iv) decarbonisation; and (v) research, innovation and competitiveness.

The strategy relating to the five dimensions of the Energy Union, each addressing a critical aspect of energy policy and infrastructure, is as follows:

The Decarbonization dimension aims to implement policies and measures across all economic sectors in order to achieve a low-carbon energy system to combat climate change with the specific focus to support clean energy technologies and reduce carbon emissions.

The expansion and integration of Renewable Energy Sources, such as wind, solar, and biomass and implementation of mechanisms like carbon pricing or emissions trading systems to incentivize reductions in greenhouse gas emissions pursuant to global climate agreements, present the country's commitment towards reduction of the carbon footprint.

The Energy Efficiency dimension presents the country's commitment towards reduced energy consumption in various sectors, including industry, transport, and buildings through energy efficiency measures, support of the development of energy-efficient technologies and practices, enforcement of energy audits and setting high standards for energy performance in appliances, buildings, and vehicles, and trough promoting awareness and encouraging energy-saving behaviors among consumers and businesses.

The Energy Security dimension presents the country's commitment towards ensuring a reliable, affordable, and sustainable energy supply through diversification of energy sources, energy infrastructure investments, such as the upgrade of pipelines and interconnectors, to enhance the resilience and flexibility of the energy system, maintaining and managing strategic energy reserves to buffer against supply disruptions and implementing and enhancing emergency response mechanisms.

The Internal Energy Market dimension presents the aim to establish a fully integrated internal energy market, to facilitate the integration of national energy markets to ensure the free flow of energy across borders and through harmonizing regulations and standards across member states to create a level playing field and reduce barriers. The internal market will be focusing at consumer protection, implementing measures to protect consumers, promote fair pricing, and ensure transparent information as well as promoting efficient and transparent energy trading platforms and mechanisms.

The Research, Innovation, and Competitiveness dimension presents the country's commitment to foster a competitive and innovative energy sector through research and technology, and through establishing and promoting innovation hubs and partnerships to drive technological advancements towards a low carbon domestic energy sector.

By addressing these dimensions, Albania contributes to the Energy Union strategy that aims to create a robust, sustainable, and competitive energy landscape across Europe.

1.1.3 Overview table with key objectives, policies and measures of the plan

An overview table with key policies and measures is provided in chapter 3 (Table 25: Overview table of key policies affecting the national climate target to 2030). The analytical basis of the NECP (chapters 4 and 5) explains that targets are influenced mainly by the mode of operation of renewable plants, the reduction of fossil fuel use in transport and industry by fuel switch and energy efficiency measures targeting the public and private building sector. Furthermore, forestry management has a major influence.

Targets to be achieved by 2030 are presented in the table below.

National Target 2030	
Target for share of energy from renewable sources in gross final consumption of energy	59.4%
Target for national energy efficiency contribution	
Maximum Share of Primary Energy Consumption (Mtoe)	Not addressed in the NECP adopted on December 2021
Maximum Share of Final Energy Consumption (Mtoe)	2.34
Target for net greenhouse gas emissions[1] compared to 1990 levels in 2030: decrease (%) below 1990 levels	10.21 MtCO2e

Table 1: National Targets 2030

Long-term outlook to 2050: How Albania plans to fulfil the 2050 climate neutrality objective

Albania is working towards the ambitious goal of achieving climate neutrality by 2050 based on detailed projections in the NECP.

Strategic policies within the decarbonization dimension include the implementation of the reviewed national targets regarding the decarbonization with the focus on the greenhouse gas (GHG) emissions reduction and share of energy from renewable sources in gross final consumption of energy. Albania is focusing on increasing the share of renewable energy in its energy mix. The country already has a strong base in hydroelectric power and is proceeding to diversify the energy sector with wind, solar, and biomass energy projects.

In terms of Forestry and Land Use, to offset emissions, Albania is investing in reforestation and afforestation projects. These initiatives help to capture carbon dioxide and improve biodiversity. Albania is implementing practices that promote sustainable land use and prevent deforestation, which is critical for maintaining carbon sinks and enhancing environmental resilience.

Regarding Climate Resilience, Albania is in process of developing the adaptation strategy to address the impacts of climate change, such as improving infrastructure resilience to extreme weather events and managing water resources more effectively.

A mayor importance is focusing on Public Awareness and Education, promoting public awareness and education on climate change issues to encourage community engagement and support for climate action initiatives.

As a candidate country for EU membership, Albania is aligning its climate policies with EU regulations and standards with the aim to participate in EU-funded projects aimed, supporting green transition. Leveraging EU funding and technical assistance to support climate action projects and enhance capacity for implementing climate-neutral policies.

Furthermore, definition of the national targets regarding the energy efficiency dimension and implementation of energy efficiency measures across various sectors, including industrial processes,

[1] The targets cover all domestic net GHG emissions of the Contracting Parties, including LULUCF emissions and removals (except for Montenegro)

residential buildings, and transportation, is essential to reduce overall energy consumption and GHG emissions.

In this regard, through the implementation of the Order of Minister of Infrastructure and Energy No 203 of 18.10.2022 "On the approval of the format of the action plans of large energy consumers and the annual progress report" in accordance with the principle on "Energy audits for large energy consumers with focus on industrial activities" and principle on "Energy management systems for SMEs it will be possible to guarantee the achievement of energy savings at the level of at least 4% of the total equivalent energy consumed by this category of consumers. These plans are drawn up based on energy audit reports for large consumers completed by a licensed energy auditor. Large energy consumers which have employed their certified energy managers will report achievements in energy reductions at the Agency for Energy Efficiency.

Furthermore, Order of Minister of Infrastructure and Energy No 206 of 25.10.2022 "On the approval of the format of local action plans for energy efficiency and the progress report for the implementation of the plans" and Decision of Council of Ministers No 189 of 5.04.2023 "On the approval of the monitoring and verification platform" aim to monitor economic activities at the municipal level and will serve as a mechanism to assess the achievement of national energy efficiency objectives.

In the building sector a well-balanced mixture of policy measures, is under implementation in order to support the energy renovation of the building stock and to attain the specified renovation rate. The "Long-term renovation Plan (for public and private buildings)", is under preparation and will define policy, financing, fiscal and regulatory measures.

Moreover, through the implementation of the Guideline of Minister of Infrastructure and Energy No 23 of 17.10.2022 "On the contract model for energy performance contracting"; in accordance with the principle "Uptake of ESCO models".

The Energy Security dimension aims to define national targets related to increasing the diversification of energy sources ensuring a reliable, affordable, and sustainable energy supply through Diversification of Energy Sources, Infrastructure Development, Strategic Reserves and Emergency Response Mechanisms. Albania is working on developing and supporting a diverse range of energy sources to reduce dependency on any single source or supplier, also is investing in upgrading energy infrastructure, such as pipelines and interconnectors, to enhance the resilience and flexibility of the energy system.

Regarding the Internal Energy Market dimension, Albania has progressed in order to enhance competition and efficiency, to facilitate the integration of national energy markets to ensure the free flow of energy across borders. The majority of legal framework has been harmonized and AlPEX is established and has initiated to perform taking into consideration implementing measures to protect consumers, promote fair pricing, and ensure transparent information through efficient and transparent energy trading platforms and mechanisms. The Albanian Electricity Exchange (ALPEX) started operating on 12.04.2023. During the year 2023, the number of registered members is 17 (seventeen). The total volume traded on the stock exchange for 2023 turns out to be 827,541 MWh and the average price achieved by ALPEX sh.a. turns out to be 106.5 Eur/MWh.

In terms of the Research, Innovation and Competitiveness dimension is aimed to proceed in investing in research and technological innovation to support the transition to a low-carbon economy. This includes exploring new technologies in energy production, storage, and consumption, developing and promoting sustainable transportation solutions, such as electric vehicles and public transportation improvements, to reduce emissions from the transport sector.

By focusing on these areas, Albania aims to meet its climate neutrality target by 2050, contributing to global efforts to combat climate change while promoting sustainable development within the country.

1.2 Overview of current situation of energy and climate policies

1.2.1 National energy sector and policy context of the national plan

1.2.1.1 National energy system

The main policy document of Albania's energy sector is the **National Energy Strategy 2018-2030,** approved with the Decision of Council of Ministers No 480 of 31.07.2018 which focuses on the following sub-sectors[2]:

- Security of supply and (Energy) infrastructure
- Energy market regulation
- Energy efficiency
- Hydrocarbon
- Renewable energy

This document defines the objectives and goals for increasing the security of energy supply through:

- Diversification of energy production by creating a supportive local energy market;
- Increasing energy efficiency (EE), through reducing consumption;
- Increasing the percentage of energy from renewable sources in the total final consumption;
- Reducing the level of technical and non-technical energy losses in the network;
- Reducing the levels of the amount of imported energy;
- Improvement of energy intensity;
- Reduction of greenhouse gas (GHG) emissions.

In compliance with the National Energy Strategy, and referring to the EU recommendations, the National Plan for Energy and Climate (NECP) 2020 – 2030 is in place since the end of 2021 with more ambitious projections. NECP, that complements the present Energy Strategy and aims to draw up an integrated policy framework to steer decarbonization efforts until 2030 and beyond, is aligning Albania's policy framework with the goals of the European Green Deal.

The energy sector in terms of supply and demand and the main challenges it faces are briefly described below.

Actually, electricity in Albania is produced 100% from renewable sources (99% from hydropower plants and 1% from photovoltaic plants), where the main part of the domestic production is produced by the state-owned hydropower plants and then by the hydropower plants built based on the agreements of concessions or contracts for the use and administration of electricity production plants.

The total net domestic electricity production for 2023 is 8,795,637 MWh, of which 5,131,482 MWh was produced by the power plants owned by the public company KESH sh.a as well as 3,664,155 MWh was produced by other power plants. Electricity production realized for 2023, from KESH company is 58.3 % of the total electricity production and the electricity production from other producers is 41.7 %.

[2] Referring to the law on Power sector, other subsector laws and NSSE 2018-2030

The Albanian electric power system bases the production of electricity on water resources, where during the rainy periods it manages to export electricity and in the dry periods during the year it imports electricity to cover the demand in the country.

The year 2023 is considered a good hydrological year from the point of view of electricity production, which for this year resulted in the amount of 2,026 GWh more than average electricity production in the period 2009 – 2023.

In total, the installed capacity of independent and priority generation plants is 1,255 MW, where the installed capacity of independent generators is 452 MW, while 770 MW belongs to the priority generation plants.

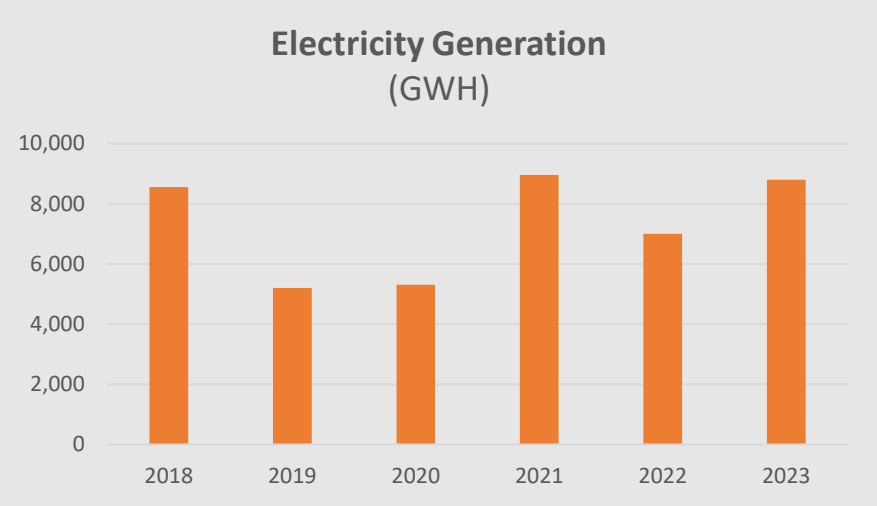

Figure 1: Electricity production (Source: ERE yearly reports: Raporte Vjetore (ere.gov.al)

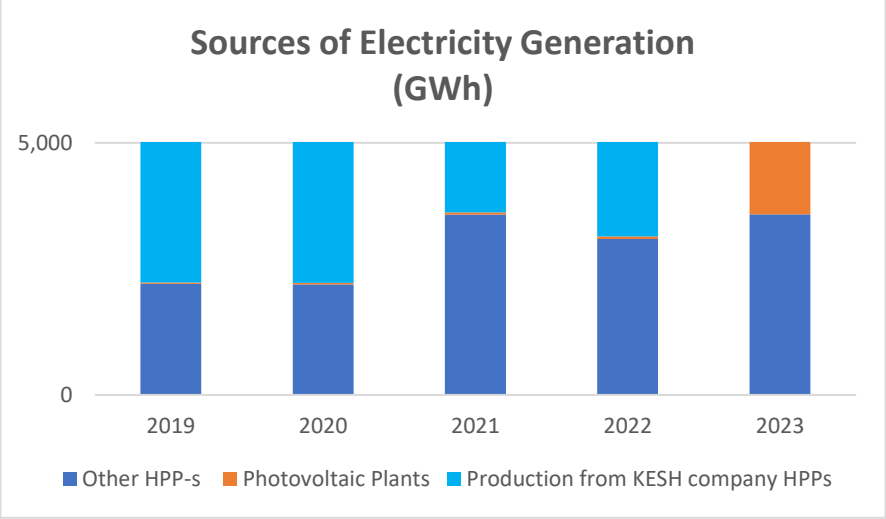

Figure 2: Electricity production by soures (GWh) (GWh) (Source: ERE yearly reports: https://www.ere.gov.al/en/publications/annual-reports/annual-report-2023

The dependence of Albania almost exclusively on hydropower for its electricity generation, makes it increasingly vulnerable to unfavourable hydrological conditions in the summer, especially in terms of the anticipated effects of climate change in the Western Balkans region. In addition to the fact that the production is not constant, electricity from domestic hydropower is not sufficient to meet the needs where the dependence on energy imports accounts for 20-30% of the energy demand. Therefore,

guaranteeing the security of electricity supply remains a challenge and requires better use of all potential energy sources available.

Thus, Albania is implementing measures to increase investments in renewable energy projects other than hydropower. Due to the fall in technology costs and significant renewable energy potential that the country has, wind and solar PV can be deployed cost-effectively to mitigate the impact on the end-consumer electricity price. By the end of 2022, there were 48 MW of solar PV installed.

During 2023, a total of 12 plants with an installed capacity of 26 MW have entered the production phase, where 7.00 MW has been added by hydro plants and 18 MW by Photovoltaic Plants. Electricity production realized by the plants that entered production during 2023 occupies about 0.4% of total domestic electricity production for this year.

In a nutshell, import dependence and high distribution losses in the electricity grid are challenges to be dealt with. **Dependence on energy imports** counts 20-30% of the energy demand and ensuring the security of power supply is a challenge. **The number of the independent producers** of electricity is growing every year, which is a significant step for the diversification and energy security. Plans to increase the use of natural gas must be carefully developed and aligned with other plans, to ensure that GHG and final energy reduction targets and EE improvement targets will be achieved.

The total electricity consumption in the country throughout the year 2023 is covered by the electricity generation realized by KESH sh.a., independent electricity producers, priority electricity producers, as well as by the import of electricity.

The total electricity consumption for the year 2023 results in 7,875,861 MWh, in almost the same value as the consumption in 2022. Electricity consumption for the year 2023 compared to the consumption of 2021, which is also the maximum consumption, results in a decrease of 538,975 MWh. Reduction of total electricity consumption in the country for the year 2023, compared to the maximum consumption for the year 2021, goes to about 6.4%. At the same time, the total electricity consumption realized for the year 2023 is about 9.2% higher than the average annual consumption for the period 2004 - 2023.

This decrease in total electricity consumption is reflected for all categories consumers, but especially for consumers who are supplied in the unregulated market, which for 2021 have consumed around 1,361 GWh of electricity, for 2022 these consumers have consumed about 929 GWh of electricity and for the year 2023 about 858 GWh. This decrease in consumption has also come because of the energy crisis in which a lot of businesses installed alternative power generation plants as self-producers.

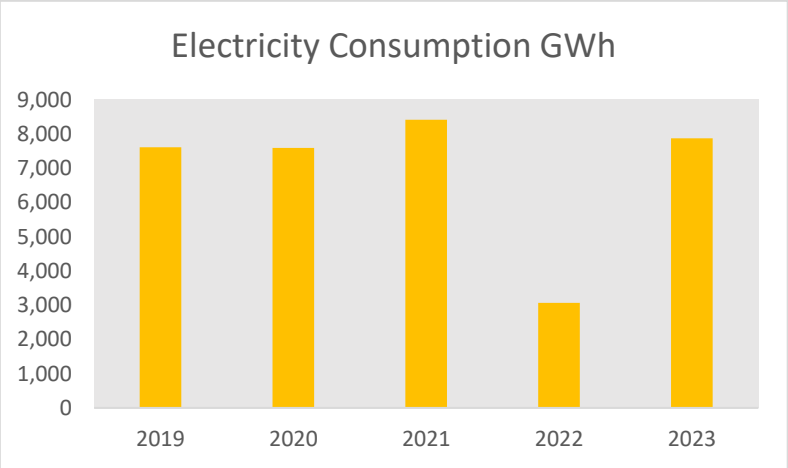

Figure 3: Overview of electricity consumption per year (Source: ERE yearly reports: https://www.ere.gov.al/en/publications/annual-reports/annual-report-2023

Pursuant to the targets set on National Energy and Climate Plan (NECP 2021) for energy efficiency, the use of renewable energy resources and decarbonization by 2030 have been implemented as follows:

- Greenhouse Gas emission savings -18.7%;
- Energy Efficiency (Reduction of financial energy consumption) -8.4%;
- Contribution of renewable energy to final energy demand 54.4%.

Error! Reference source not found. shows the electricity generation from renewable energy sources as follows:

Year	2019	2020	2021	2022	2023
Other HPP-s	2,205	2,191	3,578	3,093	3,583
Photovoltaic Plants	22	32	41	50	80,874
Production from KESH company HPPs	2,979	3,090	5,344	3,860	5,131
Net Domestic Production (GWh)	5,206	5,313	8,963	7,003	8,796

Table 2: Electricity generation from renewable energy sources (Source: ERE yearly reports https://www.ere.gov.al/en/publications/annual-reports/annual-report-2023

Power generation from small and medium hydropower plants – state of play

The total net domestic electricity production for 2023 is 8,795,637 MWh, of which 5,131,482 MWh was produced by the power plants owned by the public company KESH sh.a as well as 3,664,155 MWh was produced by other power plants. Electricity production realized for 2023, from KESH company is 58.3 % of the total electricity production and the electricity production from other producers is 41.7 %.

As perceived from these figures, the share of production generated by the independent private producers of electricity in 2023, constitutes almost half of the total domestic generation. The number of the independent producers of electricity is growing each year thus raising the importance of these producers in the market, which is a significant step towards the liberalisation of the electricity market Albania.

Priority generators and the private electricity generators are entities licensed by ERE throughout the years that utilise the existing or new plants, mainly through privatisation agreements, concession agreements or contracts for the utilisation and administration of electricity production plants.

The total installed capacity of electricity production in Albania until 31 December 2022 was 2,675 MW. This capacity was increased in 2022 with 26 MW compared to 2022. The total electricity production capacity of the public KESH company is 1453 MW and occupies about 54.2% of the total installed capacity in Albania. The total installed capacity of other electricity generators is 1,222 MW and occupies about 45.8 % of the total installed capacity in Albania.

For 2023, the number of independent generation plants and priority ones that have generated electricity, was 259 where 13 of them are independent generators which are owned by 7 licensed entities, while the rest of 246 plants are electricity priority producers, owned by 187 entities in the electricity generation activity. In this list, it is included the Lanabregas HPP with an installed capacity of 5MW and annual generation for 2023 of 23,244 MWh, whose shares are 100% owned by the state.

The production capacity of electricity, during the year 2023 has increased by 229.22 MW, of which 125.27 MW from the production of electricity from hydro and thermal sources and 103.95 MW from the production of energy electricity from photovoltaic sources.

In total, the installed capacity of independent and priority generation plants is 1,222 MW, where the installed capacity of independent generators is 452 MW, while 770 MW belong to the priority generation plants including Lanabregas HPP.

In 2022, there were produced 80,874 MWh by renewable energy photovoltaic producers, with an installed capacity of 48 MW.

Power plant projects

Skavica Hydropower Project

The construction of Skavica Hydro Power Plant is an important step towards increasing energy security, reducing electricity imports, and increasing efficiency and energy production from other hydropower plants of Drin River Cascade.

The Law No 38/2021 of 23.03.2021 "On determination of the special procedure for the negotiation and execution of the contract with the company "Bechtel International, Inc", for the design and construction of the Skavica Hydropower Plant" was adopted. The contract with Bechtel is divided in two phases.

The contract of the first phase, approved with the Decision of Council of Ministers No 485 of 30.07.2021 includes preliminary activities which will enable Bechtel to submit a proposal to the Contracting Authority for the contract of the second phase and will help the Contracting Authority and the Council of Ministers of Albania to provide the financial support for the project. As per now the first phase of the project has concluded the technical component such as topography, hydrology, geology and geotechnical studies.

Based on the Decision of the Council of Ministers No 349 of 12.06.2018 "On the approval of support measures for the promotion of the use of electricity from renewable sources of sun and wind, as well as procedures for selecting projects to benefit from these support measures", as amended, and the objectives of the Consolidated National Renewable Energy Action Plan 2019 – 2021, the Ministry of Infrastructure and Energy developed two competitive auctions for construction of new photovoltaic generation capacities with a total installed capacity of 240 MW with the goal to promote the use of electricity from renewable sources.

Photovoltaic Plant of Karavasta

In 2020, the Ministry of Infrastructure and Energy signed the Project Development Agreement with Voltalia a.s. for the construction of the photovoltaic plant in Remas - Karavasta (near the area of Lushnja) with an installed capacity of 140 MW, of which 70 MW, as part of support measures at a price of 24.89 euros/Mwh, for 15 years, and 70 MW which will be traded in the free market. Karavasta Solar park is in operation since January 2024.

Photovoltaic Plant of Spitalla

The Ministry of Infrastructure and Energy has developed the competitive procedure for the construction of the photovoltaic park of Spitalla, Durrës with an installed capacity of 100 MW, of which 70 MW, as part of the Support Measures, whose energy will be purchased at a price of 29.89 Euro /MWh for 15 years, and an additional 30 MW will be traded in the free market. The Project Agreement and PPA were signed in June 2021. The project is under implementation. The bidder is in process of collecting the permits in accordance with the signed contracts.

Wind Power Plant in preparation

The Ministry of Infrastructure and Energy also announced a competitive process for wind electricity generators with an installed capacity from 10 MW to 75 MW. Through this bidding procedure, the Ministry selected projects with a total capacity of 150 MW by providing support measures. Potential bidders had to identify and propose suitable locations for the design, financing, construction, and operation of the Eolic parks. The first phase contracts were awarded in June 2023, while in July 2023 the last phase of economic offers took place and three bidders have been awarded a total of 222, 5 MW installed capacity.

Photovoltaic Plant in preparation

In order to boost renewables in its energy mix, the Ministry of Infrastructure and Energy on January 15, 2024, announced the beginning of the competitive procedure for the selection of projects for "Design, financing, construction, operation and maintenance of several photovoltaic plants, each with an installed capacity between 10 MW and 100 MW (inclusive), which will benefit from support measures, with a location chosen by the bidder in the Republic of Albania" for a max capacity of 300 MW.

On July 10, 2024, the Ministry of Energy and Infrastructure announced eight winners which offered 283.9 MW. The ceiling price was set at 59.97 Euro/MWh, with the lowest offer being 39.7 Euro/MWh and an average price of 51.3 Euro/MWh. Successful bidders will be awarded a 15-year power purchase agreement (PPA) with the Albanian government, convertible in a contract for difference (CfDs).

Power Plants operated with gas

Gas-fired power plants are estimated to be currently necessary as a transition technology to stabilize the electricity supply due to the increasing share of fluctuating renewable sources.

The Vlora thermal power plant (built with financing from the EBRD of EUR 40 million, EIB financing of EUR 40 million, and WB* financing of EUR 20.5 million) has never been put into operation since its completion in 2011. This is due to a failure in the plant's cooling system that has not been repaired. The conversion of the Vlora power plant from oil use to gas use once it is connected to the TAP is encouraged. This would contribute to stabilizing the generation of electricity during droughts in the southern part of Albania. However, this will increase gas consumption and thus also CO_2 emissions and must be taken into account accordingly in strategic planning.

The Roskovec thermal power plant projection has been evaluated as the best way for a minimal contribution in terms of greenhouse gas emissions since it is designed to use natural gas for the operation of this TPP, which will contribute to the diversification of energy sources and the security of the supply in the transition phase, with minimal impact on the environment.

Structure of the Albanian energy sector

In a graphical way, we are introducing the structure of the Albanian energy system:

In terms of **Gross inland consumption,** the Albanian energy system has been dominated and still continues to be dominated by oil by products for transport use (appr. 53.3%), followed by electricity produced from hydropower (appr. 28.17%), and in the third place is biomass (fuelwood, appr. 6.8%) used for heating, cooking and domestic hot water. Fuelwood is mostly used in household (rural areas) and in the service sector (Figure 4).

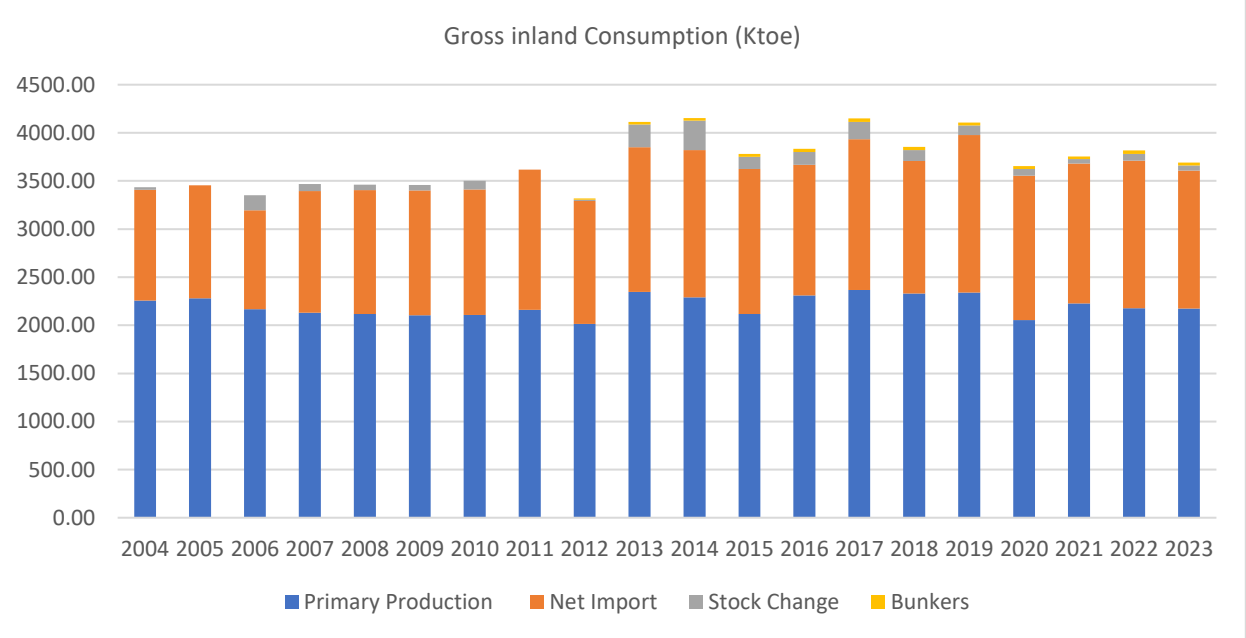

Figure 4: Gross Inland Consumption (ktoe) (Source: Albanian Energy Balances)

Dependency on imports is an important reason that the Albanian energy system must be developed towards a diversified energy system using alternative energy resources like gas and renewables with less GHG emissions, and implementation of energy efficiency measures - based on cost effectiveness. The system must rely on domestic production and being affordable for consumers by creating an impact on poverty reduction. **Error! Reference source not found.**Figure 5 shows the import dependence of the energy system. The share of import in percentage of the Gross Inland Consumption is high, thus affecting the security of supply. The energy system must be more diversified and efficient, also due to increase of self-sufficiency energy demand.

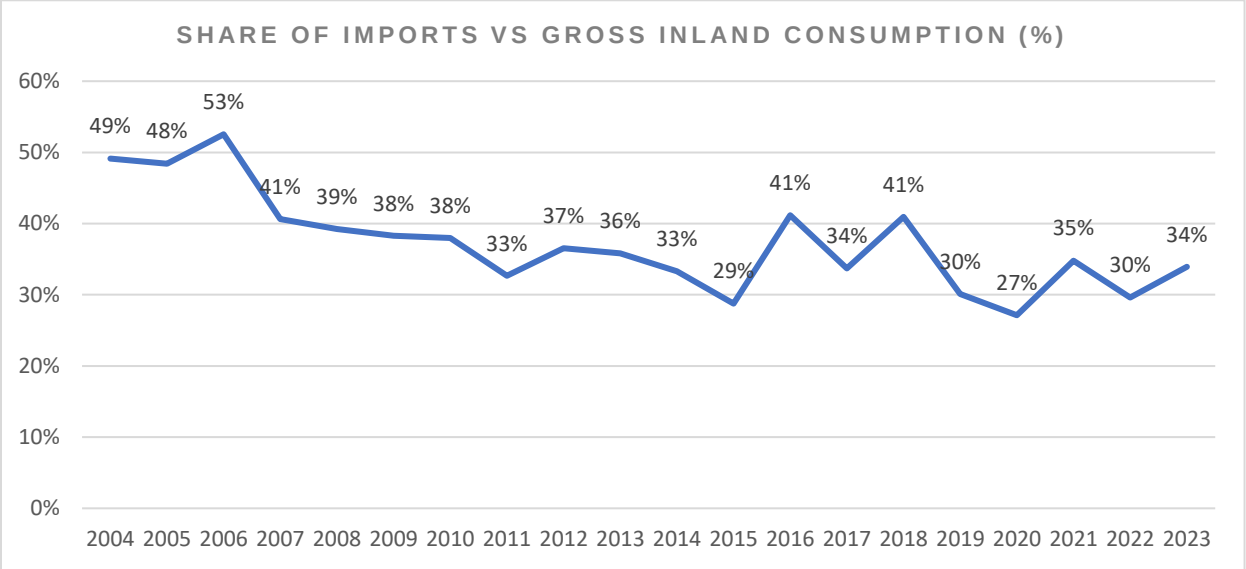

Figure 5: Imports vs Gross Inland Consumption 2004-2023 in % (Source: Albanian Energy Balance)

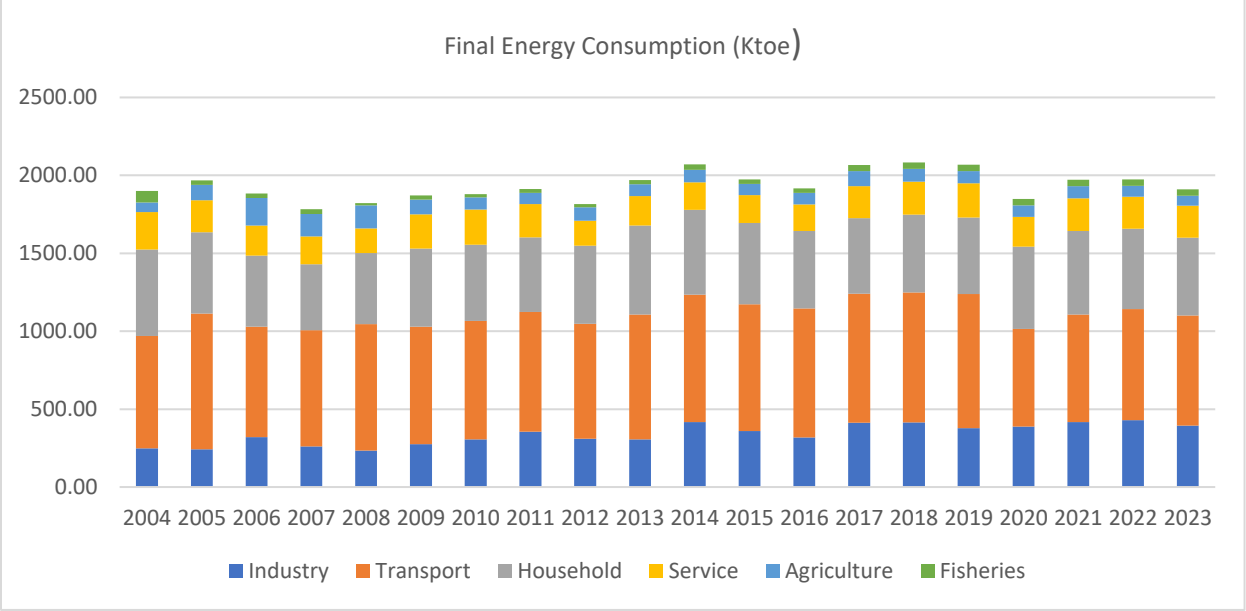

Figure 6: Final energy consumption by sectors (ktoe) (Source: Albanian Energy Balance)

Development of the final energy consumption during 2004-2019 is dominated by transport, followed by household & commerce. Specifically, the year 2019 is dominated by the transport sector at the range of

41.6%, the second place is households and commerce at the range of 34.7%, Industry is at the range of 18% and the remaining share is agriculture and others.

Figure 7 shows that the biggest share of energy sources is dominated by oil and oil by-products, especially in the Transport sector, followed by Hydro & Electricity and Biomass.

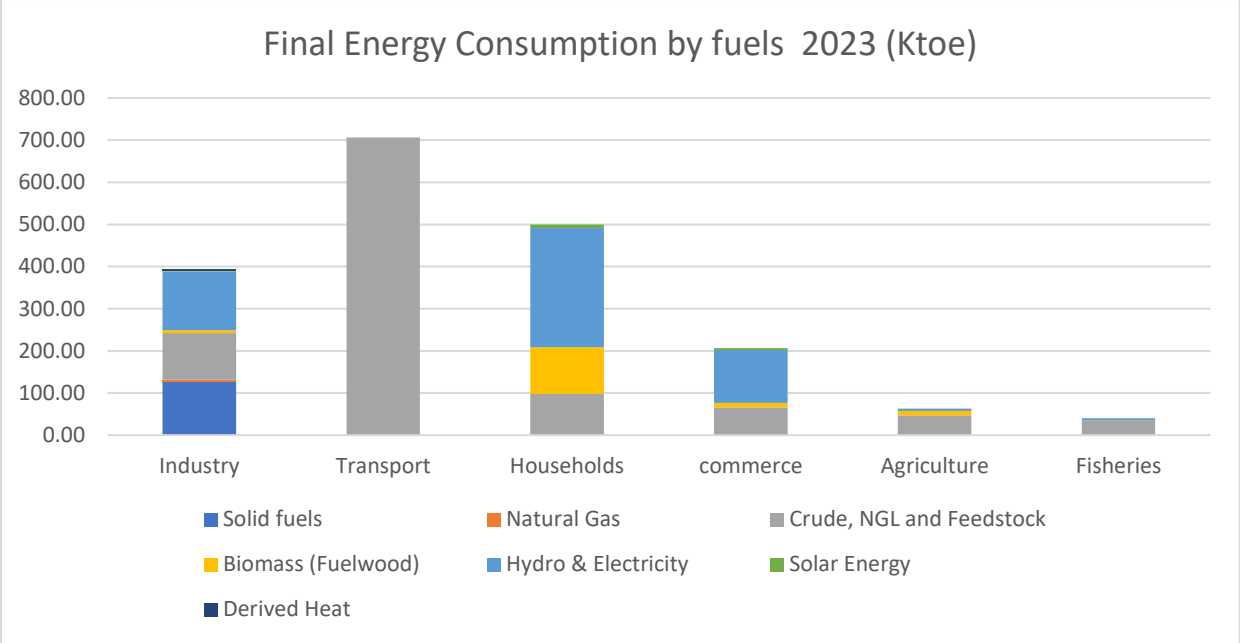

Figure 7: Final Energy Consumption 2023 by fuels and sectors (Source: Albanian Energy Balance)

Based on the energy policy documents, sectors which are considered having a big potential for energy savings are the transport sector, public and private buildings, and industry.

Electricity transmission and distribution

A key issue for the performance of Transmission and Distribution companies as a very important aspect of energy supply is the phenomena of transmission and distribution losses.

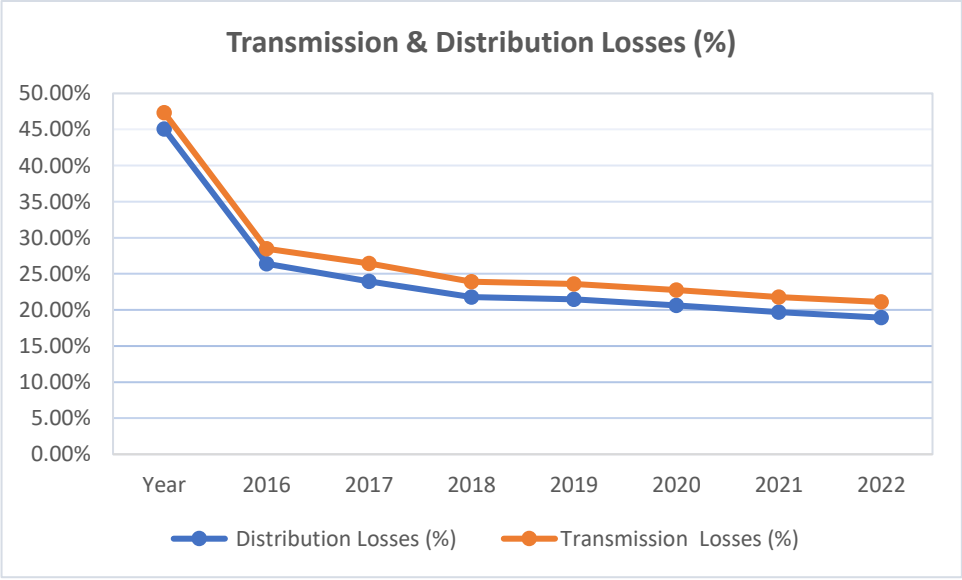

Figure 8: Transmission and distribution losses vs electricity transmitted and distributed into the grids (Source: ERE annual reports)

Based on the ERE annual reports, there are some achievements due to EE investments in the power sector concerning the reduction of technical losses in transmission and distribution. During 2023, the electricity sales effectiveness continues in increased values, referring to the determining factors in the level of electricity consumption efficiency, which are:

- level of electricity losses in distribution;
- level of collections for the invoiced electricity.

The total losses reported by DSO for 2023 are 18.93 % marking a decrease in the level of losses compared to 2022 that were up to 19.70%. The level of distribution losses for 2023 is up to 2.17% as for 2022 losses were 2.09%. According to ERE, transmission and distribution losses were nearly 2.17% in total in 2023. (Source: ERE annual reports)

Energy intensity

As can be seen from Figure 9, for 2014 the energy intensity has been 0.219067 ktoe/billion Euro GDP, for 2020 it is expected to be 0.209423 and with a prediction for 2030 to have an energy intensity at 0.175174 ktoe/billion Euro GDP. (Source: National Strategy of Energy)

The Albanian energy system can achieve the target of energy intensity reduction if measures of the 2nd and 3rd NEEAP are implemented.

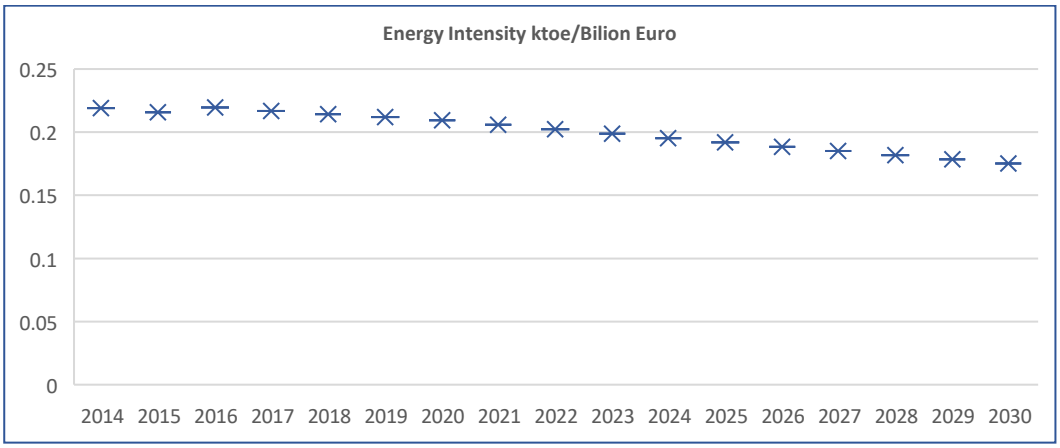

Figure 9: Energy intensity (Source: National Strategy of Energy)

1.2.1.2 Policy context of the national plan on energy and climate

In compliance with the National Energy Strategy 2018–2030, and addressing the EU recommendations on the draft version, the first National Plan for Energy and Climate (NECP) 2020–2030 was approved with the Decision of Council of Ministers No 872 of 29.12.2021 "On the approval of the National Energy and Climate Plan 2020–2030".

The National Energy Strategy was approved with the Decision of Council of Ministers No 480 of 31.07.2018. The target for 2030 will be at least 42% of the TEFC projected for this year.

The National Energy Strategy 2018–2030 currently being implemented, focuses on enhanced security of energy supply, diversification of energy sources and on reduce of energy consumption through energy efficiency measures. The National Energy and Climate Plan (NECP 2021–2030) that complements the

Energy Strategy, draws up an integrated policy framework to steer decarbonisation efforts until 2030 and beyond, aligning with the goals of the European Green Deal.

In order to reflect the Energy Community 2030 targets and to update the document according to the new development in energy sector, Albania has continued to refine the NECP in the course of 2022, 2023, and 2024.

The NECP has been developed in line with:

- National Energy Strategy
- Second National Strategy for Development and Integration (NSDI II) which is aligned to the United Nations' Sustainable Development Goals;
- The obligations arising from the signature of the United Nations Framework Convention on Climate Change (UNFCCC);
- Energy and Climate Acquis of the Energy Community.

Sustainable Development Goals

Referring to Sustainable Development Goals, the SDG 7- Affordable and Clean Energy, calls for ensuring universal access to modern energy services, improving energy efficiency and increasing the share of renewable energy.

According to INSTAT, the relevant energy supply indicators measuring SDG7 in Albania are:

- By 2030, ensure universal access to affordable, reliable and modern energy services
- Proportion of population with access to electricity is 100%
- Proportion of population with primary reliance on clean fuels and technology is 34.38%

The challenges currently facing the Albanian energy sector include:

- Meeting the energy demand for a sustainable economic development in different sectors and the growing level of energy consumption per capita;
- Improving the trend of energy intensity reduction;
- Enhancing the security of energy supply by improving energy efficiency, increasing the share of renewables and other indigenous energy sources, and increasing welfare through regional cooperation and integration;
- Continue investments to further improve the performance by reducing distributions losses in the grid and improve collection rates.

United Nations Framework Convention on Climate Change

During the last two decades, Albania has paid special attention to environmental protection in general and climate change in particular. The Albanian Constitution itself has included "a healthy and ecologically adequate environment for present and future generation" as one of the social objectives that need to be taken into consideration by all state institutions.

Albania is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), adopted at the "Rio Earth Summit" in 1992 and ratified by the Albanian Parliament in 1994, which established the objective to combat climate change by stabilizing GHG concentrations in the atmosphere and limiting average global temperature increases to support sustainable development. Albania has started the process of changing the status from a developing country to a developed country, in the context of the UNFCCC. This process is an integral part of the process of integration into the EU and involves the development of capacities at the national level for monitoring and annual reporting of Greenhouse Gases (GHG), the formulation and implementation of policies for GHG emission reduction

and climate change adaptation, and the transposition and implementation of the EU Acquis on climate change.

In order to achieve the emission reduction objectives, the Paris Agreement adopted in December 2015 and ratified by the Albanian Parliament through law No. 75/2016 dated 14.07.2016, establishes a "bottom up system" where Parties have to prepare and communicate successive nationally determined contributions (NDC) every five years with the aim of progressively improving their efforts. In addition to their NDC, Parties should also formulate long-term, mid-century low GHG development strategies, and submit them by 2020 that demonstrate how their efforts will contribute to the goal of zero-net emissions by the second half of this century.

Following the Paris Agreement, the Republic of Albania revised its Nationally Determined Contribution, the first legally binding document in climate action, and submitted it to the secretariat of the United Nations Framework Convention on Climate Change before COP26 as part of its commitments under the national climate agenda and the implementation of Sustainable Development Goals. Through the revised NDC our country aims to reduce greenhouse gas emissions by 20.9% by 2030. The NDC document was drafted in parallel with NECP to align targets as much as possible and was approved by DCM no 568 dated on 06.10.2021.

The Ministry of Tourism and Environment has secured financial support from the GEF for Drafting the 5th National Communication and Biennial Transparency Report (BTR). The BTR will provide information on the implementation status of our current NDC. The revised NDC 2025-2035 is due in 2025, and both the revised NECP and BTR including National Inventory Report (NIR) will provide input for updating the NDC.

On the other hand, the Ministry of Tourism and Environment will submit the National Inventory Report to the UNFCCC within December 2024.

In 2014 the Order of the Prime Minister No. 155, of 25.04.2014 established an inter-ministerial working group on the coordination of the Ministries tasks, according to the country's obligations on UNFCCC. The group, chaired by the Deputy Minister of Environment, includes the representatives of 12 Albanian Ministries. The group has the mandate, among others, to draft policies and strategies, and to ensure inter-institutional coordination for the implementation of climate change activities.

Energy and Climate Acquis of the Energy Community

Although Albania is making progress with transposing and implementing the Acquis, crucial points remain:

- the reliability of the energy database and the need for macro-economic data in much more detail in order to improve analyses, in-depth reviews and monitoring of the action plans and strategies related with energy;
- the low implementation of legislation and strategic documents;
- the need for a financial framework for implementing policy measures.

Non-implementation of previous NEAPs or EE legislation was linked with lack of a financial framework for implementation (EE fund or dedicated state financing). To avoid this risk, setting up financing mechanisms for NECP implementation is the key to success. In view of the very high investment costs and the long periods of time required to realise investments across the energy sector, strategic investments in RES and RE are becoming key issues in terms of increasing security of supply, reducing emissions and adapting energy demand on the basis of least cost planning.

Transposition of EU Directives under the Energy Community Acquis

Information about the status of transposition and implementation of Directives is provided in the chapters of the respective Dimension. Albania has prepared and adopted a number of policy documents, strategies and action plans aligned with the Energy and Climate Acquis of the Energy Community.

The main energy-related policy documents are described below:

- National Sector Strategy for Energy 2018-2030, approved by DCM No. 480 of 31.7.2018 is the core strategic document for the country's energy sector clearly defining national energy targets until 2030.
- Strategic Plan for Reform in Energy Sector in Albania (2018-2020), approved by DCM No. 742 of 12.12.2018, is a roadmap for reforming the entire electricity sector in Albania. It is the basis for the Policy-Based Loan (PBL) for the implementation of the specific Policy Reforms Elements (18 PREs) listed in this Strategic Plan.
- Albania's Economic Reform Programme (2020-2022) related to energy sector reforms includes the following: (i) Effective liberalization of the energy market, with complete unbundling and a functioning power exchange; (ii) Implementation of the law on renewable energy sources; (iii) Adoption of the secondary legislation for the laws on energy efficiency and the energy performance of buildings.
- NEEAP 2nd and 3rd has set up some objectives and targets up to 2020, EE measures, investments and responsible institutions.
- National Consolidated Renewable Energy Action Plan (NCREAP 2019 – 2020) approved by DCM No. 580 of 31.7.2018, foresees an average increase of electricity generators from renewable sources of 738 MW out of which 490 MW from photovoltaic (PV) and 150 MW from Wind Power.

1.2.2 Current energy and climate policies and measures relating to the five dimensions of the Energy Union

1.2.2.1 Overview of key policies

National Energy Strategy for Albania

The Energy Strategy for Albania 2018-2030, as the core strategic document for the country's energy sector, is fully coherent with other national policies and strategies and the European Green Deal's objectives: Supplying clean, affordable and secure energy; Building and renovating, promoting a cleaner construction sector; Accelerating the shift to sustainable and smart mobility; Eliminating pollution through measures to cut pollution rapidly and efficiently. The "Long-term Building Renovation Plan (for public and private buildings)", is under preparation in collaboration with EBRD under the REEP PLUS program.

The five dimensions which the energy strategy supports are:

1. Energy security, based on diversification of energy resources
2. Full integration in the regional market and later to the European one
3. Energy efficiency which contributes to the moderation of demand
4. Decarbonization of the economy
5. Research, innovation and competition.

The Albanian Energy Strategy is fully in line and in harmony with EU "Low-carbon Economy Roadmap" and promotes EE, RES and natural gas policies that promote a stable business climate which will encourage low-carbon investments for the period 2017-2030.

As the analyses supporting this strategy shows, there is significantly greater GHG reduction potential in the Albanian energy system than the initial NDC commitment. Therefore, the energy strategy and the policy objectives it envisions are in-line with the increasing ambition goals of both the UNFCCC and the EU/Energy Community. Given the status of Albania as a candidate country in accession to the EU, it is likely during the period covered by this strategy Albania will accede to the EU. For this reason, as well as required by its Energy Community membership, it is of great importance that the Energy Strategy is in line also with EU Climate Change Policy by ensuring that the energy policy objectives and the respective energy action plans identified in this document are supporting the levels of ambition expressed in EU CO_2 reduction targets and climate change political goals.

1.2.2.2 Overview of governmental institutions

The most significant institutions in setting policy and regulation in the power sector in Albania are the Ministry of Infrastructure and Energy ("MIE") and the Energy Regulatory Authority ("ERE"). In addition to MIE and ERE there are a number of ministries that have a smaller role in the sector, and also a number of government agencies with responsibilities with respect to the power sector that are delegated to them by the ministries. These are: Ministry of Finance, Ministry for Health and Social Welfare ("MHSW"), Ministry of Tourism and Environment ("MTE") and government agencies and companies involved in energy supply, as shown in the figure below. A detailed description of the presented organisations is available in the diagram below.

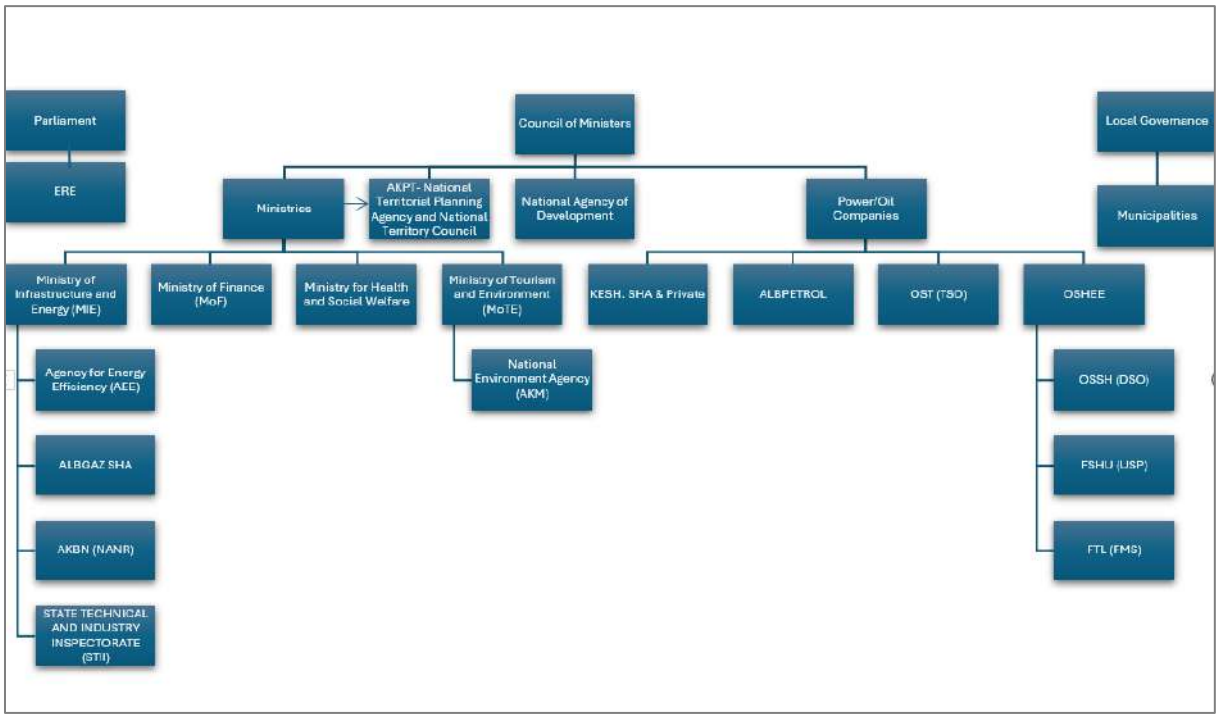

Figure 10: Organigram of governmental institutions involved in NECP development and implementation

1.2.2.3 Dimension Decarbonisation – GHG emissions and removals

Key policies such as the INDC and the National Strategy for the Climate Change are described below.

Nationally Determined Contribution 2021-2030

Though Albania is a country with a low-carbon economy, the updated NDC (Nationally Determined Contribution) of Albania which was approved by DCM no 581 dated 06.10.2021 commits to reduce its CO_2 emissions by 20.9 % as compared to the baseline scenario for the period 2016 to 2030. This reduction is equivalent to a CO_2 emission reduction of 3,170 kt CO_2 by 2030, considering all the sectors.

The main mechanisms of achieving this objective are related to maintaining the low-level greenhouse gases emissions from energy production sector and developing low carbon policies in order to prevent the increase of greenhouse gases emissions from other sectors of the economy.

All sectors need to contribute to the low-carbon transition according to their technological and economic potential. The EU Low Carbon Economy Roadmap calls for actions in all main sectors responsible for Europe's emissions – power generation, industry, transport, buildings, construction, and agriculture - and significant investments need to be made in:

- New low-carbon technologies
- Renewable energy
- Energy efficiency and
- Grid infrastructure.

NAMA (Nationally Appropriate Mitigation Action)

An initial inventory of potential NAMAs (**N**ationally **A**ppropriate **M**itigation **A**ction) in Albania was established with UNDP support (2013-2014).

National Strategy for the Climate Change (2019-2030)

The National Strategy for the Climate Change (2019-2030) is aligned with the following key documents:

- Obligations under the Energy Community
- National Strategy for Development and Integration – 2015-2020 (Albanian Council of Ministers, 2017)
- Albania's Economic Reform Programme (2020-2022)
- Albanian Renewable Energy Source Action Plan (NREAP) Draft of 2019
- Third National Communication of the Republic of Albania under the United Nation Framework Convention on Climate Change (Tirana June 2016)
- The first National Determined Contribution (NDC) document pursuant to the achievement of the UNFCCC target, approved by DCM No. 762, dated 16.9.2015
- The National Consolidated Renewable Energy Action Plan (NCREAP 2019 – 2020) (DCM No. 580 dated 31.7.2018)

Most important policy measures are key laws creating the enabling framework conditions to increase the number of renewable energy plants for generating electricity (see next chapter "Dimension Decarbonisation – Renewable Energy").

Inter-sector Strategy for Agriculture and Rural Development and Fishery (2021-2027, approved 2022)

The Inter-sector Strategy for Agriculture and Rural Development and Fishery of Albania (2021-2027), approved in 2022, aims to enhance the sustainability and competitiveness of these sectors. (i) The strategy promotes sustainable farming practices, efficient resource use, and the adoption of green technologies, which can help reduce GHG emissions from agricultural activities. (ii) Initiatives aimed at better land use, reforestation, and soil conservation contribute to carbon sequestration, thereby offsetting emissions. (iii) Sustainable fishery practices, such as reducing overfishing and protecting marine ecosystems, support biodiversity and contribute to the overall reduction of GHG emissions in the sector.

Strategy for Development of Forestry and Pastures Sector (2005-2030)

The Strategy for Development of Forestry and Pastures Sector of Albania (2005-2030) is designed to enhance the management and sustainability of Albania's forests and pastures. The strategy promotes (i) Improved forest management practices, afforestation, and reforestation efforts increase the capacity of forests to absorb carbon dioxide from the atmosphere, thereby reducing net GHG emissions (ii) Reduction of Deforestation and Degradation by implementing measures to reduce deforestation and forest degradation, the strategy helps maintain and enhance the carbon storage capacity of existing forests (iii) Sustainable Pasture Management promoting sustainable grazing practices helps prevent overgrazing and land degradation, which in turn supports soil carbon sequestration and reduces emissions from land use changes.

Targets for land degradation neutrality in relation to the UN Convention to Combat Desertification

Albania, as a participant in the United Nations Convention to Combat Desertification (UNCCD), has set specific targets for achieving Land Degradation Neutrality (LDN). These targets include restoring a significant portion of degraded land by 2030 through reforestation, afforestation, and improved land management practices, with a focus on areas highly susceptible to erosion and desertification. The country aims to implement Sustainable Land Management (SLM) practices across agricultural lands to prevent further degradation and promote conservation agriculture, agroforestry, and other sustainable methods that enhance soil fertility and water retention.

Additionally, Albania plans to increase forest cover through reforestation and afforestation programs and improve the management of existing forests to prevent illegal logging and degradation. For pasture areas, sustainable grazing practices will be implemented to prevent overgrazing and land degradation, promoting rotational grazing and reseeding of pastures. To combat soil erosion, the country will develop and implement soil conservation measures, such as terracing and contour ploughing, especially in hilly and mountainous areas. Improved water management practices are also a key component, aimed at preventing soil salinization and degradation of irrigated lands through efficient irrigation techniques and the restoration of wetlands and riparian areas.

To achieve these targets, Albania will strengthen national policies and institutional frameworks, integrating LDN targets into national development plans, agricultural policies, and environmental regulations. Capacity-building programs will be provided for farmers, land managers, and local communities, raising awareness about the importance of LDN and the benefits of preventing land degradation. A robust monitoring and assessment system will be established to track progress towards LDN targets using remote sensing, GIS, and other technologies.

Financial resources will be mobilized from national budgets, international donors, and private sector investments, exploring innovative financing mechanisms like payment for ecosystem services (PES) and green bonds. Local communities will be actively involved in the planning and implementation of LDN initiatives, promoting participatory approaches in decision-making processes and benefit-sharing.

Achieving LDN is crucial for Albania to ensure the sustainability of its natural resources, enhance food security, and build resilience against climate change. By committing to LDN, Albania aims to combat desertification, reverse land degradation trends, and improve the livelihoods of rural communities dependent on land resources, contributing to global efforts in combating land degradation and achieving sustainable development goals. Through these targets and strategies, Albania is actively working towards a sustainable future where land resources are protected, restored, and used wisely for the benefit of current and future generations.

1.2.2.4 Dimension Decarbonisation – Renewable Energy

Albania's RES Plan is the key policy and is harmonized in terms of goals, energy sector details and timeline with a number of other strategic and legal documents that are in force, adopted or drafted, as shown in the tables below.

Albanian legislation	**EU Directive**	**Status quo**
Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"	Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, as amended by the Commission Delegated Regulation (EU) 2022/759 of 14 December 2021	The Law adopted by the Albanian Parliament on 14 April 2023, was published in the Official Gazette No 64 of 14.04.2023 and entered into force 15 days after its publication. The Law defines the legal framework for promoting the use of energy produced from renewable sources, binding national objectives and reporting obligations regarding the share of energy from renewable energy sources to the final gross energy consumption, rules on information, statistics, certification, cooperation mechanisms, support, rules related to access and operation of networks for renewable energy sources and their connection to the electricity grid, rules on granting, transferring and cancelling guarantees of origin for energy produced by renewable sources, as well as rules for the integration of self-consumers from renewable energy and energy communities in the electricity sector. The Law revised support schemes for the use of renewable energy sources, abolished the feed-in tariff system, introduced new auction schemes in line with Directive (EU) 2018/2001, envisaged the establishment of the Renewable Energy Operator, and established the annual net-billing scheme for prosumers replacing previous monthly net-metering.
Draft Law "On production, transportation and trade of biofuels and other renewable fuels, for transport"	Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, as amended by the Commission Delegated Regulation (EU) 2022/759 of 14 December 2021	Law no. 9876, dated 14.02.2008, "On the Production, Transport and Trade of Biofuels and Other Renewable Fuels for Transport" (as amended) sets out the legal framework for granting permits for the production of as well as wholesale and retail trade in biofuels and other renewable fuels used in the transport sector. Law no. 9876/2008, as currently in force, is outdated and not aligned with Directive (EU) 2018/2001. Draft Law on Biofuels prepared on 2016, which was aimed at repealing Law no. 9876 and transposing provisions of the repealed Directive 2009/28/EC regarding biofuels and other renewable fuels for transport was called off for its revision in compliance with Directive (EU) 2018/2001.

		Currently, the Draft Law on Biofuels is being prepared by MIE in compliance to Directive (EU) 2018/2001 and consulted with stakeholders, and the experts of the Energy Community Secretariat.
Law No. 9876 of 14.02.2008 "On production, transport and trade of biofuels and other renewable fuels for transport", amended	Directive 2003/30/EC	→ Directive has been repealed in EU and in the Energy Community, replaced by Directive 2009/28/EC; The existing law on biofuels or a new law should be adopted in order to comply with the provisions of the new EU Directive 2009/28/EC on biofuels and address issues of measures to reach biofuel target, sustainability verification scheme and body etc. →The draft law 2019 "On production, transportation and trade of biofuels and other renewable fuels for transport" applies to the activities of production and use of biofuels and other renewable fuels used for internal combustion engines in transport, where the biodiesel and bioethanol levels are in accordance with Albanian standards. Starting from 2020 the minimum annual quantity of biofuels and other renewable fuels for transport in the market shall be not less than 10% of the amount consumed by transport in 2018 and 2019; biofuels produced from waste, non-food cellulosic materials and the resulting non-waste cellulosic materials shall be half the target level set for other biofuels.
Law No. 43/2015 of 30.04.2015 "On power sector", as amended	Albania has **fully transposed** electricity market rules stemming from the **EU Third Energy Package.** Provisions of Directive 2009/72/EC of 13 July 2009 concerning common rules for the internal market in electricity are fully transposed via Law no. 43/2015, dated 30.04.2015, "On the Electricity Sector".	Law No. 43/2015, dated 30.04.2015 "On power sector" sets out the main principles for the energy sector development, including RES power plants and the transmission and distribution networks. This law also includes the requirements and criteria for granting a license to carry out an activity in energy sector. The law also includes a number of specific provisions regulating the construction of a direct line or of a commercial interconnection line.

Table 3: Aligning Albanian Energy Legislation with Energy Community and EU Directives for RES

Renewable Energy Indicators	**Transposition Assessment**	**Implementation Status**	**Descriptions**
National Energy and Climate Plan (NECP) - 2030 Renewable Energy Targets	~	59%	The target of achieving a 54,4 % share of renewable energy in gross final energy consumption in the adopted National Energy and Climate Plan (NECP) is in line with the 2030 target set by the Energy Community and incorporated in the amended Renewable Energy Law. The overall 2030 renewable energy target is subdivided into sectorial targets for electricity (178,1%), transportation (34,6%), and heating and cooling (16,6%). The 2030 target for renewable energy in the heating and cooling sector is not as ambitious as required by Article 23 of Renewable Energy Directive (REDII). Following Article 26 of REDII, Albania adjusted its minimum target for renewable energy in transport to 7% by 2030.

Quality of support schemes	~	82%	The amendments to the Renewables Law abandon administratively determined feed-in tariffs. Support for renewable energy electricity generation is now provided (or will be converted to) through a competitive process in the form of contract for difference (CfD) or contract for premium (CfP). Auctions for a fixed purchase price were held, with the intention of transitioning to CfD arrangements once a robust day-ahead market is established.
Grid integration	~	55%	Secondary legislation to implement access to and operation of the networks has to be finalized and made available to all applicants. Transitional balancing rules are in place. The adopted rules for self-consumption remain to be implemented in practice.
Self-consumption and energy communities	~	75%	There is a net metering in place, enabling consumers to operate renewable energy installations with a maximum capacity of 500 kW. Albania has incorporated changes into the Renewables Law, which outlines a transition to net billing for self-consumed renewables, scheduled to commence on 1 January 2024. These amendments guarantee the involvement of citizens in renewable energy communities while preserving their privileges and responsibilities as end consumers.
Renewable energy in transport	~	1%	Draft Law on Biofuels is being prepared by MIE in compliance to Directive (EU) 2018/2001 and consulted with stakeholders, and the experts of the Energy Community Secretariat.
Guarantees of origin	~	70%	Within the framework of the regional project implemented by the Energy Community Secretariat, an electronic registry for guarantees of origin (GOs) was established for Albania. It became operational by regulator ERE in May 2023. The next critical milestone for achieving a fully operational GO system includes the adoption of disclosure rules and the calculation of the residual energy mix.
Renewable energy in heating and cooling	~	25%	The integration of renewable energy in the heating and cooling sector of Albania is in process of establishing the legal framework and measures for the integration of renewable energy, including heat pumps in individual heating systems is needed.

Table 4: Renewable Energy Implementation (Source: Implementation Report 2023 Albania / 7)

Albania, although a small country with a low emission contribution, is determined to assume its share of responsibility in this process and has taken action to support decarbonization, green growth and revitalisation in recent years. Albania has taken very important steps towards policy documents and action plans on climate change, involving especially energy and transport sectors, but also agriculture, forestry, waste administration, etc.

As of July 2nd 2019, the Government of Albania is the first country in the Region with an endorsed Strategy on Climate Change, and related Action Plans on Mitigation and Adaptation respectively, representing a general cross-cutting strategy with policy objectives and concrete actions to: reduce GHG emissions and Become resilient to climate change.

In line with EU efforts on climate change and our respective obligations in the EU accession process, the law no 155/2020 "on Climate Change" has been approved on December 2020.

Recognizing the need to map out a pathway towards carbon neutrality by 2050, Albania will develop and adopt the Long-Term, Low-Greenhouse Gas Emissions Strategy when revising the actual National Strategy on Climate Change, in accordance with the provisions of the EU Climate Law, Governance Regulation and other elements of the EU climate policy framework, and adopt them without further delay.

Albania has regularly fulfilled its obligations as a non-Annex 1 Party to UNFCCC by successfully submitting so far four National Communications (in 2002, 2009, 2016 and 2022) and the First Biennial Update Report on 2021.

The Law no.2/2023 "on fluorinated gases" aims to control and reduce the use of fluorinated gases, which are potent greenhouse gases. By regulating the reduction of these substances, the law complements existing climate and energy policies, contributing to overall emissions reduction.

The Ministry of Tourism and Environment has initiated the process to amend the national law on climate change to be in line with the relevant parts of the updated ETS Directive (Directive 2003/87/EC) with the purpose of setting up the necessary legal base for the MRVA. Furthermore, secondary legal acts will align with MRR regulation (Commission Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions); 2.) AVR Regulation (Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers, in order to establish the necessary regulatory framework for introducing carbon pricing.

The Renewable Energy Sources Law (RES) No 24/2023 "On promoting the use of energy from renewable sources", has partially transposed the Renewable Energy Directive (EU) 2018/2001.

The Law adopted by the Albanian Parliament on 14 April 2023, was published in the Official Gazette No 64 of 14.04.2023 and entered into force 15 days after its publication. The Law defines the legal framework for promoting the use of energy produced from renewable sources, binding national objectives and reporting obligations regarding the share of energy from renewable energy sources to the final gross energy consumption, rules on information, statistics, certification, cooperation mechanisms, support, rules related to access and operation of networks for renewable energy sources and their connection to the electricity grid, rules on granting, transferring and cancelling guarantees of origin for energy produced by renewable sources, as well as rules for the integration of self-consumers from renewable energy and energy communities in the electricity sector. The Law revised support schemes for the use of renewable energy sources, abolished the feed-in tariff system, introduced new auction schemes in line with Directive (EU) 2018/2001, envisaged the establishment of the Renewable Energy Operator, and established the annual net-billing scheme for prosumers replacing previous monthly net-metering.

Overview of Albanian legislation:

- Law No. 24/2023, dated 23.03.2023, "On Promoting the Use of Renewable Resources";
- CoM Decision no. 480, dated 31.07.2018, "On the approval of the National Energy Strategy 2018–2030";
- CoM Decision no. 872, dated 29.12.2021, "On the approval of the National Energy and Climate Plan 2020–2030";
- CoM Decision no. 349, dated 12.06.2018, "On the approval of Supporting Measures for Promotion of the Use of Electricity from Solar and Wind Renewable Sources and the Procedures for Selection of the Projects" (as amended);
- CoM Decision no. 687, dated 22.11.2017, "On the approval of the Methodology for Setting the Annual Purchasing Price of Electricity from the Existing Priority Producers";

- CoM Decision no. 369, dated 26.04.2017, "On the approval of the Methodology for Setting the Purchasing Price of Electricity Produced by Small Solar and Wind Renewable Sources";
- CoM Decision no. 822, dated 07.10.2015, "On the approval of the Construction Rules and Procedures of New Electricity Production Capacities, Which Are Not the Object of the Concession" (as amended);
- MIE Guideline no. 3, dated 20.06.2019, "On approval of the Facilitated Procedure of Authorisation for Connection to the Distribution System of Small Photovoltaic Self-Producers";
- ERE Board Decision no. 229, dated 20.12.2019, "On approval of the Regulation for Issuance, Transferring and Cancelling of the Guarantees of Origin for Electricity Produced from Renewable Energy Sources";

The Energy Strategy addresses new laws, regulations and institutional reforms currently underway in Albania, including incentives for EE and RES, electricity tariff reform, market development and integration with EU and regional markets.

1.2.2.5 Dimension Energy Efficiency

The Albanian Government has involved Energy Efficiency in its Priorities since year 2018 and significant progress is expected to be made during the next coming years. The legislation for energy efficiency, energy performance in buildings and for the Energy labelling of energy related products is in place with the following references:

- Law No 124/2015 On Energy Efficiency, as amended by law 28/2021
- Law No. 116/2016 On Energy Performance in Buildings
- Law No. 52/2014 On the Energy Labelling of Energy Related Products

The above mentioned legal framework establishes all the requirements and necessities for fulfilling the obligations set from the respective EU directives that the legislations are aligned to in part or fully. They are in compliance with the objectives of the Albanian National Energy Strategy 2018-2030 (DCM No.480 dt 31.07.2018) and with the first National Energy and Climate Plan 2020-2030 (DCM No. 872, date 29.12.2021). The law on Energy Efficiency and the Law "On Energy Performance in Buildings" foresee the Agency for Energy Efficiency as the main institution responsible for their implementation while the law "On the Energy Labelling of Energy Related Products" foresees the Market surveillance authority as the main actor responsible for its implementation. Both these institutions are fully staffed and functioning with the responsibilities clearly indicated in the respective legislations responsible for their establishment.

The Law on Eco-design which will establish a framework for the setting of eco-design requirements for energy-related products, is not transposed yet and is currently planned for year 2025.

The Law No 124/2015 of 12.11.2015 "On Energy Efficiency", as amended, is fully aligned with the Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC. It regulates the relations between state authorities and entities, public or private, operating in the residential, services, industry, transport, agriculture, and all other sectors of the economy, to promote the use of energy efficiency and market development for energy services. The Ministry responsible for energy is working on amending the law on energy efficiency to further align with the latest amendments done to the EED recast (EU Directive 2023/1791).

For the implementation of the Law No 124/2015 of 12.11.2015 “On Energy Efficiency”, as amended, there were approved the following legal acts:

- Decision of Council of Ministers No. 852/2016 "On the creation and procedures of organization and operation of the Agency for Energy Efficiency";
- Decision of Council of Ministers No. 342/2019 "On the approval of the categories, conditions and qualification requirements for the energy manager”;
- Decision of Council of Ministers No. 407/2019 "On the approval of the procedure, categories, conditions, qualification and professional experience requirements for the person to whom the energy auditor's certificate is issued";
- Decision of Council of Ministers No 189 of 5.04.2023 “On the approval of the monitoring and verification platform”;
- DCM No. 468, date 17.07.2024: On determining of the amount in percentage of the surface of the stock of public buildings to be renovated every year, against the total surface of the stock of public buildings”;
- Guideline of Minister of Infrastructure and Energy No 23 of 17.10.2022 “On the contract model for energy performance contracting”;
- Guideline of Minister of Infrastructure and Energy No 1 of 27.01.2023 “On the approval of the form and deadlines for the presentation of data and information on energy consumption”;
- Guideline of Minister of Infrastructure and Energy No 2 of 1.02.2023 “On elements, requirements and general principles of cost-benefit analysis for assessing the potential of application for high efficiency cogeneration and efficient heating and cooling”;
- Guideline of Minister of Infrastructure No. 9, dated 29.05.2023 "On the type and frequency of information made available by the Energy Efficiency Agency";
- Guideline of Minister of Infrastructure No. 4/2024 "On the rules for determining thermal energy consumption";
- Minister Order No 203 of 18.10.2022 “On the approval of the format of the action plans of large energy consumers and the annual progress report”;
- Minister Order No 206 of 25.10.2022 “On the approval of the format of local action plans for energy efficiency and the progress report for the implementation of the plans”;
- Minister Order No. 19, dated 26.01.2024 "On the approval of the regulation on the organization and internal functioning of the Agency for Energy Efficiency”;
- Minister Order No. 47, dated 29.02.2024 "On the approval of the reporting format of input data and assumptions used for the calculation of the optimal cost for the minimum energy performance requirements of buildings".

Several other bylaws are in process of approval such as the Decision of Council of Ministers “On the approval of public procurement rules and procedures for the purchase of products, facilities and buildings with high performance and efficiency” which has been decided nationally to be part of the regulation under the Law “On Public Procurements”.

The Ministry responsible for energy efficiency in collaboration with the Public Procurement Agency is currently developing secondary legislation amendments to the Public Procurement Rules with the technical assistance of World Bank. This legislation will include the Energy Efficiency First Principle into some procurement procedures that are above a certain threshold. The first draft of the DCM “On amending of the decision no. 285, dated 19.05.2021, related the approval of public procurement rules", is in consultation phase and will be approved within 2024.

The Law No. 116/2016 On Energy Performance in Buildings partially transposes the directive 2010/31/EU, as amended, while the ministry responsible for energy has drafted the new Law to transpose the latest changes according to the recast EU Directive 2024/1275, within 2024.

For the implementation of the Law No 116/2016 of 10.11.2016 “On Energy Performance in Buildings”, there are in place the following legal acts:

- DCM No. 256/2020 "On the approval of the methodology for calculating the optimal cost for the minimum energy performance requirements of buildings, units and building elements";
- DCM No. 537/2020 "On the approval of the minimum energy performance requirements of buildings and building elements";
- Decision of Council of Ministers No. 958/2020 "On the approval of the procedures and conditions of the energy performance certification of buildings and of the model, content and conditions of registration of the "Certificate of energy performance of buildings";
- Decision of Council of Ministers No. 934/2020 "On approval of criteria and procedures for the selection method and quantity of certificates to be verified, as well as the process of supervision of energy performance certificates in buildings";
- Decision of Council of Ministers No. 1094/2020 "On the approval of the national methodology for calculating energy performance in buildings";
- Decision of Council of Ministers No. dated 25.11.2020 "On the criteria and procedures for the selection method and the number of certificates to be verified, as well as the supervision process of the energy performance certificates of buildings";
- Decision of Council of Ministers No. 274, dated 04.05.2023 "On the categories of buildings that are exempted from the implementation of the law on energy performance in buildings";
- Guideline of the Minister of Infrastructure and Energy No. 2 dated 01.02.2023 "On the elements, requirements and general principles of cost and benefit analysis, for the assessment of the application potential of high-efficiency cogeneration, as well as of heating efficient cooling;
- Order of the Minister of Infrastructure and Energy no. 47, date 29.02.2024 "For the approval of the reporting format of the input data and assumptions used for the calculation of the optimal cost for the minimum energy performance requirements in buildings";

Law No. 52/2014 “On the Energy Labelling of Energy Related Products”, is fully aligned with the regulation EU 2017/1369, of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU. The work is ongoing for secondary legislation to be fully aligned as well with the respective delegate regulations related to each specific products that falls in this regulation.

Draft decision of Council of Ministers “On Labelling of Tyres” transposing Regulation (EU) 2020/740 on labelling of tyres, was prepared and is currently undergoing consultation phase with relevant institutions and it is foreseen to be adopted at the first semester of 2025.

The following table below lists the current energy policies, the respective laws/DCM, and a short description.

Current energy policies	Law/DCM	Description
Policy and Legislation in place		
National Strategy of Energy	DCM No. 408 of 31.7.2018	Setup objectives and targets for all energy sector, investments, and responsible institutions
National Plan for Energy and Climate (NECP) 2020 – 2030	No 872 of 29.12.2021	NECP has define the roadmap for energy efficiency, the share of RES and GHG emissions for the period 2021 – 2030.
"On some amendments and additions of Law no. 124/2015 "On energy efficiency", as amended	Law no. 28/2021 of 8.3.2021	The aim is the full approximation with the provisions of the Directive 2012/27/EU of the European Parliament.
Law "On Energy Efficiency"	Law No. 124/2015 of 12.11.2015, amended	Transposition of EE Directive 2012/27/EU. The purposes of the law are: a) drafting national rules and policies for the promotion and improvement of energy efficiency with the aim of saving energy and increasing security of supply as well as removing barriers to the energy market; b) setting national energy efficiency objectives; c) increasing the competitiveness of operators.
Law "On the Energy Performance in Buildings"	Law No. 116/2016 of 10.11.2016	Transposition of Directive 2010/31/EU (EPBD) This law aims to create the legal framework for improving the energy performance in buildings keeping into account the local and climatic conditions of the country, interior comfort of buildings and cost effective. Secondary legislation not yet fully in place.
Law "On the Energy Labelling of Energy Related Products"	Law No. 52/2024 of 21.6.2012 "On the Energy Labelling of Energy Related Products"	The work is ongoing for the transposition of the secondary legislation to be fully aligned as well with the respective delegate regulations related to each specific products that falls in this regulation.
Secondary legislation in place for Energy Efficiency		
"On the creation and procedures of organization and operation of the Agency for Energy Efficiency"	DCM No. 852/2016	The Agency for Energy Efficiency (AEE) is a public, budgetary legal entity, under the responsibility of the minister responsible for energy which is responsible for implementing policies and promoting energy efficiency measures.
"On the approval of the regulation on the categories, conditions, qualification and experience requirements for certifying of energy auditors"	DCM No. 407 of 19.6.2019	According to Directive 2010/31/EU (Energy Performance of Buildings Directive - EPBD), this decision is aimed at and extends the field of action to: a) determination of the procedure, categories, conditions and requirements of the qualification and professional experience of the energy auditor; b) determining the conditions, for natural persons, to be equipped with the energy auditor's certificate for the energy audit in buildings and/or industry.
"On the approval of categories, conditions and requirements of qualification for energy manager"	DCM No. 342 of 22.5.2019	According to Directive 2012/27/EU (Energy Efficiency Directive - EED), the purpose of this decision is to determine the categories, conditions and requirements for the qualification and professional knowledge of the energy manager. The Agency for Energy Efficiency (AEE) equips energy managers with a knowledge testing certificate to ensure they are responsible for maintaining equipment that

		consumes all forms of energy, improving and monitoring energy use patterns and performing of other tasks for the rational use of energy in buildings and industry.
"On the approval of the monitoring and verification platform"	DCM No 189 of 5.04.2023	This DCM aims to setup the Monitoring and Verification Platform for Energy Efficiency which will serve as a database to assess the achievement of national energy efficiency objectives.
"On determining of the amount in percentage of the surface of the stock of public buildings to be renovated every year, against the total surface of the stock of public buildings"	DCM No. 468, date 17.07.2024	This decision determine the percentage of the surface of the stock of public buildings to be renovated every year, compared to the total surface of the stock of public buildings
"On the contract model for energy performance contracting";	Guideline of Minister of Infrastructure and Energy No 23 of 17.10.2022	The contract model adopted aim promoting the development of the national market of energy services in the Republic of Albania, defining the rules and procedures for the operation of energy service companies (ESCO). This regulation aims also at the creation of the energy performance contract model that will regulate the activity between legal entities that provide energy services to improve energy efficiency and physical and/or legal entities, public or private, that are end consumers of energy (customers) on cooperation conditions and procedures to implement measures that reduce energy consumption and costs in a technically and financially sustainable manner.
"On the approval of the form and deadlines for the presentation of data and information on energy consumption"	Guideline of Minister of Infrastructure and Energy No 1 of 27.01.2023	The Agency for Energy Efficiency (AEE) provides information and data related to energy consumption in the country and their respective costs, in accordance with the legal acts in force and the provisions of this instruction. 2. AEE provides updated information on the identification data of the energy manager employed by the Large Energy Consumer
"On elements, requirements and general principles of cost-benefit analysis for assessing the potential of application for high efficiency cogeneration and efficient heating and cooling"	Guideline of Minister of Infrastructure and Energy No 2 of 1.02.2023	This regulation consists on the assessment at the national level of the potential for the use of high-efficiency cogeneration, as well as efficient heating and cooling in central systems. Agency responsible for energy efficiency evaluate the realization of the cost and benefit analysis in at least 30% of the local self-government units, depending on the available energy resources and the climatic zone.
"On the type and frequency of information made available by the Energy Efficiency Agency"	Guideline of Minister of Infrastructure No. 9, dated 29.05.2023	The purpose of this instruction is to inform and increase the capacities of interested parties, related to energy efficiency mechanisms, the various methods and practices that serve to increase energy performance, through updated information and presentation of best practices available for achieving the national energy saving target.
"On the rules for determining thermal energy consumption"	Guideline of Minister of Infrastructure No. 4/2024	The main purpose of the regulation is the determination of the thermal energy consumption rules (hereinafter "Methodology") is to implement consumption-based billing by defining the thermal energy bill calculation rules for customers living in multi-unit buildings.
"On defining the rules, procedures and methodology for family customers benefiting from financing measures for energy saving from solar panels"	Guideline of Minister of Infrastructure and Energy No 22 of 27.10.2022	Through this support scheme that will contribute to the reduction of long-term consumption of electricity, 2,000 family customers have received subsidies from the government to cover up to 70% of the cost for the installation of solar panels that will supply their buildings with hot sanitary water.

"On the approval of the format of the action plans of large energy consumers and the annual progress report"	Minister Order No 203 of 18.10.2022	Through the implementation of these measures it will be possible to guarantee the achievement of energy savings at the level of at least 4% of the total equivalent energy consumed by this category of consumers. These plans are drawn up based on energy audit reports for large consumers completed by a licensed energy auditor. Large energy consumers which have certified their energy management system to the ISO standard will use the Progress Report format to report achievements in energy reductions.
"On the approval of the format of local action plans for energy efficiency and the progress report for the implementation of the plans"	Minister Order No 206 of 25.10.2022	The Order aims to determine the structure/format of the preparation and presentation of local energy efficiency plans and the format of periodic reporting to the responsible structures which will monitor economic activities at the municipal level. This legal act will serve as a mechanism which will improve energy efficiency and will reduce the final energy consumption in buildings, services, facilities and other activities of the local government unit.
"On the approval of the reporting format of input data and assumptions used for the calculation of the optimal cost for the minimum energy performance requirements of buildings"	Minister Order No. 47, dated 29.02.2024	This order set in place the reporting format of input data, assumptions used for the calculation of the optimal cost of minimum energy performance requirements in buildings, units and building elements.
Secondary legislation in place for energy performance in building buildings and industry		
"On the approval of the methodology for calculating the optimal cost levels for the minimum energy performance requirements in buildings, units and building elements"	DCM No. 256 of 27.3.2020	New adoption according to Directive 2010/31/EU, which sets out the framework of the comparative methodology to be used for calculating the cost-optimal levels of the minimum energy performance requirements for new and existing buildings and building elements. The methodology defines the applicable rules in the selected reference buildings, in order to identify the optimal cost levels of the minimum energy performance requirements.
"On the Criteria and procedures of selection and the amount of certificates to be verified, as well as the process of supervising the energy performance certificates" of buildings "	DCM No. 934 of 25.11.2020	According to Directive 2010/31/EU (Energy Performance of Buildings Directive - EPBD), with the purpose to regulate the process of supervision of energy performance certificates in buildings, defining the criteria and procedures for the selection method and the quantity of certificates to be verified.
"On the procedures and conditions of energy performance certification of buildings and the model, content, conditions of registration of "Certificate of energy performance" of the respective buildings"	DCM No. 958 of 02.12.2020	According to Directive 2010/31/EU (Energy Performance of Buildings Directive - EPBD) with the purpose to establish the model, content, conditions of registration of certification of energy performance, for new and existing buildings, throughout the territory of the Republic of Albania.
DCM "On the National Methodology of calculating energy performance in buildings"	DCM No. 1094 of 24.12.2020	According to Directive 2010/31/EU (Energy Performance of Buildings Directive - EPBD), set in place the methodology for the calculation of energy performance in buildings.
"On the minimum criteria of energy performance in buildings"	DCM No. 537 of 08.07.2020	According to Directive 2010/31/EU (Energy Performance of Buildings Directive - EPBD), set out the minimum criteria an standards of energy performance in buildings to achieve the optimal level of comfort inside the building.
"On the establishment of the State Inspectorate of Market Surveillance (SIMS)".	DCM No. 36 of 20.1.2016	State Market Surveillance Inspectorate (SMSI) is responsible for inspecting the safety of non-food products for use by consumers and for the protection of intellectual property. Among others State Market Surveillance

		Inspectorate is responsible for the inspecting the implementation of primary and secondary legislation in the area of energy labeling on energy related products. The Sectors of Electrical Products and Mechanical Products are responsible for the progress of this process.
"On the categories of buildings that are exempted from the implementation of the law on energy performance in buildings"	DCM No. 274, dated 04.05.2023	This decision aims to define other categories of buildings and building units that will be subject to exemption from the obligations arising from law no. 116/2016, "On the energy performance of buildings".
"On the criteria and procedures for the selection method and the number of certificates to be verified, as well as the supervision process of the energy performance certificates of buildings"	DCM No.934 dated 25.11.2020	This decision aims to define the criteria and procedures for the selection certificates of energy performance certificates of buildings to be verified from the Agency for Energy efficiency.
"On the elements, requirements and general principles of cost and benefit analysis, for the assessment of the application potential of high-efficiency cogeneration, as well as of heating efficient cooling	Guideline of the Minister of Infrastructure and Energy No. 2 dated 01.02.2023	The purpose of this guideline is to evaluate at the national level the potential for the use of high-efficiency cogeneration, as well as efficient heating and cooling in central systems, carried out by the agency responsible for energy efficiency.
"For the approval of the reporting format of the input data and assumptions used for the calculation of the optimal cost for the minimum energy performance requirements in buildings"	Order of the Minister of Infrastructure and Energy no. 47, date 29.02.2024	This order presents data, assumptions and how to calculate the optimal cost of minimum energy performance requirements in buildings, units and building elements.

Table 5: Policies and key laws related to the EE dimension, including Energy Community and EU legislation

The following table below shows the implementation of energy efficiency policies according to Implementation Report 2023 Albania.

Energy Efficiency Indicators	**Transposition Assessment**	**Implementation Status**	**Descriptions**
National Energy and Climate Plan (NECP) 2030 Energy Efficiency Targets and policy measures	~	64%	Albania has taken steps towards energy efficiency and climate action with the introduction of its 2030 energy efficiency targets and associated policies and measures, outlined in the NECP adopted in February 2022. These measures, however, are not aligned with the 2030 targets set by the Energy Community. During the reporting period, the Ministry of Infrastructure and Energy adopted new by-laws to implement the Energy Efficiency Law, covering aspects such as local energy efficiency action plans and building requirements. The drafting of further by-laws addressing key areas like monitoring and verification, energy efficiency obligations, and criteria for public procurement is ongoing. Their adoption remains pending. To promote energy demand reduction within public institutions, the Government has imposed obligatory measures, requiring a 15% reduction in electricity consumption. Nominated energy managers are responsible for progress monitoring and reporting. Penalties have been established for non-compliance.

Energy Efficiency in buildings	~	86%	A long-term building renovation Plan has not yet been adopted but is under preparation. Following the adoption of relevant by-laws to implement the 2016 Law on Energy Performance of Buildings, Albania has established an operational energy performance certification system. The Energy Efficiency Agency supports the issuance of energy performance certificates for buildings and oversees the scheme. More than 123.000 audit reports have been issued since its inception.
Energy Efficiency scheme and financing	~	44%	The Ministry of Infrastructure and Energy drafted an order for the approval of the Energy Efficiency Obligation Scheme, which has not been adopted. In terms of funding mechanisms for energy efficiency, no dedicated fund has been established. Investments in energy efficiency are currently being channeled through the state budget and foreign financial aid, with a particular focus on the buildings sector. Furthermore, local banks are actively involved in promoting energy efficiency by offering credit lines for various measures, with a primary focus on enhancing the thermal insulation of building envelopes in private buildings. These initiatives are subsidized with up to 50% of the costs being financed by the Municipality of Tirana. The regulation and model contracts for energy performance contracting of the energy service (ESCO) market model is in place.
Energy Efficient products – labelling	~	38%	Law No. 52/2014 On the Energy Labelling of Energy Related Products is in place. The work is ongoing for the transposition of the secondary legislation to be fully aligned as well with the respective delegate regulations related to each specific products that falls in this regulation.
Efficiency in heating and cooling	~	38%	While the Energy Efficiency Law introduced the legal basis for developing a comprehensive assessment of the potential for efficient heating and cooling in 2021, the conduct of assessments in line with the requirements of Article 14 of the Energy Efficiency Directive is missing. Moreover, the transposition of provisions related to the inspection of heating and air-conditioning systems is pending. Recently, Albania subsidized 2.000 families with solar water heating systems

Table 6: Energy Efficiency Implementation (Source: Implementation Report 2023 Albania / 8)

Some developments and implementation of EE measures at primary energy and final energy consumption level

Due to the investments planned and realised from Albanian power companies for strengthening of power capacities for transmission and distribution, and efficiency increasing of the grids (less technical and non-technical losses in both Transmission and Distribution), the situation has been already improving regarding the reduction of technical losses and increasing the collection of electricity bill payments (non-technical losses). According to ERE annual report, OST and OSHEE Group has been undertaking some investments resulting in an improvement of losses in 2023. OST is going to continue investments for improvement of the grid in order to improve the level of collection and reduce the non-technical losses in the electricity distribution system. OSHEE S.A. is steadily improving its performance on reducing the electricity losses and increasing the bill collection rates. (www.ere.gov.al, annual reports).

During the year 2023, the effectiveness of the sale of electricity continues in increased values, reaching always referring to the determining factors in the level of efficiency of electricity consumption, that are:

- the level of electricity losses in distribution;
- the level of receipts of billed electricity.

The overall losses reported by the company for 2023 amount to 18.93%, thus marking a decrease in the level of losses compared to 2022. The total level of collections reported by OSSH sh.a. it is 99.4% compared to electricity billed. This level of receipts for 2023 results in an increase, compared to the level of collections realized for 2022.

The results achieved are shown in the tables below.

Year	2016	2017	2018	2019	2020	2021	2022	2023
Distribution Losses (%)	45.07%	26.41%	23.96%	21.79%	21.48%	20.62%	19.70%	18.93%
Transmission Losses (%)	2.25%	2.08%	2.46%	2.12%	2.12%	2.13%	2.09%	2.17%

Table 6: Distribution and transmission losses 2016 – 2023 (in %) (*Source: Energy Regulatory Authority (ERE annual reports)*)

Year	2018	2019	2020	2021	2022	2023
Bill collection rate %	101.90%	98.40%	95.80%	97.40%	98%	99.40%

Table 7: Bill collection rate in 2018 – 2023 (in %) (*Source: Energy Regulatory Authority (ERE annual reports)*)

Some other progress and developments achieved with regard to the EE at final energy consumption level are described below, based on the 5th annual report from AEE, issued at the end of 2021.

In the building sector, activities have started and need to be widely rolled out:

The Project "On Energy Auditing of Public Buildings" contracted from the MIE under the state budget as foreseen in the Mid-Term Budgetary Programme 2018 – 2020 aims at:

- Creating an inventory of public building stock and to place data on a server of the Energy Efficiency Agency by naming and codifying them in the national electronic register, capable of integrating and allowing its own data to be integrated into the servers and databases of the Albanian Agency for Information Society (NAIS);
- Auditing the entire stock of buildings for three years and to register it on the server with the data related to the cost's effective analysis of their renovation. During 2018, 60 buildings have been selected representing all the identified typologies, providing the necessary information to draft energy efficiency policies taking cost effectiveness into account.

The project for improving the Energy Efficiency in the "Student City No 2" has been completed and in some buildings in "Student City No 1". On 17 December 2019 was successfully completed the process of technical evaluation of bids for the design of the project of reconstruction with Energy Efficiency of the buildings of "Student City No. 1" in cooperation with KfW. This is a big investment that has started earlier in 2017 with the rehabilitation of "Student City No.2".

The Municipality of Tirana has developed projects to improve the energy efficiency by interfering with the facade of several private buildings. These projects are carried out with joint investment, 50% from the fund of the Municipality of Tirana and 50% from the residents. In 2018, the municipality of Tirana has provided a fund of €565'000 as an incentive for the citizens who want to invest in energy efficiency. The municipality grants a part of the investment.

In the transport sector, measures for the rehabilitation and reconstruction of some streets help to reduce the fuel consumption of the vehicles. Increasing the use of bicycles and increasing the share of public transport has facilitated to reduce the use of private vehicles. A tax was induced to promote the use of new and less fuel consuming vehicle causing less emissions. Nevertheless, EE measures must be significantly expanded.

Little progress was achieved in the industry sector. The need for the improvement of the EE law concerns the obligation schemes and energy audits as a key element for identification of the actual energy consumption and energy targeted to be consumed after investing in EE measures implementation.

Some energy efficiency projects are under development/implementation, as described by AEE 5th annual report issued at the end of 2021:

a) The Project "Development of a Financing Mechanism for Energy Efficient Public Buildings in Albania" was financed by the World Bank. The objective of this activity is to inform and facilitate decision-making for sustainable financing mechanisms for energy efficiency (EE) in the public buildings sector. This will also serve as a possible vehicle for expanding to residential buildings in the future.

b) Smart Energy Municipalities is a project financed by the Switzerland Embassy. The objective of this bilateral Project is to support selected Albanian municipalities to manage energy in a sustainable manner and to implement the national energy policy at local level. To this end, it will pilot and institutionalize an energy management system that is based on the European Energy Award (EEA) and incorporates the requirements of the national energy legislation. The Project contributes to improve energy management, reduce energy consumption, to mitigate climate change and to promote sustainable economic development. The expected results at outcome and output level are as follows:

- Outcome 1: The implementation of the national energy policy is supported at the local level.
- Outcome 2: Pilot municipalities benefit from an energy management system that allows to be scaled up to further municipalities.

These objectives will be achieved through the following outputs:

- Output 1: Suitable energy management units are established and strengthened. Local Energy Strategies are developed for pilot municipalities.
- Output 2: Quick-win investments are realized. An incentive scheme for the mid- and long term implementation of an Albanian EEA Programme is prepared.
- Output 3: Key institutions related to energy management are strengthened and the awareness of the population and decision makers is increased.
- Output 4: An Albanian EEA Programme at national level is designed and introduced.

c) Study and Expert Fund measure on "Energy Management in Municipalities" by Germany/GIZ, strengthen partner capacities in energy efficiency and to plan, prioritize and implement selective energy efficiency measures at the municipal level in 12 municipalities.

d) Regional Program: "ORF Energy Efficiency" by GIZ. The relevant political and civil society actors in Southeastern Europe increasingly take advantage of regional networks for the implementation of EU standards in the field of climate protection.

e) Project for replacement of high efficiency pumps (with engine efficiency class IE3 (Premium Efficiency), installation of SCADA system and photovoltaic panels for power generation in 9 water supply systems in the municipalities of Tepelena and Memaliaj. The Agency for Energy Efficiency, in the framework of supporting investments for the improvement of energy efficiency, has made investments in 9 water supply systems in the municipalities of Tepelena and Memaliaj (Tepelena, Memaliaj-village, Lekel, Dragot, Veliqot, Dukaj, Kalivac, Metohasanaj and Bumbull).

The intervention in these water supply systems consists in the replacement of the existing fully depreciated pumps with pumps manufactured with EU standards and with IE3 (Premium Efficiency) engine efficiency class, installation of photovoltaic panels for energy production as well as installation of SCADA system, for monitoring and more efficient use in relation to electricity consumption, with the objective of reducing energy consumption on an annual basis, and reducing CO2 emissions.

g) Pilot project for the improvement of Energy Efficiency in wastewater treatment plants in the municipality of Durrës. In this plant the investment has been realized for the improvement of energy efficiency in 11 stations and consists in the repair of some pumps and the replacement of those that are completely depreciated, as well as the improvement of the SCADA system, for the most efficient monitoring and use in relation to consumption of electricity. The new pumps are manufactured to EU standards and to the IE3 (Premium Efficiency) motor efficiency class.

h) Pilot project for installation of lighting system, parking, car power supply "2 km Smart-City- Clean Energy Road. This project will serve as a promoter of energy efficiency and clean energy and the project will precede the growing trend of using EV, to be extended in the future throughout the territory of Albania. Its main purpose is to meet market demands for electric car charging, reduce electricity consumption and reduce CO_2 emissions in urban lighting, as well as the use of electric cars, bringing the relevant environmental benefits. In this project will be realized the improvement of the street and decorative lighting system, the installation of solar panels for energy production (Smart Flower photovoltaic plant, Aeroleaf Wind Tree wind farm), as well as electric vehicle chargers.

i) Study for the creation of the network for the placement of charging stations for electric cars in the territory of Albania. In order to improve the pollution coming from the means of transport, AEE is at the end of the study for the creation of a network of placement of charging stations to cover all the needs of electric cars in the whole territory of Albania. Upon completion of the study AEE will apply for funding for the possibility of conducting this study.

j) Project idea on electrification of urban and intercity transport lines in the Municipalities of Tirana, Vlora, Durres. One of the polluters in the means of transport is the urban transport in the cities as well as the one between the cities of the country. For this purpose, a study is being drafted for the electrification of urban transport lines in the three municipalities of the country Tirana, Vlora, Durres. After drafting the study, the possibility of financing this project will be seen to start with the transformation of urban transport by introducing the use of electric vehicles.

k) Interreg IPA II Cross-border Cooperation Program Greece-Albania 2014-2020. The objective of the project is the implementation of small-scale nZEB (nearly zero energy buildings) investments and the development of a joint approach towards public nZEBs through smart initiatives and the establishment and operation of energy communities in the eligible area. This project is being implemented in the municipality of Gjirokastra and includes the reconstruction of the Cultural Center "Fato Berberi", significantly improving the energy efficiency of the building and turning it into a building with consumption close to zero energy.

l) Feasibility study and project implementation of the heating system of Korça excluding timber. This project is the final phase and aims to replace the use of firewood for heating, as the basic material used in this city (zone C), with natural gas, which will be taken from the TAP network which passes in the area of the city of Korca. After the completion of the project AEE will apply for the possibility of its realization. This project will significantly reduce air pollution in the city of Korça, the emission of greenhouse gases into the atmosphere, as well as will stop the cutting of wood in forests for heating use.

m) Urban and street lighting standards in the Republic of Albania. National urban and street lighting has a significant consumption of electricity, also due to the fact that the light bulbs are old and with high electricity consumption. Setting standards according to the best international ones in urban and street

lighting in the territory of Albania, will force all institutions investing in this sector to use high energy efficiency luminaires by significantly reducing electricity consumption and costs. of maintenance.

n) Project for calculating the optimal cost for the minimum conditions in buildings. Following the improvement of the work for the realization of the energy efficiency parameters in the buildings in cooperation with the Polytechnic University of Tirana, standards are being drafted for the minimum condition of efficiency in the buildings. Setting these standards will increase the quality of construction as well as reduce electricity consumption as well as environmental pollution.

o) Pilot project for the construction of a building with "0 Energy" (keys in hand). This project consists of the construction of a new AEE building with close to zero energy consumption. The realization of the project is foreseen to be realized during 2022.

Projects That Are Being Realized by AEE During the Years 2022-2024

1. Pilot Project for "Audit, Certification, Design, and Implementation of a High Efficiency Lighting System, Electric Car Charging Stations, and Photovoltaic Panels on Shkodra's Eastern and Western Ring Road" - Clean Energy Road.

The Agency for Energy Efficiency is developing a pilot project targeting the eastern and western ring roads of Shkodra. The current lighting system is severely outdated, with numerous lights malfunctioning, theft of electric lines, and damage from car accidents. High-pressure sodium (HPS) lamps, which consume a lot of energy and contain environmentally harmful mercury, are still in use. Some segments of the line are directly connected to the OSHEE network, causing continuous energy consumption and significant losses.

The main objectives are:

- Upgrading the Lighting System: Installing high-efficiency lighting to replace the outdated HPS lamps.
- Electric Car Infrastructure: Providing electric car charging stations and photovoltaic trees to promote road transport electrification, reducing CO2 emissions and supporting the goals of the National Plan for Energy and Climate.

This initiative will enhance energy efficiency, reduce environmental pollutants, and foster sustainable transportation solutions in Shkodra.

2. Pilot Project: "Audit, Certification, Design Implementation, and Realization of Works for the Renovation of Existing Multi-Family Residential Buildings with High Energy Efficiency in the City of Tepelena"

The Agency for Energy Efficiency is developing a pilot project targeting the renovation of five existing multi-family buildings (1, 4, 6, 7, 8) identified by the Municipality of Tepelena. Over time, these buildings have experienced significant depreciation due to years of exposure, humidity, and lack of maintenance. The facades show visible damage such as plaster falling off and cracks throughout.

Objectives of the Pilot Project:

- Energy Consumption Reduction: Implement all phases of design and execution to achieve a substantial reduction in energy consumption.
- Improving Comfort: Enhance the interior living conditions in accordance with current environmental and health standards.
- Public Awareness: Raise awareness among the population through practical demonstrations of energy efficiency interventions.

3. Pilot Project: "Audit, Certification, Design Implementation, and Realization of Works for Renovation of Existing Multi-Family Residential Buildings with High Energy Efficiency in the City of Korça"

The Agency for Energy Efficiency is launching a pilot project to renovate three existing multi-family buildings identified by the Municipality of Korçë. These buildings, mostly built with full brick before the 90s, have suffered depreciation over the years due to humidity, lack of maintenance, and exposure to the elements. Some plastering has been done, but it has also deteriorated over time, leading to visible damage such as falling plaster and cracks.

Objectives of the Pilot Project:

- Energy Consumption Reduction: Implement all phases of design and execution to achieve a significant reduction in energy consumption.
- Improving Comfort: Enhance the interior living conditions to meet current environmental and health standards.
- Public Awareness: Raise awareness among residents through practical demonstrations of energy efficiency improvements.

This initiative aims to improve both the energy efficiency and living conditions of these buildings, setting a precedent for future projects.

4. Certification Audit and Implementation Project for the Renovation of Existing Multi-Family Residential Buildings with Energy Efficiency in Various Cities “Shkodër, Malësi e Madhe, Kurbin, Kukës, Has, Lezhë, Puke, Vau i Dejës, Klos, Fushë Arrë, Mat, and Bulqizë”

This project, developed by the Agency for Energy Efficiency, consists of a pilot program targeting multi-family residential buildings proposed by municipalities in Shkodër, Malësi e Madhe, Kurbin, Kukës, Has, Lezhë, Puke, Vau i Dejës, Klos, Fushë Arrë, Mat, and Bulqizë. These buildings, primarily constructed before the 1990s, will undergo a thorough energy audit to assess their current energy situation. In these cities, no significant reconstruction or energy efficiency measures have been implemented in residential blocks. The objective of this pilot project is to complete all design phases, laying the groundwork for a second phase focused on the actual implementation of the renovation works. This will lead to a reduction in energy consumption and improvement in energy efficiency.

5. Certification Audit and Implementation Project for the Renovation of Existing Multi-Family Residential Buildings with Energy Efficiency in Various Cities “Dibër, Tropojë Krujë, Durrës, Rrogozhinë”

This project, developed by the Agency for Energy Efficiency, consists of a pilot program targeting multi-family residential buildings proposed by municipalities in “Dibër, Tropojë Krujë, Durrës, Rrogozhinë”. These buildings, primarily constructed before the 1990s, will undergo a thorough energy audit to assess their current energy situation. In these cities, no significant reconstruction or energy efficiency measures have been implemented in residential blocks. The objective of this pilot project is to complete all design phases, laying the groundwork for a second phase focused on the actual implementation of the renovation works. This will lead to a reduction in energy consumption and improvement in energy efficiency.

6. Certification Audit and Implementation Project for the Renovation of Existing Multi-Family Residential Buildings with Energy Efficiency in Various Cities “Elbasan, Belsh, Cërrik, Rrogozhinë, Librazhd, Prrenjas, Peqin, Kavajë, Fier, Lushnje dhe Divjake”

This project, developed by the Agency for Energy Efficiency, consists of a pilot program targeting multi-family residential buildings proposed by municipalities in “Elbasan, Belsh, Cërrik, Rrogozhinë, Librazhd, Prrenjas, Peqin, Kavajë, Fier, Lushnje dhe Divjake”. These buildings, primarily constructed before the 1990s, will undergo a thorough energy audit to assess their current energy situation. In these cities, no significant reconstruction or energy efficiency measures have been implemented in residential blocks. The objective of this pilot project is to complete all design phases, laying the groundwork for a second phase focused on the actual implementation of the renovation works. This will lead to a reduction in energy consumption and improvement in energy efficiency.

7. Pilot Project: "Audit, Certification, Design Implementation, and Installation of Photovoltaic Panels for High Energy Efficiency in Roskovec’s Kindergarten"

The Agency for Energy Efficiency is undertaking a pilot project to install a photovoltaic system with a capacity of 14.4kWp in the kindergarten of Roskovec. Based on information from the Municipality of Fier, the kindergarten building no. 01 Roskovec has been recently reconstructed to improve its facilities.

Objectives of the Pilot Project:

- Carbon Footprint Reduction: Utilize renewable energy to lower the carbon footprint.
- Quality of Life Improvement: Enhance the quality of life for citizens through practical demonstrations of energy efficiency interventions.

8. Pilot Project: "Audit, Implementation, and Energy Efficiency Works in Public Schools in Dibra"

The Agency for Energy Efficiency is developing a pilot project to audit and renovate three schools in the municipality of Klos, district of Dibra. Educational facilities are significant energy consumers among public buildings, making them a priority for energy efficiency interventions by the AEE.

Current Challenges: The three schools exhibit notable depreciation, with cracks and facade damage from moisture and lack of maintenance, single-glazed old windows, and high-energy consumption lighting. The lack of an energy-efficient wrapping (hood system) exacerbates energy loss, especially in the cold climate of the area, making it difficult to maintain comfortable indoor temperatures.

Objectives of the Pilot Project:

- Energy Consumption Reduction: Execute all phases of design and implementation to significantly reduce energy consumption in the schools.
- Comfort Improvement: Enhance comfort conditions within the schools to comply with environmental and health standards.
- Comprehensive Upgrades: In addition to detailed renovation work, replace existing lighting with LED, install boilers for central heating, and place a 10 kWp photovoltaic panel in one of the schools to increase energy efficiency.

9. Pilot Project: "Installation of High-Efficiency Urban Lighting in Dibra"

The Agency for Energy Efficiency is developing a pilot project to upgrade the lighting system on 10 streets in Peshkopia. The current system is outdated, with many lights malfunctioning, theft of electric lines, and damage from car accidents. The few functional lights are high-pressure sodium (HPS) lamps, which consume a lot of energy and contain environmentally harmful mercury. Some segments are

directly connected to the OSHEE network, causing continuous energy consumption and significant losses. Key Installations: 307 LED lights, 8 photovoltaic trees, Charger 50kW

Main Objectives:

- Energy Efficiency: Significantly reduce energy consumption by replacing old HPS lamps with high-efficiency LED lights.
- Infrastructure for Electric Vehicles: Provide charging stations and photovoltaic trees to promote the electrification of road transport, reducing CO2 emissions.
- Environmental Impact: Achieve objectives defined in the National Energy and Climate Plan by lowering emissions and enhancing energy efficiency.

10. Pilot Project: "Audit, Implementation, and Energy Efficiency Reconstruction at Mat Municipality Hospital"

The Agency for Energy Efficiency is developing a pilot project to audit and renovate the hospital in the municipality of Mat, district of Dibra. Health institutions are significant energy consumers among public buildings, making them a priority for energy efficiency interventions by the AEE. Current Challenges: The hospital exhibits notable depreciation, with cracks and facade damage from moisture and lack of maintenance, single-glazed old windows, and high-energy consumption lighting. The lack of an energy-efficient wrapping (hood system) exacerbates energy loss, especially in the cold climate of the area, making it difficult to maintain comfortable indoor temperatures.

Objectives of the Pilot Project:

- Energy Consumption Reduction:
- Comfort Improvement:
- Comprehensive Upgrades: In addition to detailed renovation work, replace existing lighting with LED, install boilers for central heating, and add photovoltaic panels for personal energy production. The project will also include interventions in the operating room.

11. Pilot Project: "Audit, Implementation, and Installation of Charging Stations for Electric Cars in Various Cities and Border Points"

The objective of this pilot project is to install electric vehicle chargers (EV Chargers) across several major cities and border points in the country. The EV Chargers will include 50 kW DC chargers in cities such as Sarandë, Vlorë, Korçë, Durrës, and Elbasan, and 150 kW DC chargers at the border points of Hani i Hotit, Kakavijë, Durrës, and Vlorë.

Key Components of the Project:

- Installation of EV Chargers: Implement 50 kW DC chargers in major cities and 150 kW DC chargers at key border points.
- Central Management System: Develop a centralized system for monitoring, remote control, and management of EV Chargers. This system will enable continuous oversight, usage setting and limiting for each vehicle, and recording of revenue generated by the charging service.
- Environmental Impact: Reduce CO2 emissions and environmental impacts by promoting the use of electric vehicles. Since energy production in the country comes from renewable sources, expanding this sector is crucial for reducing overall CO2 emissions.
- This initiative aims to support the use of electric vehicles by providing necessary infrastructure, thereby contributing to a cleaner environment and promoting sustainable transportation.

12. Construction of the complete database for energy consumption in all sectors + 3 years monitoring)

This project aims to establish a functional system for designing and maintaining the national balance and statistics system in Albania. This will enable the preparation of the energy balance fully in accordance with Eurostat standards, as well as forecasts of energy needs and municipal energy balances. These measures will not only comply with EUROSTAT norms but also aid in the national and municipal-level planning for energy and climate development.

13. Study, Audit, and Implementation Project for Clinics at the "Mother Teresa" University Hospital Centre

These health institutions are severely depreciated, and carrying out interventions with high-impact energy performance elements is a priority. Most of the clinics show visible cracks and facade damage due to moisture and years of neglect, including old single-glazed windows and high-energy consumption lighting. The lack of high-performance wrapping (hood system) exacerbates energy loss, making it difficult to maintain comfortable indoor temperatures, particularly in areas with a cold climate.

Objectives of the Pilot Project:

- Energy Consumption Reduction: Complete all phases of design and implementation to significantly reduce energy consumption.
- Lighting Upgrades: Improve existing lighting with efficient lamps.
- Renewable Energy: Consider installing photovoltaic panels to cover the energy needs for personal use.
- Overall, this project will involve organized reconstruction interventions to improve energy efficiency, with the aim of reducing energy consumption in the second phase of implementation.

14. Drafting of the Master Plan for Public Lighting in Several Cities Based on Street Typology

The purpose of this study is to draft a foundational document for the classification of roads in urban areas according to the international classification CIE 115: 2010. This serves as a preliminary audit to assess the current condition of each road segment in the selected cities. This study represents the first phase in determining the future design criteria for street and urban lighting in the cities of Elbasan, Korçë, Shkodër, Pogradec, and Kavajë.

Objectives of the Study:

- Improve Energy Efficiency: Enhance the efficiency of electricity usage in new and existing installations.
- Environmental Protection: Reduce pollution caused by excessive lighting in public areas.
- Enhance Quality of Life: Demonstrate practical interventions to improve energy efficiency and reduce greenhouse gas emissions, thereby increasing the quality of life for citizens.

Key Benefits:

- Comfort and Safety: Design Road lighting according to these standards to ensure comfort and safety for road users during dusk and night conditions across all road types.
- Traffic Safety: Provide clear visual data to detect road features and obstacles, aiding both vehicular and pedestrian traffic in crossing safely.

15. Development and Monitoring of Detailed Plans for National Energy Efficiency, Renewable Energy Sources (RES), and CO2 Reduction According to PKEK

This project aims to design and monitor the National Energy Efficiency Action Plan (NEEAP) based on the criteria defined by the Energy Community. It involves the realization of comprehensive quantitative and qualitative assessments at the national level in Albania. The project will facilitate the preparation of detailed plans by outlining the roles of all relevant actors, including the Government led by the Prime

Minister and the Ministry of Infrastructure and Energy (MIE), the Agency for Energy Efficiency (AEE), various line Ministries, all Municipalities, major consumers, and other stakeholders.

Objectives of the Project:

- Comprehensive Planning: Develop fully defined plans for achieving energy efficiency targets across all economic and social sectors.
- Monitoring and Verification: Implement robust monitoring, verification, and reporting methods over a three-year period.
- Coordination and Consulting: Ensure coordination and consulting among all involved parties to meet energy efficiency goals.
- This initiative will drive significant progress towards Albania's energy efficiency targets, enhancing both national and municipal energy management.

The Law No. 124/2015 on Energy Efficiency is amended to introduce requirements of the Energy Efficiency Directive (incl. article 5 and article 7), through the Law no. 28/2021"On some amendments and additions of Law no. 124/2015 "On energy efficiency", as amended.

The private residential and building sector in Albania is benefiting from a fund of €6 million loan that the EBRD is providing to Albania's Union Bank. Also, other financing mechanisms in Albania like "Besa" Fund are benefiting from EBRD loan. This financing is provided under the EBRD €85 million Western Balkans Green Economy Financing Facility (GEFF).

It is important to note that specific measures in the NEEAP may be subject to updates up to 2030, to full regulatory impact assessments, to estimate net costs for their implementation, both for the public and private sectors. This means the measures provided in this document will have concrete development plans for further interventions, which will provide more concrete data on their implementation.

The National Strategy for Energy (NSE) 2018–2030 has defined the key institutions and power sector companies in Albania, responsible for its implementation:

- Government and regulatory actors, which include government bodies - ministries, the regulator, agencies to whom ministries delegate specific sector responsibilities;
- State owned companies, such as KESH, OST, and OSHEE, which are currently major players in the energy sector in Albania and specifically in relation to the EE investments;
- Municipalities for their specific duties which concern and relate to the EE measures implementations.
- The MIE, together with ERE, NANR (AKBN), and the AEE are responsible for monitoring and ensuring an efficient implementation of the Energy Strategy for all relevant sectors. In the case of EE implementation, AEE has the duty to submit the annual report to the MIE defining the realization of the EE measures in quantities and qualities, level of the realized investments, barriers and reasons behind them, the way of overcoming them, so that energy savings, emission reduction and the remaining targets are achieved.
- AEE is the responsible institution for the Monitoring and Verification of energy savings.

1.2.2.6 Dimension Energy Security

The targets of the security of energy supply have been outlined in country strategic plans and government decisions for their implementation. The government policy to increase security of energy supply is based on:

1. diversification of energy sources and fuels,
2. sufficient and decentralised energy production systems,
3. reliable transmission and distribution systems and networks,
4. well-functioning of energy markets,
5. clear long-term energy policy that encourages investments,
6. energy efficiency.

Albania has no nuclear power plant on its territory, nor is it planning to build one. There is a National Nuclear Agency whose mission is to put in place a system to calculate energy demand for the next 20-30 years.

Albania has three coastal oil and gas terminals: Porto Romano in Durrës, Shëngjini port in Lezha and Petrolifera in Vlora. Each has capacity to store liquid petroleum gas, crude oil, diesel, gas, and additional liquids and dry products.

Overview of key laws:

- Strategic Plan for Reform in Energy Sector in Albania (2018-2020), approved by DCM No. 742 of 12.12.2018, is a roadmap for reforming the entire electricity sector in Albania. It is the basis for the Policy-Based Loan (PBL) for the implementation of the specific Policy Reforms Elements listed in this Strategic Plan.
- National Sector Strategy for Energy 2018-2030, approved by DCM No. 480 of 31.7.2018
- Master Plan of Natural Gas for Albania, approved by DCM No. 87 of 14.02.2018
- Albania's Economic Reform Programme (2020-2022) approved by DCM No. 92 of 05.02.2020, related to energy sector reforms includes the following: (i) liberalizing the energy market, with complete unbundling and a functioning power exchange; (ii) Implementing the law on RES; (iii) Adopting the secondary legislation for the laws on EE and the energy performance of buildings.

Adoption of Rules on Security of supply in accordance with the Power Sector Law

The legal act for the adoption of the rules on security of supply has been drafted. The legal act is not yet approved.

Progress in transposing and implementing Risk-preparedness Regulation

The Decision of the Ministerial Council of the Energy Community 2021/13/ MC-EnC of 30 November 2021, foresees that each contracting party shall bring into force the laws, regulations and administrative provisions necessary to comply with the Directive (EU) 2019/944 and Regulation (EU) 2019/941 on Risk-preparedness Regulation, by 31 December 2023. This regulation will be in accordance with the provisions of the draft Law "On some amendments **Power Sector Law" which will transpose the** Directive (EU) 2019/944.

The implementation of performance for each area of work indicators is summarised in the figure below and was calculated and compiled by the Energy Community Secretariat. Based on this, the overall implementation performance of Albania was 56% in 2023.

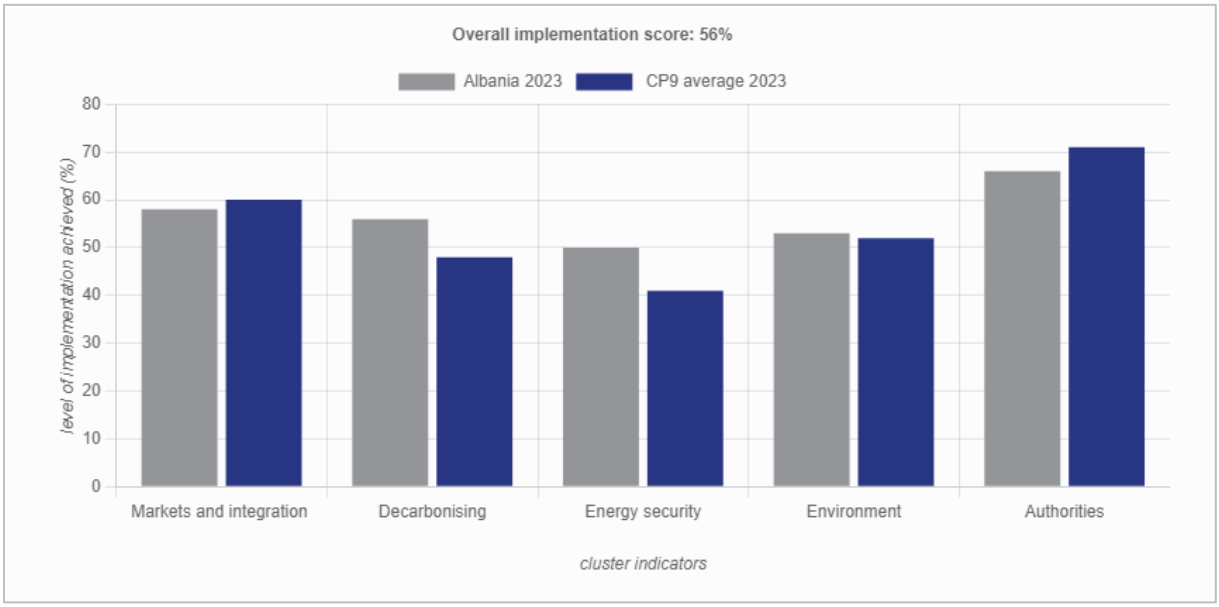

Figure 11: Overall implementation score 2023 of Albania (Source: Energy-community.org Status 2023)

Oil - Stockholding obligation

Albania's current emergency oil stockholding system is assigned to the oil industry. According to the Law No. 8450 of 24.02.1999 "On refining, transportation and marketing of oil and gas and their by-products", as amended, and DCM No. 808 of 5.11.2004 "On the maintenance and management of emergency stocks for oil, gas and their by-products", as amended, the oil refineries and wholesale oil and their by-products companies are obliged to maintain minimum stocks, equal to 90 days of average sales, which is calculated based on the actual data results of previous year's operations.

The figure below shows the implementation by oil indicators as calculated and compiled by the Energy Community Secretariat.

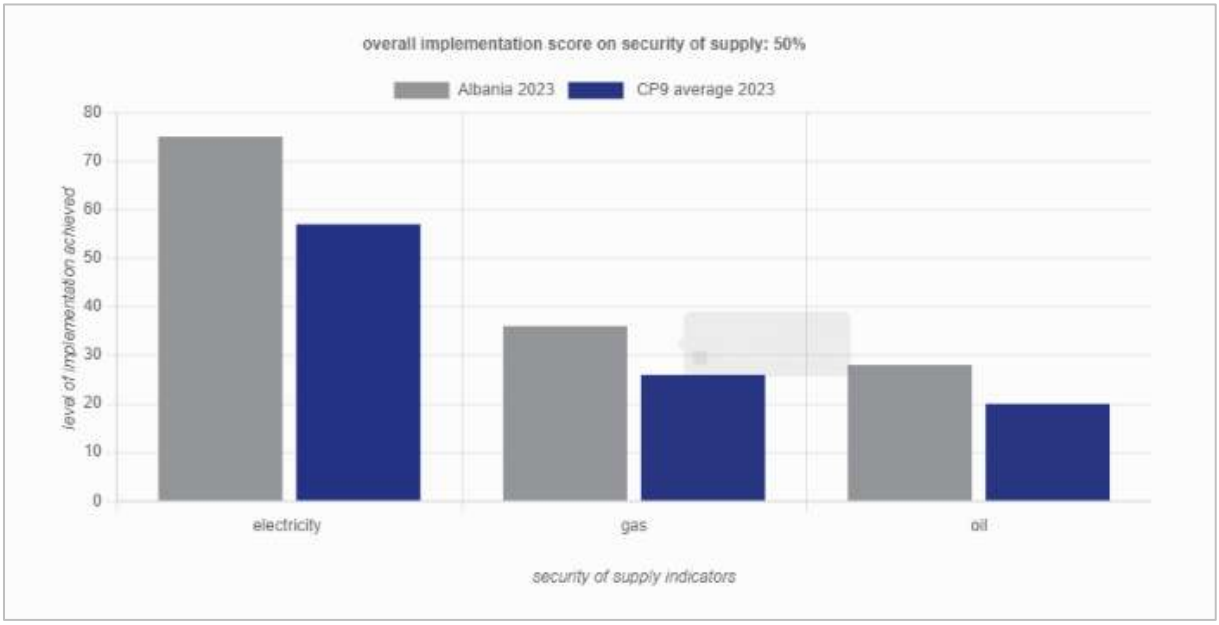

Figure 12: Implementation score on security of supply (Source: Energy-community.org Status 2023)

However, the current system is not compliant with Directive 2009/119/EC and for this purpose, a working group was set up by the Order of the Prime Minister in December 2013. The draft Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products" foresees the set-up of the State Agency for Security of Oil Reserves (ASOR), which will be a public body in charge to establish, maintain and manage the security stocks. ASOR is foreseen to be the only body in Albania, which will authorise the purchase, management and sale of the security stocks of crude oil and/or petroleum products, as stipulated in the abovementioned draft Law.

The legal procedure for the approval of the draft Law by the Government started in July 2018. Following the reflection of the preliminary comments of line ministries, the revised draft Law was redistributed for coordination to these institutions and the Competition Authority, in order to prepare a final version. Currently, the representatives of different institutions are discussing the Law in order to reach a final draft, which should then be approved by the Government and afterwards by the Albanian Parliament.

Specific stocks

In Albania, no specific stocks are currently in place. However, the new draft Law on Emergency Oil Stockholding foresees that the Government may decide on the specific stocks constitution as part of the compulsory stocks and the list of hydrocarbon energy products to be used, the level of specific stocks and the duration of the obligation to maintain specific stocks. According to this draft Law, the establishment and maintenance of the specific stocks has affected at least one calendar year.

Availability and accessibility

In Albania, the new draft Law foresees that "compulsory stocks maintenance is a priority and compulsory stocks must be available and physically accessible at all times". A part of the compulsory stocks may be stored in the Member States of the European Union and / or signatories to the Energy Community Treaty, subject to a bilateral agreement between the Government and the state in which the compulsory stocks shall be stored. Compulsory oil stocks that are owned by the Government must be insured at all times. Economic operators are responsible for any losses of stocks and damages to third parties and the environment.

The Government shall ensure that there are no obstacles to the transfer of the compulsory stocks from the territory of Albania to another state with which such a bilateral agreement has been concluded.

Reporting

In Albania, the draft Law foresees that the Minimum Oil Stocks Agency will keep and continually update detailed records of all stocks that it holds and also all others that are maintained in the territory of Albania and in third countries under the bilateral agreements. Albania submits regularly the Joint Organizations Data Initiative - Oil (JODI) Questionnaire.

Emergency procedures

The new draft Law establishes the necessary procedures for intervention in case of a serious shortage of petroleum products in the market. In the event of difficulties in supply, the release of the stocks is decided by the Government, upon the proposal of the minister in charge of energy and approval of the crisis management committee of the Government. In the event of an effective international decision to release the compulsory stocks, the Government is entitled to decide on the release of the stocks as fulfilment of its international obligations. According to the draft Law, the rules and procedures for drafting the National Response Plan, including the determination of the market price and use of the security stocks, shall be defined by the Government. In such a case, the Ministry of Infrastructure and Energy notifies the governmental decision immediately to the European Commission and the Energy Community Secretariat.

Number of days of oil stocks in Albania

According to the Law No. 8450 of 24.02.1999 "On refining, transportation and trading of oil and gas and their by-products", amended, and DCM No. 808 of 5.11.2004 "On the maintenance and management of emergency stocks for oil, gas and their by-products", amended, the oil refineries and wholesale oil, natural gas and their by-products companies, are obliged to maintain minimum stocks, equal to 90 days average sale, which is calculated based on the factual and data results of previous year operations. The quantities of the oil stock reserve for crude oil and by-product for 2023 are as shown in Table 8.

Fuel type	Quantities (in tonnes)
Crude Oil	6,824
Gasoline (Motor Gasoline)	22,430
Gas/diesel oil	178,331
Fuel oil	1,217
Liquefied petroleum gas (LPG)	54,098
Kerosene type jet fuel	3,191
Aviation gasoline	1
TOTAL	**266,092**

Table 8: Quantities of oil stock reserve for crude oil and by-products for 2023 (Source: Ministry of Infrastructure and Energy)

The Ministry of Infrastructure and Energy in cooperation with the Energy Community Secretariat has prepared the draft Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products", aiming to transpose the Council Directive 2009/119 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products, and two regulations related to the collection of data for monthly oil questionnaire (MOQ), the method to calculate the minimum stocks of crude oil and/or petroleum products and to provide the corresponding reports.

Gas - Emergency plan for natural gas

Policy documents:

- The Law No 81/2021 of 24.06.2021 "On some addenda and amendments to Law No 102/2015 "On natural gas sector" concerning measures to safeguard the security of gas supply and is in line with the Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply and has repealed the Regulation (EU) 994/2010. The amendment consists in the introduction of new elements related to security of supply.
- Emergency plan for natural gas, in accordance with the minimum supply security standards, and the rules to guarantee secure and effective good supply[3]
- Natural gas sector development plan in Albania and identification of priority projects[4]

Respective DCMs provide more detailed information: DCM No. 417 of 10.5.2017 on the approval of the emergency plan for natural gas, in accordance with minimum standards for safety supply and rules for safe and effective supply with natural gas.

3 Approved by DCM No. 417 of 10.5.2017, based on the law No. 102/2015, "On the natural gas sector".

4 Approved by DCM No. 87 of 14.2.2018 based on the Law no.102/2015 "On the natural gas sector".

The National Emergency Plan for natural gas defines the standards related to the minimum requirements suitable for the security of natural gas supply in the Republic of Albania, the mandatory criteria for ensuring reliable and efficient supply of natural gas as well as the duties and responsibilities of institutions for managing emergency situations in gas supply to customers.

The Emergency Plan specifically includes:

- Determine standards for minimal requirements for safety supply;
- Instruments and measures to guarantee an adequate and clearly defined supply of gas for protected customers, in accordance with supply safety standards;
- Instruments for prediction and assessment of potential risks, which clearly set out actions to prevent these risks and measures to mitigate possible damages related to them;
- A program to reduce or stop the supply of natural gas to specific categories of customers in the event of a crisis situation;
- The role and responsibilities of gas provider companies and non-household consumers, taking into account the various impact measures in case of a crisis in the natural gas sector;
- Criteria regarding storage plants, in order to meet supply safety standards, as well as possible contributions for storage plants located either in the Republic of Albania or in another contracting party in the Energy Community, or member country of the Union European;
- Important measures and actions to be taken to eliminate or mitigate the impact of a natural gas supply outage, in accordance with different levels of crisis.

Assessing the impacts of policies and measures, Albania is at a moderate stage of preparation on security of supply. Qualitative indicators are displayed below.

1. Gas supply framework

The existing gas network is outdated and mostly non-operational. Its domestic natural gas production is marginal, of which the majority is consumed for own use in oil production and by the refining industry.

On hydrocarbons, Albania has not aligned its legislation with the Hydrocarbons Licensing Directive, but there has been some progress with its secondary legislation. The Directive on safety of offshore oil and gas installations has not been transposed. In February 2018, the Albanian government adopted the 'gas master plan', which assesses investment needs until 2040. In May 2018, Albgaz SA, the combined gas operator in Albania, was admitted as an observer at the European Network of Transmission System Operators for Gas. Albgaz through his cooperation with SNAM s.r.l, has increased its capacity building to be prepared for operation of future gas infrastructure.

2. Electricity supply framework

In the coming years, Albania should in particular pursue the transition process towards diversification of energy sources and promote alternative sources of renewable energy while complying with environmental standards.

3. Emergency and crisis management system and demand restraint programs

Albania's oil-stock legislation is not in line with the Acquis. There was no progress in creating a central stockholding body for oil. The country is working in implementation of a model for an emergency oil-stock reserve and for a law on the minimum stocks of crude oil required for security of supply.

Albania must complete the alignment with the Acquis on minimum oil stocks of crude oil and/or petroleum products. It must also amend its emergency oil-stock model.

4. Energy

The national energy strategy 2018-2030 was adopted in 2018. The gas master plan was adopted by the government in February 2018. Further efforts need to be made to adopt the SEA and project

identification plan related to the gas master plan. Adoption of this SEA and plan will help the development of TEN-E projects. Progress was made on improving the infrastructure for power transmission. The Trans Adriatic Pipeline (TAP) in December 2020 started commercial transmission and in September 2021 transmission reached 7 BCM. In July 2021, TAP signed a Cooperation and Delivery Agreement at the Fieri South facility with the Ministry of Infrastructure and Energy and Albgaz S.A. TAP will design and build the South Exit Point. Major gas interconnector projects are provided for under the gas master plan.

MIE has prepared the draft Order of the Minister of Infrastructure and Energy which transposes and implements the Regulation (EU) 347/2013 on Guidelines for Trans-European Energy Infrastructure by 1 January 2017, which is not yet approved. In November 2018 the Ministerial Council of the Energy Community adopted a decision establishing a breach of Albania's obligations under the Energy Community Treaty. The part affecting the gas sector has been completed with the electricity sector needed to be introduced to finalise the draft.

1.2.2.7 Dimension Internal Energy Market

On the internal energy market, Albania has adopted legislation on gas and electricity in line with the EU's Third Energy Package.

Transmission and distribution system operators are **fully unbundled** and act independently from any market interests in electricity production and/or supply. Competitive **balancing and ancillary services market** is already in operation as organised by the transmission system operator OST sh.a pursuant to ERE's adopted market rules. Albanian **power exchange ALPEX**, established together with the transmission system operator of Kosovo went live on 12 April 2023. On 1 February 2024, the Albanian Power Exchange (ALPEX) held its first day-ahead auction for electricity delivery in Kosovo, which marked the first Market Coupling within the contracting parties of the Energy Community. Allocation of cross-border capacities for the market participants in our region, comes from the Coordinated Auction Office SEE CAO in Podgorica.

All electricity consumers in Albania are eligible to choose and switch their supplier. From January 1st, 2024, all the customers connected at 20kV voltage level are being supplied in the liberalised market, mostly by the Free Market Supplier FTL sh.a, part of OSHEE Group sh.a. Deregulation has been conducted also for clients supplied in 35 and 110 KV.

1.2.2.7.1 Power Sector

The new Electricity Directive is a transposition obligation for the contractual parties of the Energy Community within December 2023.

Albania's national legislation is **partially aligned** with Directive (EU) 2019/944. Partial alignment is ensured only within the regulatory scope of the Directive, which coincides with electricity market rules previously established by the EU Third Energy Package, inter alia, through Directive 2009/72/EC.

The new electricity market design introduced by Directive (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity, amending Directive 2012/27/EU (directive) and Regulation (EU) 2019/943 of 5 June 2019 on the internal market for electricity (regulation) is yet to be transposed and implemented.

National transposition of the Directive and Regulation in Albania will take place through further amendments to Law no. 43/2015, dated 30.04.2015, "On the Power Sector", amended.

- Approval of the law "On some amendments of Power Sector law 43/2015"aligned with the Electricity Integration package (approval of further amendments planned in June 2025).

The currently valid Law No 43/2015 of 30.04.2015 "On the Power Sector", as amended, is aligned with the Third Energy Package.

Concerning electricity, pursuant to Art. 90(1) of Law No 43/2015 "On power sector", as amended, the Decision of Council of Ministers No 584 of 8.10.2021 "On the declaration of the state of emergency in the supply of electricity", was approved by the Council of Ministers declaring the state of emergency in the supply of electricity until 15 April 2022, which was extended till 31 December 2023.

Meanwhile, from June 2022, the electricity market in Albania operates according to Decision of Council of Minister No 456 of 29.06.2022 "On the approval of conditions for the imposition of the public service obligation", which will be applied to licensees in the electricity sector, who exercise the activity of production, transmission, distribution and supply of electrical energy.

Based on the provisions of this Decision of Council of Ministers, the public production company, KESH S.A., has the obligation to supply the Universal Service Supplier with all the necessary quantity, to fulfil the need of universal customers. As of July 2022, The Free Trade Supplier (FTL) has the obligation to sell electricity to cover distribution losses of the distribution operator. Transmission losses and Electricity purchase and sale for the regulated activities of supply of last resort is executed on the day-ahead market ALPEX but under contracts for difference.

The following tables show current energy policies and the respective laws/DCM (Table 9) and secondary legislation (Table 10).

Current energy policies	Law/DCM	Description
Policy and Legislation in place		
National Strategy of Energy	DCM No. 408 of 31.7.2018	Setup objectives and targets for all energy sector, investments, and responsible institutions.
National Plan for Energy and Climate (NECP) 2020 – 2030	No 872 of 29.12.2021	NECP has define the roadmap for energy efficiency, the share of RES and GHG emissions for the period 2021 – 2030.
Law "On the Electricity Sector" (as amended)	Law no. 43/2015, dated 30.04.2015	The aim is the full approximation with the provisions of the Directive 2012/27/EU of the European Parliament.
Law "On the natural gas sector" (as amended)	Law no. 102/2015, dated on 2015 amended by Law No. 64/2018, the Law 89/2018 and the Law 81/2021	The Law No. 102/2015 of 23.09.2015 "*On the natural gas sector*", as amended, is fully aligned with the EU *acquis.*
Law "On the Production, Transport and Trade of Biofuels and Other Renewable Fuels for Transport" (as amended)	Law no. 9876, dated 14.2.2008	

Table 9: Current energy policies related with the Dimension Internal Energy Market

Secondary legislation in place for Energy Security/Energy Market	
DCM, "On the approval of the Electricity Market Model" (as amended)	CoM Decision no. 519, dated 13.07.2016
DCM "On the approval of the Terms and Procedures for Designation of the Electricity Supplier of Last Resort"	CoM Decision no. 449, dated 15.06.2016
DCM "On the approval of Conditions for Establishing Public Service Obligation Imposed on Licensees in the Electricity Sector Carrying Out the	CoM Decision no. 456, dated 29.06.2022

Activity of Production, Transmission, Distribution, and Supply of Electricity"	
Order, "On the approval of the Roadmap for Electricity Market Opening and Price Deregulation" (as amended)	Ministerial Order no. 28, dated 18.01.2021
"On the approval of the Electricity Market Rules"	ERE Board Decision no. 347, dated 27.12.2022
ERE Board Decision "On the approval of the Electricity Balancing Market Rules" (as amended)	ERE Board Decision no. 106, dated 02.07.2020
ERE Board Decision "On the approval of the Regulation on Wholesale Energy Market Integrity and Transparency"	ERE Board Decision no. 126, dated 17.05.2021
ERE Board Decision "On the approval of the Regulation for the Requirements and Procedures for Designation of the Nominated Electricity Market Operator (NEMO) and the Roles and Responsibilities of NEMO and of the Transmission System Operator in the Energy Market Coupling"	ERE Board Decision no. 40, dated 06.03.2020
ERE Board Decision "On the approval of the Rules on Publication of the General Data of the Electricity Market"	ERE Board Decision no. 118, dated 27.07.2017
ERE Board Decision, "On the approval of the Rules on Certification of the Electricity Transmission System Operator"	ERE Board Decision no. 154, dated 11.12.2015
ERE Board Decision, "On approval of the Regulation on Electricity Supplier Switching" (as amended)	ERE Board Decision no. 113, dated 08.07.2016
ERE Board Decision "On the approval of the Regulation for Standard Load Profiles for Certain Categories of Customers in Case the Metering Data for Calculation of Electricity Imbalances is Unavailable"	ERE Board Decision no. 112, dated 09.07.2020
ERE Board Decision "On the approval of the Transmission Code"	ERE Board Decision no. 63, dated 11.04.2022,
ERE Board Decision "On the approval of the Distribution Code" (as amended)	ERE Board Decision no. 100, dated 26.08.2008
ERE Board Decision "On the approval of the Metering Code"	ERE Board Decision no. 101, dated 26.08.2008
ERE Board Decision "On the approval of the Network Code on Requirements for Grid Connection of High Voltage Direct Current Systems and Direct Current-Connected Power Park Modules"	ERE Board Decision no. 127, dated 04.06.2018
ERE Board Decision "On the approval of the Network Code on Requirements for Grid Connection of Demand"	ERE Board Decision no. 128, dated 04.06.2018
ERE Board Decision "On the approval of the Network Code on Requirements for Grid Connection of Generators"	ERE Board Decision no. 129, dated 04.06.2018
Secondary legislation in place for Energy Security/Gas	
DCM No. 417 of 10.05.2017 "On the approval of the natural gas emergency plan, in accordance with the minimum-security standards of supply, and the rules to ensure safe and efficient supply with natural gas"	DCM No. 417 of 10.05.2017
DCM "On the approval of the natural gas market model"	DCM No. 590 of 9.10.2018
DCM "On the approval of the conditions and procedures on the determination of the last natural gas supplier"	DCM No. 69 of 07.02.2018
ERE Board Decision "On the approval of the provisions for the certification or the natural gas transmission operator", amended	Decision of Board of Commissioners (ERE Board Decision) No. 100 of 5.08.2015
ERE Board Decision "On the approval of the Regulation on the organisation, functioning and the procedures of ERE"	ERE Board Decision No. 96 of 17.06.2016

ERE Board Decision “On the approval of the Regulation on handling of complaints submitted by clients and resolution of disputes between the license-holders in the electricity and natural gas sector”	ERE Board Decision No. 114 of 8.07.2016
ERE Board Decision “On the approval of the Regulation on procedures for transfer of assets from the licensees”	ERE Board Decision No. 119 of 21.07.2016
ERE Board Decision “On the approval of the Guideline on the criteria to decide the access to premises for the depositing of the natural gas”	ERE Board Decision No. 34 of 2.03.2017
ERE Board Decision “On the approval of the compliance programme of the natural gas transmission system”	ERE Board Decision No. 77 of 26.05.2017
ERE Board Decision “On the approval of the contract to offer compliance officer services in the natural gas sector”	ERE Board Decision No. 78 of 26.05.2017
ERE Board Decision “On the approval of the Regulation on conditions and procedures to levy fines and the concrete punishment for each breach in the natural gas sector”	ERE Board Decision No. 95 of 4.07.2017
ERE Board Decision “On the approval of the Regulation on the procedures for licensing, modification, transfer and removal of licenses in the natural gas sector”	ERE Board Decision No. 97 of 4.07.2017
ERE Board Decision "On the approval of the methodology for determining the tariff for the sale of natural gas by the supplier of last resort"	ERE Board Decision No. 38 of 27.02.2020
ERE Board Decision "On some temporary changes in the licensing procedures in the exercise of activities in the electricity and natural gas sector within the measures after the appearance of the covid virus19 and the declaration of the state of natural disaster in our country"	ERE Board Decision No. 51 of 26.03.2020
ERE Board Decision "On the approval of the" Natural Gas Transmission Network Code in Albania”	ERE Board Decision No. 68 of 22.04.2020
ERE Board Decision "On licensees in the electricity and natural gas sector who have not paid regulatory fees"	ERE Board Decision No. 103 of 24.06.2020
ERE Board Decision “On some changes in the decision of the wind board no. 51, dated 26.03.2020 "on some temporary changes in the licensing procedures in the exercise of activities in the electricity and natural gas sector within the measures after the appearance of the covid-19 virus and the declaration of the state of natural disaster in our country"	ERE Board Decision No. 133 of 10.08.2020
ERE Board Decision "On the initiation of the procedure for the approval of the draft" General conditions of the type contract of natural gas supply for end customers who benefit from the public supply service"	ERE Board Decision No. 145 of 28.08.2020
ERE Board Decision "On the initiation of the procedure for review and approval of the regulation on the procedures for granting the right of exemption for the new natural gas infrastructure"	ERE Board Decision No. 148 of 10.09.2020
ERE Board Decision "On the initiation of the procedure for the approval of the" Rules for monitoring the natural gas market"	ERE Board Decision No. 164 of 22.10.2020
ERE Board Decision "On the initiation of the procedure for the approval of the" Natural Gas Metering Code"	ERE Board Decision No. 165 of 22.10.2020
ERE Board Decision "On the approval of the" General conditions of the standard contract of natural gas supply for end customers who benefit from the public supply service".	ERE Board Decision No. 166 of 22.10.2020

ERE Board Decision "On the initiation of the procedure for approval of the model license for the activity of operation in natural gas storage facilities"	ERE Board Decision No.193 of 20.11. 2020
ERE Board Decision "On the initiation of the procedure for the approval of the" regulation for determining the criteria for exercising the activity of natural gas storage"	ERE Board Decision No. 204 of 04.12.2020
ERE Board Decision "On the initiation of the procedure for the approval of treatment standards of complaints of electricity and natural gas customers from the licensees in the supply activity"	ERE Board Decision No. 218, of 15.12.2020
ERE Board Decision "On the approval of the" Rules for monitoring the natural gas market in Albania"	ERE Board Decision No. 265 of 28.12.2020
ERE Board Decision "On the initiation of the procedure to approve" Conditions for the licensee charged with the obligation of public service for the natural gas sector "in Albania".	ERE Board Decision No. 267 of 28.12.2020
ERE Board Decision "On the initiation of the procedure for the approval of the "rules for the use of the liquefied natural gas (LNG) terminal" in Albania"	ERE Board Decision No. 268 of 28.12.2020
ERE Board Decision "On the initiation of the procedure for the approval of the "Methodology for calculating the tariff for the regasification service from LNG plants" in Albania".	ERE Board Decision No. 269 of 28.12.2020
ERE Board Decision "On the request of the Albgaz company for the postponement of the deadlines defined in the regulation of standard criteria and minimum requirements for the quality of service and supply of natural gas networks, approved by the decision of the ERE board no. 100/2019"	ERE Board Decision No. 6 of 15.01.2021
ERE Board Decision "On the approval of the updated complaint form of electricity and natural gas customers"	ERE Board Decision No. 7 of 15.01.2021
ERE Board Decision "On the approval of the model license for the activity of operation in natural gas storage facilities"	ERE Board Decision No. 59 of 25.02.2021
ERE Board Decision "On the approval of standards for handling complaints of customers of electricity and natural gas by licensees in the supply activity"	No. 60 of 25.02.2021
ERE Board Decision "On the approval of the" Operational Rules for the supplier in charge of the public service obligation for the natural gas sector"	ERE Board Decision No.72 of 12.03.2021
ERE Board Decision "On the approval of the regulation on the procedures for granting the right of exemption for the new natural gas infrastructure"	ERE Board Decision No.73 of 12.03.2021
Secondary legislation in place for Energy Security/Electricity Network Codes	
CoM Decision "On the Treatment of Imbalances Caused by Electricity Producers"	CoM Decision no. 398, dated 09.06.2022
ERE Board Decision "On the approval of the Regulation of the Procedures for New Connections and the Modification of the Existing Ones in the Transmission System" (as amended)	ERE Board Decision no. 87, dated 20.04.2018
ERE Board Decision "On the approval of Common Settlement Rules for Exchanges of Energy in Accordance with Articles 50(3) and 51(1) of Commission Regulation (EU) 2017/2195"	ERE Board Decision no. 108, dated 22.04.2021
Secondary legislation in place for Energy Security/Oil	
Ministerial Order "On the control of the technical standards of oil and its by-products, procedures and related fees" (as amended)	Ministerial Order no. 6, dated 09.01.2015,

Joint Ministerial Instruction "On the inter-institutional coordination of the standard procedures of quantitative, qualitative and fiscal control of crude oil and its by-products in the Republic of Albania"	Joint Ministerial Instruction no. 3492, dated 30.04.2015
Joint Ministerial Instruction "On the collection, storage and reporting of data, for LPG quality, gas oil, heavy fuel oil, marine fuel and local suppliers of these fuels liquid fuels"	Joint Ministerial Instruction no. 6529/2, dated 06.10.2020

Table 10: Secondary legislation for current energy policies related with the Dimension Internal Energy Market

For the implementation of the Law No 43/2015 of 30.04.2015 "On the Power Sector", as amended, the Albanian Energy Regulatory Authority (ERE) approved the following legal acts:

- Decision of Board of Commissioners of ERE No 347 of 27.12.2022 "On the approval of the electricity market rules";
- Decision of Board of Commissioners of ERE No 343 of 21.12.2022 "On the approval of the contract for providing the services of the compliance officer of the Distribution System Operator (DSO) S.A.";
- Decision of Board of Commissioners of ERE No 114 of 27.03.2023 "On the approval of the compliance officer of the Distribution System Operator (DSO) S.A.".

All electricity consumers in Albania are eligible to choose and switch their supplier. From January 1st, 2024, all the customers connected at 20kV voltage level are being supplied in the liberalised market, mostly by the Free Market Supplier FTL sh.a, part of OSHEE Group sh.a. Deregulation has been conducted also for clients supplied in 35 and 110 KV.

Albania's electricity sector is characterized by a market structure in which most of the energy procurement is dominated by bilateral transactions for large customers, while most of the other customers and the retail market remains operated under a regulatory regime. Positively, the unbundling of operations and interests is underway, and the one positive aspect in the transmission ownership was adopted by law in 2016.

The Market Rules for operation of the electricity market following the Market Model and including organized day-ahead and intraday functions were adopted by ERE in December 2017. Also, a law for a market-based procurement of balancing was approved.

Figure 13 below shows Albania's electricity market scheme.

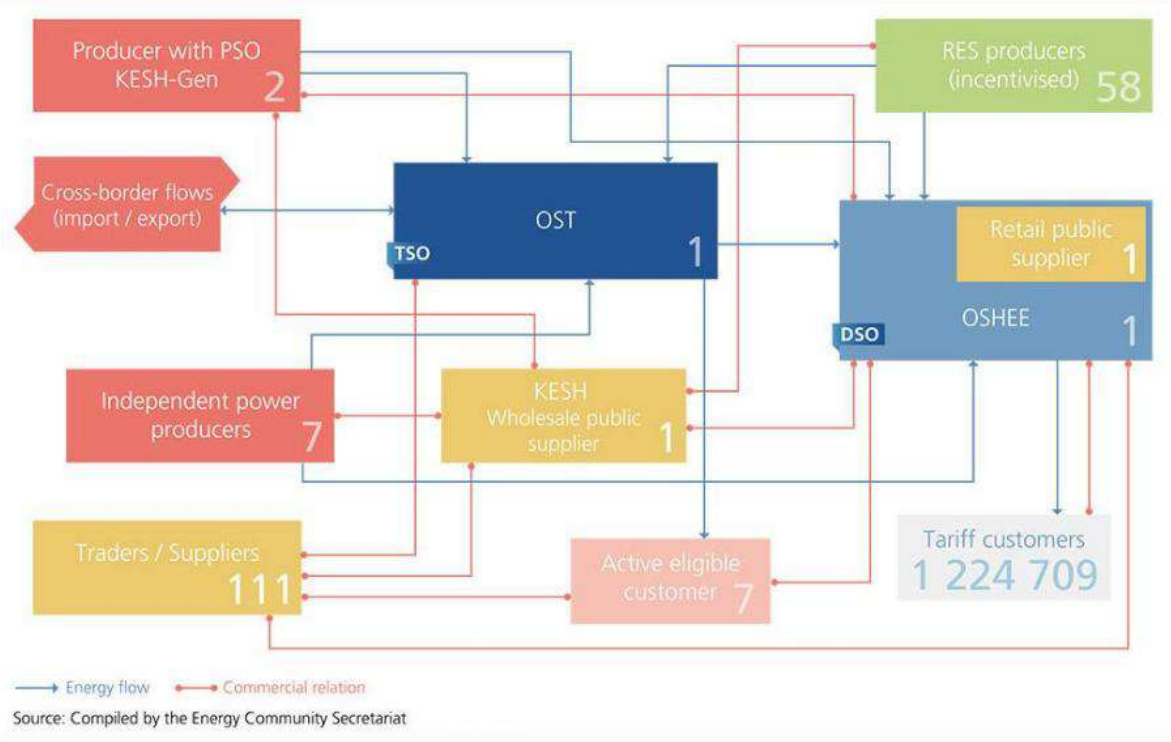

Figure 13: Albania's electricity market scheme (Source: Energy Community Secretariat)

Power exchange

Based on the Decisions of Council of Minister, respectively No 322 of 15.05.2019 "On the establishment and defining the legal form of the ownership structure of the share capital of the market operator" and No 609 of 11.09.2019 "On defining the criteria and procedures for the selection of the participants in the share capital of the market operator", and after the competitive procedure for the selection of the participant in the market operation's capital, the Albanian Power Exchange (ALPEX) was established in October 2020 as a Shareholder Company, in joint ownership of the Transmission System Operators of Albania (OST) and Kosovo (KOSTT).

The Law No 82/2022 of 24.11.2022 "On some addenda and amendments to Law No 92/2014 "On value added tax in the Republic of Albania", as amended, was adopted by the Albanian Parliament. The Law No 82/2022 added to the Law, the Title 6: Special regime for the Albanian Power Exchange, and excluded from the VAT payment the import and supply inside the country of the electricity sold via ALPEX.

The Decision of Council of Ministers No 872 of 27.12.2022 "On some addenda and amendments to the Decision of Council of Ministers No 516 of 13.07.2016 "On the approval of the electricity market model" introduced several changes needed for the ALPEX to be operational.

In December 2022, with the Decision of the Board of Commissioners of ERE No 347 of 27.12.2022, there were adopted the new electricity market rules, based on the functioning of the Albanian Power Exchange. Also, the Electricity Market Model was amended with a Decision of Council of Ministers, to provide the necessary amendments for the functioning of the Albanian Power Exchange.

After the training period which started in November 2022, the ALPEX went live on 12 April 2023. The operation of ALPEX fulfilled one of the requirements of the Third Energy Package and integrated the Albania and Kosova electricity markets.

Electricity market

In July 2017, ERE adopted rules on publication of basic electricity market data, transposing the Regulation (EU) 543/2013 on submission and publication of data in electricity markets. OST is publishing on its website part of the required data on load, generation, transmission infrastructure and imbalances, while SEE CAO forwards the data on cross-border capacity to ENTSO-E for publication.

Figure 14 shows the degree of implementation by electricity market indicators which is 73% in 2023.

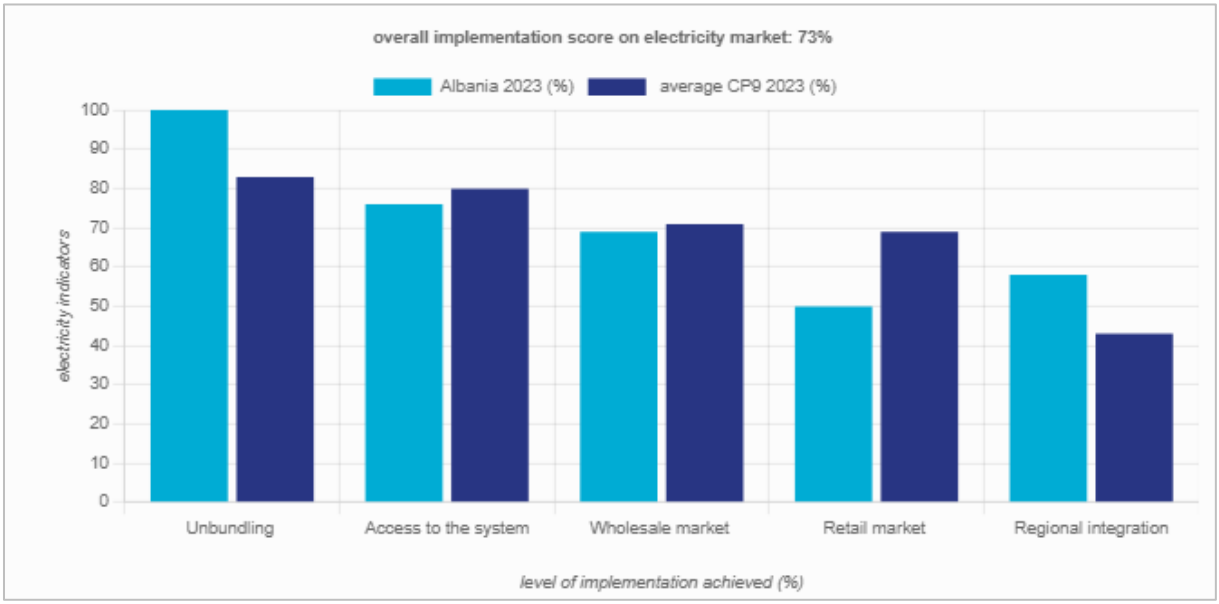

Figure 14: Implementation by electricity market indicators (Source: Energy-community.org Status 2023)

Unbundling of KESH S.A

Albania has fully implemented the separation of KESH S.A. ownership from the ownership of OST S.A., an obligation under the Third Energy Package.

Unbundling of OST S.A

The transmission system operator of Albania (OST) was unbundled according to the Third Package ownership unbundling model and conditionally certified in 2017. ERE with the Decision of Board of Commissioners of ERE No 43 of 15.03.2017 "On the final approval of the certification of the Operator of the Power Transmission System OST S.A", in accordance with the Article 54 (6) of Law No 43/2015 "On Power Sector", certified the OST S.A. as the Transmission System Operator (TSO). The Board of Commissioners of ERE, with the Decision No 99 of 24.06.2020 has approved the fulfilment of the conditions of the Decision of the Board of Commissioners of ERE No 43 of 15.03.2017.

Unbundling of OSHEE S.A

As of 1 January 2020, the legal and functional unbundling of Distribution System Operator (OSHEE S.A.) was completed in line with the abovementioned Decision of Board of Commissioners of ERE No 211 of 18.12.2019 and the three incorporated daughter companies are carrying out their activities:

- Universal Service Supplier S.A. (FSHU) with the object of activity "Electricity supply of end-customers operating in the regulated market defined by the legislation in force";
- Free Market Supplier S.A. (FTL) with the object of activity "Purchase and management of electricity and operation in the free market, etc.";

- Distribution System Operator S.A. (OSSH) with the object of activity "Distribution of electricity, construction, operation and maintenance of the electricity distribution network for the supply of electricity to customers, connection of customers and users of the network electricity, distribution, installation and electricity metering services, etc.".

On 18 April 2023, the Secretariat closed Case ECS-4/17 against Albania for lack of unbundling of the electricity distribution system operator (DSO), OSSH. This decision follows the complete transposition of the Electricity Directive's provisions related to DSO unbundling in national law, the completion of legal unbundling and substantial progress in functional unbundling. The latest measures ensuring functional unbundling were the adoption of a compliance program and the appointment of a compliance officer.

The retail market remains only partially deregulated, due to the possibility given by the Law to all categories of customers, except those connected to high voltage, to continue to be supplied by the last resort supplier, OSHEE, at regulated prices for a period of two years after the technical preconditions for switching are in place. As a result, most of the customers remain at regulated prices, except for a part of the 35 kV customers. This undermines the eligibility right and the interest of new suppliers to enter the retail market.

The figure below shows the Average annual prices of electricity for end users per component [EUR/kWh] until 2022.

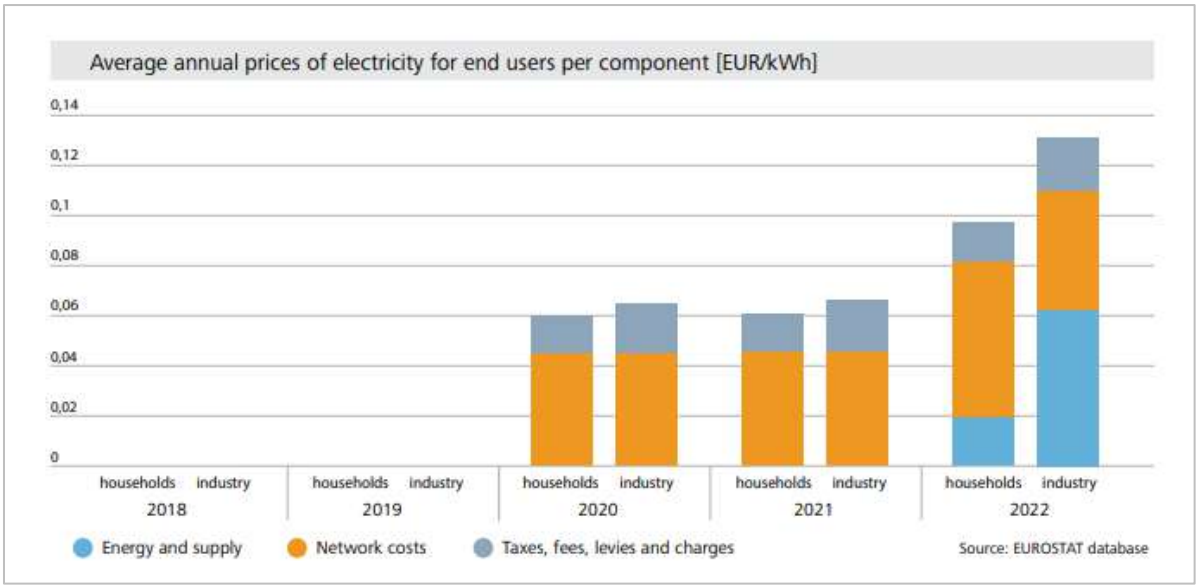

Figure 15: Retail Market Opening (Source: Ministry of Infrastructure and Energy)

The second phase of market liberalization started in January 2022, with at least 7,000 businesses expected to enter the free market. According to OSHEE, they are mainly businesses in 20 kV. According to the law, businesses connected to 10 kV or 6 kV must also be part of this market.

Vulnerable customers are identified and supported under a legal framework and conditions not related to energy and governed by the Ministry of Social Affairs, which allocates financial support from the state budget. The rules, conditions and mechanisms for compliant support of vulnerable customers, as stipulated in the Acquis and transposed in the Power Sector Law, have not been implemented.

1.2.2.7.2 Gas Sector

Albania still has no gas market, and it is not connected to any international gas infrastructure. However, the basic legislative framework is in place:

- Law No. 102/2015 of 23.9.2015 "On the natural gas sector", amended by Law No. 64/2018, the Law 89/2018 and the Law 81/2021

The Law No. 102/2015 of 23.09.2015 "*On the natural gas sector*", as amended, is fully aligned with the EU *acquis* as reported previously in the first Albanian contribution to the 2016 EC Report on Albania. For the implementation of the Law No. 102/2015 of 23.09.2015 "*On the natural gas sector*", the following implementing acts are approved:

- DCM No. 417 of 10.05.2017 "*On the approval of the natural gas emergency plan, in accordance with the minimum-security standards of supply, and the rules to ensure safe and efficient supply with natural gas*"
- Decision of Board of Commissioners (DBC) No. 100 of 5.08.2015 "*On the approval of the provisions for the certification or the natural gas transmission operator*", amended
- DBC No. 96 of 17.06.2016 "*On the approval of the Regulation on the organisation, functioning and the procedures of ERE*"
- DBC No. 114 of 8.07.2016 "*On the approval of the Regulation on handling of complaints submitted by clients and resolution of disputes between the license-holders in the electricity and natural gas sector*"
- DBC No. 119 of 21.07.2016 "*On the approval of the Regulation on procedures for transfer of assets from the licensees*"
- DBC No. 34 of 2.03.2017 "*On the approval of the Guideline on the criteria to decide the access to premises for the depositing of the natural gas*"
- DBC No. 77 of 26.05.2017 "*On the approval of the compliance programme of the natural gas transmission system*"
- DBC No. 78 of 26.05.2017 "*On the approval of the contract to offer compliance officer services in the natural gas sector*"
- DBC No. 95 of 4.07.2017 "*On the approval of the Regulation on conditions and procedures to levy fines and the concrete punishment for each breach in the natural gas sector*"
- DBC No. 97 of 4.07.2017 "*On the approval of the Regulation on the procedures for licensing, modification, transfer and removal of licenses in the natural gas sector*"
- DBC No. 38 of 27.02.2020 "*On the approval of the methodology for determining the tariff for the sale of natural gas by the supplier of last resort*"
- DBC No. 51 of 26.03.2020 "*On some temporary changes in the licensing procedures in the exercise of activities in the electricity and natural gas sector within the measures after the appearance of the covid virus19 and the declaration of the state of natural disaster in our country*"
- DBC No. 68 of 22.04.2020 "*On the approval of the" Natural Gas Transmission Network Code in Albania"*
- DBC No. 103 of 24.06.2020 "*On licensees in the electricity and natural gas sector who have not paid regulatory fees*"
- DBC No. 133 of 10.08.2020 "*On some changes in the decision of the wind board no. 51, dated 26.03.2020 "on some temporary changes in the licensing procedures in the exercise of activities in the electricity and natural gas sector within the measures after the appearance of the covid-19 virus and the declaration of the state of natural disaster in our country*"

- DBC No. 145 of 28.08.2020 "*On the initiation of the procedure for the approval of the draft" General conditions of the type contract of natural gas supply for end customers who benefit from the public supply service*"
- DBC No. 148 of 10.09.2020 "*On the initiation of the procedure for review and approval of the regulation on the procedures for granting the right of exemption for the new natural gas infrastructure*"
- DBC No. 164 of 22.10.2020 "*On the initiation of the procedure for the approval of the" Rules for monitoring the natural gas market*"
- DBC No. 165 of 22.10.2020 "*On the initiation of the procedure for the approval of the" Natural Gas Metering Code*"
- DBC No. 166 of 22.10.2020 "*On the approval of the" General conditions of the standard contract of natural gas supply for end customers who benefit from the public supply service*".
- DBC No.193 of 20.11. 2020 "*On the initiation of the procedure for approval of the model license for the activity of operation in natural gas storage facilities*"
- DBC No. 204 of 04.12.2020 "*On the initiation of the procedure for the approval of the" regulation for determining the criteria for exercising the activity of natural gas storage*"
- DBC No. 218, of 15.12.2020 "*On the initiation of the procedure for the approval of treatment standards of complaints of electricity and natural gas customers from the licensees in the supply activity*"
- DBC No. 265 of 28.12.2020 "*On the approval of the" Rules for monitoring the natural gas market in Albania*"
- DBC No. 267 of 28.12.2020 "*On the initiation of the procedure to approve" Conditions for the licensee charged with the obligation of public service for the natural gas sector "in Albania*".
- DBC No. 268 of 28.12.2020 "*On the initiation of the procedure for the approval of the "rules for the use of the liquefied natural gas (LNG) terminal" in Albania*"
- No. 269 of 28.12.2020 "*On the initiation of the procedure for the approval of the "Methodology for calculating the tariff for the regasification service from LNG plants" in Albania*".
- DBC No. 6 of 15.01.2021 "*On the request of the Albgaz company for the postponement of the deadlines defined in the regulation of standard criteria and minimum requirements for the quality of service and supply of natural gas networks, approved by the decision of the ERE board no. 100/2019*"
- DBC No. 7 of 15.01.2021 "*On the approval of the updated complaint form of electricity and natural gas customers*"
- DBC No. 59 of 25.02.2021 "*On the approval of the model license for the activity of operation in natural gas storage facilities*"
- No. 60 of 25.02.2021 "*On the approval of standards for handling complaints of customers of electricity and natural gas by licensees in the supply activity*"
- DBC No.72 of 12.03.2021 "*On the approval of the" Operational Rules for the supplier in charge of the public service obligation for the natural gas sector*"
- DBC No.73 of 12.03.2021 "*On the approval of the regulation on the procedures for granting the right of exemption for the new natural gas infrastructure*"
- DCM No. 590 of 9.10.2018 "*On the approval of the natural gas market model*"
- DCM No. 69 of 07.02.2018 "*On the approval of the conditions and procedures on the determination of the last natural gas supplier*"

There are in force DCM for Technical Design, Construction and Operation of Natural Gas Transmission and Distribution Systems, LNG installations, storage facilities and direct lines.

Concerning the alignment with the EU Acquis on gas, the Board of Commissioners of ERE approved the following legal acts:

- Decision of Board of Commissioners of ERE No 229 of 15.11.2021 "On the approval of the methodology for regasification service of LNG system operator";
- Decision of Board of Commissioners of ERE No 106 of 19.05.2022 "On the approval of the Regulation on the usage of liquefied natural gas (LNG) terminal";
- Decision of Board of Commissioners of ERE No 185 of 21.07.2022 "On the approval of the methodology of tariff calculation for Natural Gas Storage System Service".

As previously reported, the Law No 102/2015 of 23.09.2015 "On the natural gas sector", as amended, was amended with the Law No 81/2021 of 24.06.2021 "On some addenda and amendments to Law No 102/2015 of 23.09.2015 "On the natural gas sector". The Law No 81/2021 of 24.06.2021 introduced new provisions related to the security of gas supply.

Based on these amendments related to the security of supply as well, as in the Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010, the draft Decision of Council of Ministers "On the emergency gas plan of the Republic of Albania" is prepared.

In addition, the draft Decision of Council of Ministers "On the preventive action plan for natural gas in the Republic of Albania" and draft Decision of Council of Ministers "On the approval of the criteria and procedures to benefit the status of the client in need in natural gas supply and the method of their treatment", are prepared.

These three draft Decisions of Council of Ministers were submitted to line ministries for their opinions and comments. Currently, their comments are being reflected in the draft Decisions of Council of Ministers.

In October 2018, Albania adopted the Natural Gas Market Model. General rules on the setup of the natural gas market were set and consist of bilateral trading on the natural gas retail and wholesale market, the day-ahead natural gas market and the natural gas balancing market.

The gas market model requires the adoption of market-based balancing rules carried out by the transmission system operator. Tariffs for balancing services must be calculated and set in accordance with market-based conditions. A day-ahead natural gas market should be established using a natural gas trading platform allowing anonymous sale and purchase. The establishment of the market requires a decision of the Ministry of Infrastructure and Energy in consultation with ERE and other stakeholders.

Albania's regulator adopted a transmission tariff methodology for the gas sector in November 2017. An entry/exit methodology was introduced and fees according to the entry/exit model were established by ERE.

Non-discriminatory access to the transmission and distribution networks as well as to LNG and storage facilities is guaranteed in line with the Third Energy Package. A decision of ERE transposed amendments to Annex I of Regulation (EC) 715/2009 as adapted by the Energy Community.

In general, the TAP Code contains all specific points and operationalizes some other requirements from the Exemption Decision. For the non-exempted capacities, third party access services offered by TAP, capacity trading and capacity allocation are in line with Regulation (EC) 715/2009, and also to a great extent with the Capacity Allocation Mechanisms Network Code (Regulation (EU) 2017/459).

Albgaz has been receiving technical assistance for capacity building-related development from the EBRD, which is closely working with the Energy Community Secretariat. Albgaz together with the Economic Consulting Associates Ltd drafted a regulatory that would reconfigure the Directorate of Trade and Regulatory Relations as well as staff training, with the appropriate concepts, practices, and methodology for the optimal and competent implementation of regulatory responsibilities. Albgaz in cooperation with the MJM Energy Ltd. has undertaken the drafting of the Transmission Network Code, which was later approved by ERE.

Figure 16 shows the degree of implementation by gas market indicators which is 44% in 2023.

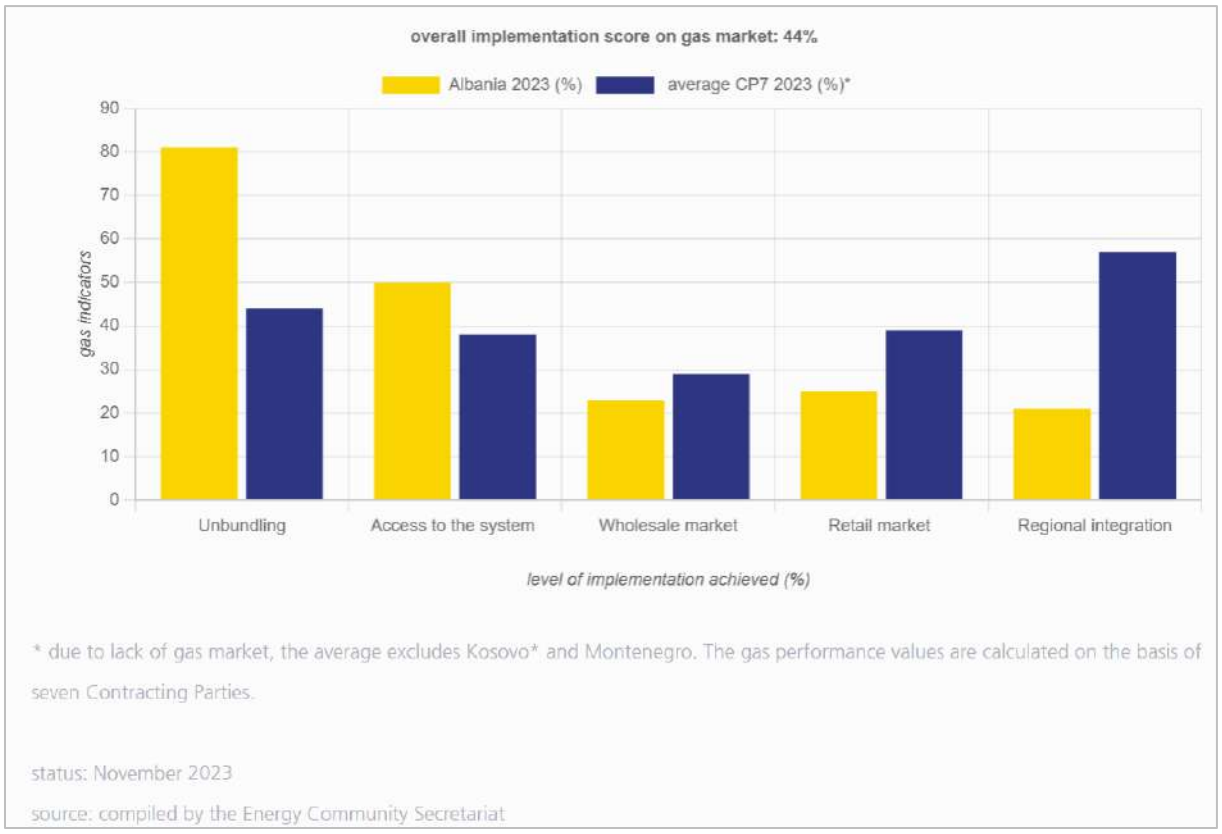

Figure 16: Implementation by gas market indicators (Source: Energy-community.org Status 2023)

Law on Natural Gas

The Law on Natural Gas sets the eligibility provision for all customers in line with the Third Energy Package. All customers are allowed to choose and switch their gas supplier freely.

Household customers and small enterprises are entitled to regulated gas supplies under public service obligations and the supply of last resort is foreseen for all customers. The majority of requirements under Directive 2009/73/EC with regard to customer protection and vulnerable customers were transposed by the Law. However, the criteria and procedures for determining who qualifies as a vulnerable customer are yet to be adopted by the Council of Ministers. The Natural Gas Emergency Plan was adopted by the Government with the Energy Community Secretariat's assistance.

General rules on procedures for switching of the natural gas supplier and general conditions for the supply of natural gas were adopted by the ERE in July 2018 in line with the Third Energy Package.

The Gas Law of 2015 set the unbundling requirements which are in line with the Third Energy Package. Subsequently adopted certification rules have supplemented these provisions in a proper manner.

Both transmission system operators – Trans Adriatic Pipeline (TAP) AG, operator of the TAP in Albania and Albgaz, the state-owned transmission and distribution system operator, are certified.

Compliance issues with Albgaz's certification decision procedure were the main discussion point, in particular with regards to the outbound. The issue will be addressed further by the Energy Community Secretariat in cooperation with MIE and ERE. The adoption of an independent compliance officer was a step in the right direction, but the whole year has passed without any satisfactory solution.

Competition Law

The Law on Competition Protection contains provisions corresponding to Articles 101, 102 and 106 of the Treaty on the Functioning of the European Union. During the reporting period, secondary legislation regarding restrictions directly related and necessary to concentrations and damages has been adopted.

The Albanian Competition Authority's (ACA) activities in the energy sector mainly focus on recommendations. However, full compliance with the Treaty's obligation on enforcement of the competition Acquis requires more rigorous enforcement activity by ACA.

Based on a complaint transmitted by the Energy Community Secretariat, ACA investigated potential infringements on the market of storage and deviation of electricity. In its decision, the ACA found that KESH abused its dominant position through the implementation of two contracts with GSA SHPK and EFT AG and obliged KESH to discontinue these contracts.

System for tendering new generation capacity

The Decision of Council of Ministers No. 349 dated 12.06.2018 "On the approval of support measures for the promotion of the use of electricity from renewable sources of sun and wind, as well as procedures for selecting projects for their benefit" is in force. This Decision establishes support measures for the promotion of the use of electricity from renewable sources of sun and wind and procedures for selecting projects that benefit from these measures, according to Article 8(1) of Law No. 7/2017 dated 2.02.2017 "On promotion of the use of energy from renewable sources" and the objectives of the Consolidated National Renewable Action Plan 2019 – 2020.

Regulation (EC) 1099/2008 on energy statistics

The National Agency for Natural Resources (NANR) pursuant to the Decision of the Council of Ministers nr. 202, 1 April 2007, is the institution in charge of assembling and processing energy data on both the supply and the demand side. NANR has been compiling annual energy balances and annual questionnaires. INSTAT, as an official statistical institution, has transmitted periodically via Edamis, Eurostat questionnaires. At the national level, INSTAT publishes the Balance of Electricity, which provides statistical information on domestic production of electricity, electricity exchange, electrical losses and the usage of electricity for final consumption in our country.

Starting from 2024, NANR has become a statistical agency.

Concerning monthly statistics, oil, electricity, and natural gas data are available and transmitted to EUROSTAT respecting the timeliness of transmission. Monthly oil data, except for oil stocks, are submitted to EUROSTAT and to the JODI database through the UN Statistical Division. Monthly oil statistics defined in Annex C of Regulation (EC) 1099/2008, with the aim to monitor stock building obligations under the oil acquis, continue to be a problem for data collection. Monthly coal data are available.

In 2020, NANR started to collect data on prices charged to industrial end-users, as well as the breakdown of electricity prices per component pursuant to Annex II to Regulation (EU) 2016/1952.

In 2022, NANR has transmitted Detailed statistics on final energy consumption – Industry sector and detailed statistics on final energy consumption – Transport sector. Detailed statistics on final energy consumption – Commercial and public services sector, data are not available in detail.

1.2.2.7.3 Electricity interconnectivity

Albania's electricity system has been interconnected with the neighbouring systems of Greece and Montenegro since 2014, when the European Network of Transmission System Operators (ENTSO-E) approved synchronous operation of the Albanian electricity transmission system with the continental European system. The interconnection line with Kosovo has been completed in 2016 and it is operational since 2020 while the interconnection with North Macedonia is under construction.

The level of losses in the transmission system for 2023 is 220 GWh or 2.17 % of the transmitted electricity. This level of losses in the Transmission System for 2023 represents an increase compared with the one of 2022 period, due to the fact that the level of the losses in the Transmission System is connected with the electricity quantity transmitted also in the production level of the HPP-s in the transmission system for 2023 in the value 601 GWh compared with 2022 period, a fact that issued its impact regarding the increase of the losses in the transmission system.

Third party access to the transmission system and provisions on congestion management on cross-border lines comply with the Acquis. Cross-border transmission capacities on the borders with Montenegro, Kosovo and Greece are allocated via the regionally coordinated platform of the South-East Europe Coordinated Auction Office in Montenegro (SEE CAO).

The tariff methodologies are approved by ERE. In December 2018, ERE approved the tariffs for access to transmission and distribution networks and for universal supply for 2019. The prices remained at the same level as in the previous period. Rules and procedures for construction of direct lines have been in force since January 2017.

A delay in the establishment of the power exchange, ALPEX, has slowed down the initiative for the coupling of the day-ahead markets of Albania and Kosovo.

In March 2019, the transmission system operator, OST, signed a Memorandum of Understanding with the transmission system operators of North Macedonia, MEPSO, and Bulgaria, ESO, on the development of the electricity market and strengthening regional cooperation through mutual assistance. The operators expressed willingness to couple their national day-ahead markets, implementation of which depends on the completion of the 400 kV interconnection between Bitola and Elbasan.

Another market coupling initiative in the early stages is between Albania, Italy, Montenegro and Serbia. The terms of reference for the project, adopted in January 2018, requests functional national power exchanges in all parties, as well as an established legal and contractual framework and a coherent regulatory environment with no barriers to trade, as prerequisites. No concrete roadmap for the implementation of the coupling has been adopted so far.

The common capacity calculation methodology for the "shadow capacity calculation region 10", which includes Albania, has been developed and its implementation is pending a recommendation from the Energy Community Regulatory Board, to be adopted in the course of 2019. OST has signed a service agreement with the Security Coordination Centre (SCC) and started the procurement of services in June 2018.

ERE adopted decisions for transposition of the Network Codes on demand connection, requirements for generators and high voltage direct current (HVDC) connection in June 2016. Derogation criteria are not published, and implementation has not started yet.

1.2.2.7.4 Energy transmission infrastructure

1.2.2.7.4.1 Power Sector

The figure below shows in a schematic way the structure of the transmission network in Albania.

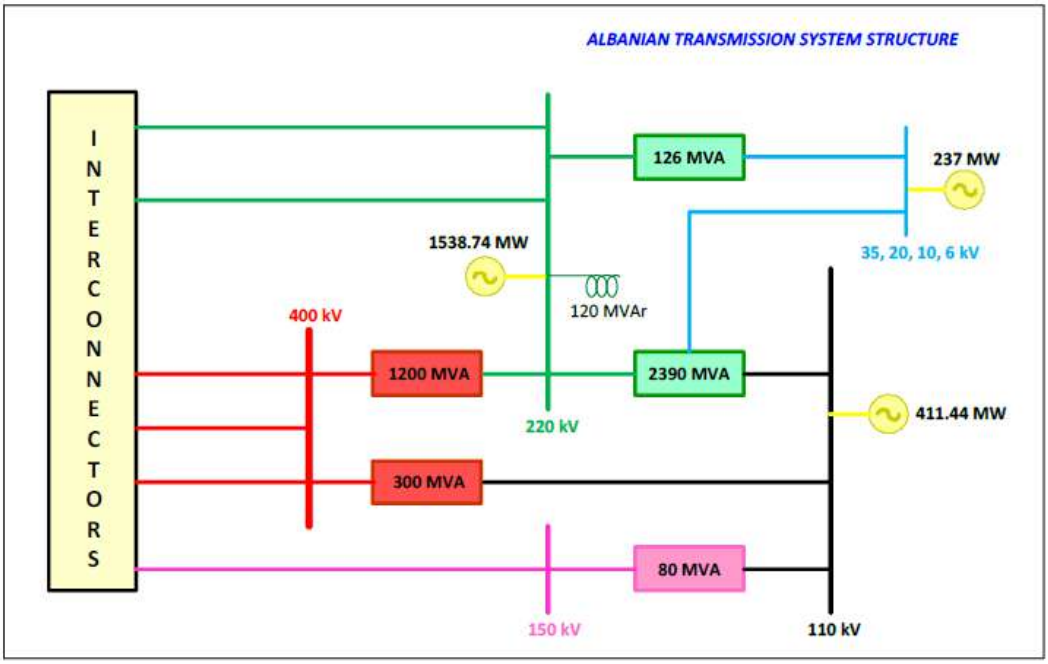

Figure 17: Scheme of Albanian transmission network

Main projects in electricity transmission interconnections

Albania has six interconnection lines with neighbouring countries. The regional connectivity is provided as follows: The Electricity Transmission System of Albania includes all the voltage lines of 400 kV, 220 kV,150 kV, 110 kV and the connection substations between them that serve for the electricity transmission and interconnection.

The line of the transmission system length according to the voltage level are:

• Transmission line 400 kV 445.7 km

• Transmission line 220 kV 1,297.4 km

• Transmission line 150 kV 34.4 km

• Transmission line 110 kV 1,701 km

The above mentioned are part of the Transmission system and the interconnection lines with neighboring countries like:

• Interconnection line 400 kV Zemblak (Albania) – Kardia (Greece)

• Interconnection line 400 kV Tiranë (Albania) – Podgoricë (Monte Negro)

• Interconnection line 400 kV Koman (Albania) – Prishtinë (Kosovo)

• Interconnection line 220 kV Fierzë (Albania) – Prizren (Kosovo)

• Interconnection line 220 kV Koplik (Albania) – Podgoricë (Monte Negro)

• Interconnection line 150 kV Bistricë (Albania) – Myrtos (Greece)

Planned/under implementation transmission interconnections:

- **400 kV interconnection line Albania – North Macedonia**

The project is divided into two Lots: Lot 1 (Lines) and Lot 2 (Substations). After receiving "No Objection" from the KfW, the project implementation contracts with the winning bidders has been signed as of 14.01.2021, for an overall value of approx. 35,8 Mil euro. The deadline for the completion of the projects is foreseen 24 months from the effective date of contract for both lots.

The 400 kV interconnection line Albania - North Macedonia shall increase the power transmission capacity, will improve the cost-efficient security of the supply and reduce losses in the transmission and the supply of electricity in Albania. Also, this project strengthens the interconnections with the regional network, create conditions for an integrated power market in the region and a more secure and reliable system, as well as for trade exchanges and transits in the region without any restrictions.

- **400 kV interconnection line Albania (Fieri) – Greece (Arachtos)**

Based on the forecasts and large development potentials of renewable sources, in the long-term plans of the transmission system operator, it is foreseen the construction of a new 400 kV interconnection line Albania (Fieri) – Greece (Arachtos), overhead and with a single circuit, with a length of about 125 km. This project aims to strengthen the connection between the electrical transmission systems of Albania and Greece and increase the net transmission capacity of the Albanian grid by allowing the increase of energy exchange between the two countries and reducing technical challenges in the framework of the liberalization of electricity market, but also as an electricity corridor to Central Europe and Italy due to the location of Albania.

The Project has been identified as a priority investment in the mid-term time schedule from the Masterplan of Albanian Transmission Grid Development. The Prefeasibility Study has been prepared in this regard in December 2020. Expected Albanian part of the investment will be 63.6 million Euros.

A Memorandum of Understanding between OST (transmission system operators of Albania) and IPTO (transmission system operators of Greece) on the preliminary activities for the project "Construction of the new interconnection line 400 kV Greece – Albania" has been signed by both companies. Together with IPTO, this Project has been jointly applied in ENTSO-E1 for inclusion in the TYNDP2 2024. The application had a positive result from the WBIF Screening review and a grant for technical assistance has been approved. The Technical Assistance grant WB29-ALB-ENE-01 was approved by the WBIF Operational Board in June 2023. The lead Financial Institution for this project is KfW, and the grant amount is €1,100,000.00 (excluding fees).

In the feasibility study to be conducted, the possibility to build the new interconnection as a 400 kV double circuit line will be further investigated in collaboration with IPTO. IPTO and OST will investigate the possibility for this Project to increase the NTC value3 in this border with an additional 600 MW. Expected time schedule for completion of the investment is 2030.

1.2.2.7.4.2 Gas sector

Since December 2020, the Trans Adriatic Pipeline (TAP) has been crossing the Albanian landscape. Meanwhile, the Albanian government is on the path to developing gas infrastructure. The domestic natural gas production is marginal, with majority of production being consumed for own use in oil production and by the refining industry. The TAP pipeline has been completed and it is operational since late 2020, opening the route for gas supplies from the Shah Deniz II field in Azerbaijan and link the country with the European gas market through connections with Greece and Italy.

The Ministry of Infrastructure and Energy adopted in December 2018 an act on designation of service areas for transmission and distribution of natural gas. Its provisions aim at ensuring development of natural gas infrastructure.

Main projects in gas interconnections

The construction of gas interconnections in Albania is elaborated in detail in the Gas Master Plan (GMP) for Albania adopted by the DCM No. 87 of 14.02.2018 "On the approval of the Plan for the development of the natural gas sector in Albania and the identification of the priority projects" as well as by the National Territory Council (NTC) with its Decision No 2 of 26 July 2018.

1.- Trans Adriatic Pipeline (TAP) project

The Trans Adriatic Pipeline (TAP) is in commercial operation and on June 2021 TAP has signed a Cooperation and Delivery Agreement at the Fieri South facility with the Ministry of Infrastructure and Energy and Albgaz S.A. TAP will design and build the South Exit Point.

As of May 18, 2021, TAP AG announced the market testing phase. The deadline for submission of bids has been July 17, 2021. The mandatory phase opened after the approval of the TAP proposal by Snam Rete Gas (Italian gas transmission operator) and DESFA (Greek transmission operator), as well as the regulatory authorities of Albania, Greece and Italy in May 2021. TAP envisages 3 expansion scenarios: (i) limited expansion (14.4 billion m^3); (ii) partial expansion (17.1 m^3); and (iii) full expansion (20 bcm /a). The next mandatory testing phase is scheduled for July 2023 but may be accelerated if interest is expressed during the consultation.

TAP AG has signed the Maintenance Contract with "Albanian Gas Service Company" S.A. (a Joint Venture between Albanian Gas Company, "ALBGAZ" S.A. and Italian Company SNAM S.p.A.), for maintenance of the TAP during its operational phase.

TAP will facilitate greater interconnection between countries in the region of Southeast Europe and the creation of a regional gas market fully integrated with the European Market. Through this project Albania is given the opportunity to create a necessary node for region because it also provides the possibility of underground gas storage as well as a liquefied natural gas LNG terminal.

Trans Adriatic Pipeline (TAP) started commercial broadcasting in December 2020. During the period December 2020 till 31.12.2021, TAP broadcasted 6.8 BCM. During 2022, TAP broadcasted 9.2 BCM. During the period 1.01.2023 till 30.04.2023, TAP broadcasted 2.89 BCM.

2.- Ionian Adriatic Pipeline (IAP) project

The project WB15-REG-ENE-02 "Preliminary design of Adriatic Ion gas pipelines – parts of Montenegro and Albania" was finalised in December 2021. This pipeline will contribute to the security of supply and diversification of supply, market integration, and increasing market competition. The Ionian-Adriatic Pipeline is designed to connect with TAP.

The draft preliminary technical design for the Albanian section was submitted by the consultant SUEZ IPF 6. In February 2021, the consultant submitted the final draft of ESIA for the IAP Albanian section. In this phase of the project, the ESIA is prepared and the final report is being prepared to be submitted to the Albania government. The IAP is projected with a capacity of 5 billion m^3/year, seen as a connection of the Western Balkans to benefit from TAP gas. Albania and Kosovo are expressed for an extension between the two countries, in order for Kosovo to benefit from gas.

The Ionian-Adriatic Pipeline (IAP) is part of the international gas transmission system that passes through Albania, Montenegro and Croatia. IAP will connect the existing gas transmission system of the Republic of Croatia with the Trans-Adriatic Pipeline (TAP) in both directions. IAP project is part of the forthcoming Southeast Europe Gas Ring Road and is the most important regional project in Southeast Europe which has received support from the Energy Community and the European Commission. It has also been selected as a Project Mutual Interest (PMI) by the Energy Community. The IAP section, approximately 170 km through Albania, is designed to allow optimal gas transmission from TAP to Montenegro, Bosnia and Herzegovina and Croatia, and to facilitate the further development of the gas transmission system in Albania. IAP will be the backbone of the northern part of the Albanian gas transmission system. Furthermore, it is envisaged that the IAP will facilitate the supply of gas to Kosovo through the planned Alkogap pipeline in the future.

3.- Albania – Kosovo gas interconnector pipeline (ALKOGAP project)

The prefeasibility Study was completed at the end of 2018, under the WB15-REG-ENE-01 "Pre-feasibility Study for Albania to Kosovo Gas Pipeline" (ALKOGAP project), implemented by IPF4 TA, financed by the WBIF with grant 0.3 million euro.

The Ministry of Infrastructure and Energy of Albania together with the Ministry of Economy of Kosovo will re-apply in the next Call for Technical Assistance Grants of WBIF for the preparation of the Feasibility Study and full ESIA/EIA for the ALKOGAP Project. In the meeting of the Energy Community, held in March 2020, the ALKOGAP project was included on list of PECI 2020.

4. Fieri – Vlora Gas Pipeline

The project WB20-ALB-ENE-04/ EBRD/ Albania, Fier – Vlora Gas Transmission Pipeline: Detailed Design, Tender Documents, financed under the WBIF, was completed.

The Albanian government intends to create a complex hydrocarbon infrastructure, including an unloading terminal and storage for the supply of LNG to TPP-Vlora as well as transmission through gas pipelines. The Strategy of Government of Albania is to make Albania a regional hub for gas supply in order to guarantee interconnectivity, security of supply and diversification through LNG, but also from TAP.

4.- Underground Gas Storage Dumrea (UGS Dumrea)

The project "Underground Gas Storage Dumrea (UGS Dumrea)" was included in the National Sectorial Plan for the Albanian gas sector (Albanian GMP) approved by the DCM No. 87 of 14.02.2018 "On the approval of the Plan for the development of the natural gas sector in Albania and the identification of the priority projects" as well as by the National Territory Council (NTC) with its Decision No. 2 of 26 July 2018. The Steering Committee of WBIF in its meeting of 6 December 2018 approved a grant of 1 million euro for the preparation of the Feasibility Study and ESIA for this project. The preferred option with 800 million/m^3 deposition of natural gas for Dumrea Underground Natural Gas Storage was selected and the project was finalised in December 2021. In March 2021, the state-owned company Albgaz signed a Memorandum of Understanding with SNAM s.r.l. company for the development of this project.

The ToRs for the preparation of the Feasibility Study and ESIA for the project WB20-ALB-ENE-01 "Albania, Dumrea Underground Natural Gas Storage" are prepared by the consultant and submitted to the WBIF and EBRD for further procedures.

The project will contribute to increasing the energy security of our country, but also to a wider regional plan. The project envisaged in 2 phases. The first phase consists of the development of a storage structure, which enables gas storage capacities to cover the demand in the country. The second phase foresees an expansion of the deposit capacities, taking on a regional character. For the gasification of Albania, it is signed the MoU for cooperation between the Ministry of Infrastructure and Energy and the American companies Exxon Mobil and Excelerate Energy on 12.03.2021. This MoU is essentially related to the evaluation of the technical and commercial regulatory framework for the introduction of liquefied natural gas (LNG) in Albania. It includes the complete chain of using LNG in Albania.

On 15.07.2021, the Albanian gas company, Albgaz, the US Excelerate Energy L.P. (Excelerate) and the Italian company Snam S.p.A (Snam) signed in Tirana the Memorandum of Understanding, on the possibilities of cooperation for the construction of a gas pipeline from the Vlora Terminal to the other possible natural gas infrastructures in Albania.

1.2.2.7.5 Electricity and gas markets, energy prices

1.2.2.7.5.1 Electricity

As provided in Article 3 of the Law No. 7/2018 of 15.02.2018 “On some amendments and addenda to Law No. 43/2015 dated 30.04.2015 ‘On Power Sector”, the final customer supplied with electricity by the supplier of last resort and who, as foreseen in the Article 109 of the Law No. 43/2015 of 30.04.2015, enters for the first time in the liberalized market, is obliged to sign a supply contract with a new supplier within two years from the start of the supply contract from the supplier of last resort. At the end of this period, the system operator will interrupt the power supply to this customer.

This amendment (the period of two years) takes into account the lack of customer experience to operate into the liberalized market and gives to the customers the necessary time to adapt to the transition from the regulated market to the liberalized market.

As of March 2020, all customers connected to 35 kV are supplied in a liberalised market. The work is underway to connect and facilitate the entrance of the 20 kV customers in this market. All those customers are equipped with intelligent measurement systems. The second phase of liberalisation has started in January 2022, with at least 7,000 business entering the free market. According to OSHEE sha, there are mainly the business connected to 20 kV. According to the law, all the businesses connected to 10 kV and 6 kV must also come out in the free market. Bringing the 20 kV customers in the free market is expected to reduce the amount of electricity the distribution company needs to supply in the regulated market.

Pursuant to Law no. 43/2015 "On the Electricity Sector", as amended, and the Methodology for determining the sale price of electricity by the supplier of last resort, the price of electricity is reviewed and approved periodically from ERE. All customers, subject to the unregulated market, are obliged to meet the technical conditions of installation of the metering system for entering the unregulated market from January 1, 2022.

Price regulation and adjustment

Consumers in Albania are free to choose their suppliers, according to the approved rules for switching suppliers. Consumers connected to 35 kV and high voltage, and as of 1 of January 2024, consumers connected to the 20 kV, are supplied on the free market (with the exception of the water-sewage companies, State institutions that provide public health services (hospitals and emergency centres); State institutions that execute criminal punishments and state institutions.). If consumers are not able to secure a supply agreement, they have the right to use the electricity supply service from the supplier of last resort for a period of no more than two months. Contrary to that, consumers connected to the 6 kV and 10 kV continue to be supplied by the supplier of last resort. The price of supply of last resort is based on incurred costs approved monthly by the regulator. The universal supplier FSHU acts as supplier of last resort until a tendering procedure takes place and supplies all households and small consumers under regulated prices For the end-use customers which are being supplied from the Universal Service Supplier, the price has not changed.

Regulation (EU) 2016/1952 on European statistics on natural gas and electricity prices

Price statistics fall in principle under the responsibility of INSTAT. In the absence of a clear separation of duties between AKBN and INSTAT, the former began collecting data in cooperation with ERE. AKBN is collecting and disseminating data on electricity prices charged to households. Data linked to natural gas is not relevant for Albania yet. Nevertheless, the set of compiled data is still incomplete. Prices charged to industrial end-users are not available yet.

In addition, the breakdown of electricity prices into main components, as required by the Regulation, is not compiled and transmitted to EUROSTAT. The missing datasets include price components charged

to both household and non-household customers. Currently, Albania is the only Contracting Party failing to report end-user prices charged to non-household customers.

The statistics on end-user prices charged to non-household customers (industry) and the breakdown of prices, both household and non-household, into price components are not complete and do not comply with Regulation (EU) 2016/1952.

1.2.2.7.5.2 Gas Sector

In 2019, ERE started the procedures for the adoption of the "grid code harmonizing tariff structures for gas transmission", through the Decision of Board of Commissioners of ERE No. 168 of 4.11.2019 "On the initiation of the procedure for the adoption of the "grid code harmonizing tariff structures for gas transmission".

The Law No 102/2015 of 23.09.2015 "On the natural gas sector", as amended, is amended with the Law No 81/2021 of 24.06.2021 "On some addenda and amendments to Law No 102/2015 "On natural gas sector". This law is aligned with the Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

During 2020, the Board of Commissioners of ERE approved the following legal acts: (i) Decision of Board of Commissioners of ERE No 266, dated 28.12.2020 "On the approval of Natural Gas Metering Code in Albania" and (ii) Decision of Board of Commissioners of ERE No 265 of 28.12.2020 "On the approval of the Rules on natural gas market monitoring in Albania".

The Albgaz Company S.A. is planned to be engaged in the development of the gas network in Albania in line with the Gas Master Plan as explained in the point above on Gas Master Plan. Albgaz in cooperation with the Consultant MJM Energy Ltd. has prepared the Transmission Network Code, which is approved with the Decision of Board of Commissioners of ERE No 68 of 22.04.2020 "On the approval of the natural gas transmission network code". Albgaz is already licensed by the ERE as the gas Transmission System Operator.

1.2.2.7.5.3 Energy poverty

Albania provides access to electricity for the entire population, through a process completed before the transition period in the 90's. Albania has succeeded to provide universal access to all its citizens and the country relies on domestic electricity production which is based primarily in clean hydropower energy. The substantial investments in the energy sector over the recent years have improved significantly the quality of electricity supply and attracted the interest of private sector participation, including notable international companies, to develop electricity production plants. The electricity grid constantly expands and upgrades to meet the increased demand and new connections. Substantial improvements have been achieved over the recent years in the collection of electricity bills, resulting in an improved performance of the public companies operating the core of the energy sector.

Despite the improvements and the advantage on relying on clean energy sources, the country should focus further on the affordable aspect of this target as the electricity prices are relatively high compared to regional level. The Albanian Law on the Power Sector (OG 43/2015) defines a vulnerable customer (Article 3) as a household consumer who due to social reasons, in special conditions and by definition of this law, is entitled to certain special rights regarding the supply of electricity. The vulnerability criteria are, according to Article 95, determined by the Ministry responsible for Social Affairs in cooperation with the Ministry responsible for Energy and Ministry responsible for Finance together with the state Energy Regulatory Entity. Vulnerability is addressed through different energy and social policies in accordance with the Social Strategy in the Energy Community (2013).

However, Energy poverty as such is not yet clearly defined and systematically monitored. There are no specific policies in place designed to alleviate energy poverty. The only instruments there are the compensation schemes in form of cash benefits applied for the entitled vulnerable consumers, which needs to be updated. "Energy poverty, in general terms, represents the inability of a household to secure adequate amounts of energy in the home – allowing it to keep living spaces adequately warm and well lit, to have access to a needed range of energy services, and to be able to afford a sufficient amount of energy for everyday requirements[5]."

As of December 2021, the Secretariat of the Energy Community has prepared a detailed study addressing the energy poverty issues in the Community Contracting Parties. The report underlines that 37% of Albanian households belong to what is called energy poverty by not having access to heating and optimal conditions in their homes. This is estimated at over 272,000 households. Because the official data are missing, the Secretariat underlines the need for having more measurable data for this aspect as well. The recommendations identified in this study are going to be taken in consideration in developing the policies and measures to address this issue.

1.2.2.7.6 Assessment of policies and measures

Assessment of policies and measures shows that Albania has adopted legislation on gas and electricity in line with the EU's third energy package. The new national energy strategy 2018-2030 has been adopted. There was progress in the gas sector and on interconnection lines.

Detailed assessment of the most important topics:

1. Unbundling and third-party access rules

In March 2017, the Albanian Energy Regulator Entity (ERE) approved the certification of OST SA as the transmission system operator, following a positive opinion from the Energy Community Secretariat. The ENTSO-E assembly therefore admitted OST SA as a full member of the network. However, ERE also imposed conditions on OST SA in the final certification decisions. These conditions concerned the transfer of investment tasks to the new public body owner of the TSO. These conditions have not yet been met, and the deadline for meeting them has been postponed for three years.

As of January 1st 2020, the unbundling of the distribution-system operator OSHEE SA from its supply activity has been concluded by the establishment of three new companies, namely the Free Market Supplier (FTL sha), the Universal Service Supplier (FSHU sha) and Distribution System Operator (OSSH sha).

ERE's legal framework is to a prevailing extent in line with the acquis except for a few but central missing competences, namely the right to impose measures to promote competition, to require transmission and distribution system operators to change their terms and conditions and to raise the penalty level ERE is entitled to impose. On the practical side ERE should develop into a well-equipped and skilled independent institution that addresses shortcomings in the national energy markets more actively.

Regarding the unbundling of the Market Operator, as of the end year 2020, the Power Exchange Operator (ALPEX) has been registered at the National Business Centre on 23.10.2020 and its governing bodies were established. Also, the organisational structure of the company ALPEX was approved by the Decision of the Supervisory Council of the company No 5 of 19.11.2020 "On the approval of the Organisational Structure of ALPEX". The power exchange operator, called ALPEX, will operate the day-ahead market coupling between Albania and Kosovo soon after its operationalisation.

[5] Energy Poverty in South East Europe – Surviving the Cold. South East Europe Sustainable Energy Policy programme (SEE SEP), 2016

2. Harmonization of market rules on a regional level

The country has delayed electricity market reforms and should accelerate implementation of the connectivity reform measures, especially by removing legal and contractual obstacles to the integration of energy markets. The country has to establish an organized day-ahead electricity market.

Electricity prices are still regulated but should be gradually liberalized once legislation is implemented. The freedom for all customers to switch suppliers is effectively prevented by amendments to the Power Sector Law; implementation is still lacking since most customers connected to 35kV are allowed to buy supply of last resort, and all connected to lower voltage level – by universal service supplier. The electricity market remains closed by a regulated contract between state-owned generation and supply companies. This contract must be terminated urgently.

3. Interconnection congestion and reliability management

Albania is not connected to international gas networks.

Albania's electricity system has been interconnected with the neighbouring systems of Greece and Montenegro since 2014, when the European Network of Transmission System Operators (ENTSO-E) approved synchronous operation of the Albanian electricity transmission system with the continental European system.

Albania has six interconnection lines with neighbouring countries. The regional connectivity is provided as follows: The Electricity Transmission System of Albania includes all the voltage lines of 400 kV, 220 kV,150 kV, 110 kV and the connection substations between them that serve for the electricity transmission and interconnection.

The line of the transmission system length according to the voltage level are: • Transmission line 400 kV 445.7 km • Transmission line 220 kV 1,297.4 km • Transmission line 150 kV 34.4 km • Transmission line 110 kV 1,701 km The above mentioned are part of the Transmission system and the interconnection lines with neighbouring countries like: • Interconnection line 400 kV Zemblak (Albania) – Kardia (Greece) • Interconnection line 400 kV Tiranë (Albania) – Podgoricë (Monte Negro) • Interconnection line 400 kV Koman (Albania) – Prishtinë (Kosovo) • Interconnection line 220 kV Fierzë (Albania) – Prizren (Kosovo) • Interconnection line 220 kV Koplik (Albania) – Podgoricë (Monte Negro) • Interconnection line 150 kV Bistricë (Albania) – Myrtos (Greece). Albania also participates in the EU's macro-regional strategy for the Adriatic and Ionian region (EUSAIR), for which the improvement of connectivity (transport and energy networks) is a main priority.

1.2.2.7.7 Trans-European networks

Albania has some level of preparation in the area of trans-European networks. Some progress was made in developing transport and energy networks. Some progress was made on its gas interconnection with the implementation of the trans-Adriatic pipeline project.

In the coming years, Albania should in particular:

(i) continue development of the core transport and energy networks in line with:
   a) the national strategies for transport and energy;
   b) the infrastructure investment prioritization under the single project pipeline; and
   c) the connectivity agenda;

(ii) harmonize the legal framework with the EU Acquis and the regulations on TEN-T (trans European transport networks) and TEN-E (trans-European energy networks), including transposition of Regulation (EU) 347/2013 on guidelines for trans-European energy infrastructure;

(iii) implement connectivity reform measures and strengthen the institutional framework and administrative capacity to develop and monitor TENs.

Albania is making progress in setting up the country's strategic framework **for transport networks.** Albania intends to harmonize its legal and institutional framework with the EU TEN-T Regulation and the Transport Community Treaty, which it signed in June 2017 and ratified in February 2018. Albania participates actively in the South-east Europe Transport Observatory (which was replaced by the Transport Community Treaty in January 2019) and Western Balkans 6 (WB6) processes, focusing on improving connectivity within the WB6 and with the EU. The national transport strategy and action plan for 2016-2020 envisages an extension of the TEN-T Comprehensive and Core Networks to Albania and an alignment with TEN-T guidelines and EU standards and regulations. There was progress in drafting the second review of the Albanian national transport plan (ANTP3), which was completed in January 2019.

Albania has made progress in repairing its road infrastructure in the core network. Albania is progressing with the preparation of road and rail infrastructure projects, especially along the Adriatic-Ionian corridor and corridor VIII. Upgrading of the railway from Durres to Tirana is planned to start by mid of 2019. Albania needs to ensure that its transport network projects are implemented in line with the TEN-T regulatory framework. Future infrastructure investments need to be implemented in compliance with EU standards on public procurement, state aid, and EIAs. Projects should be channelled through a single project pipeline, confirming the country's strategic orientation towards TENs. Further efforts are needed on road safety. More serious measures should be taken to fix 'blackspots' along sections of roads with high accident rates. Adoption of the multiannual maintenance plans for the entire core network (rail and road) remains a challenge.

Albania is partially aligned with the Acquis on a single European railway area, railway system interoperability and rail freight corridors for competitive freight.

Further efforts are needed to:

- align the country with the Directive on intelligent transport systems,
- develop the national strategy for intelligent transport systems (ITS); and
- prepare for implementation of that strategy.

1.2.2.8 Dimension Research, Innovation and Competitiveness

The legal basis for Research and Innovation is the National Strategy for Science, Technology and Innovation DCM No. 710 of 1.12.2017.

An interministerial working group, established in 2021, aims to co-ordinate STI policy measures and implementation; its efforts build on the impact assessment of the previous STI strategy, which constituted an important milestone in ensuring that STI priorities and future activities are aligned and co-ordinated. Furthermore, the Agency for Innovation and Excellence was established in 2023 with the aim to promote innovation and support policy formulation by responsible Ministry. While the agency's establishment is encouraging and underlines the government's commitment to building a knowledge economy, it will be important to ensure efficient co-ordination across ministries, as well as clear responsibilities for the respective institutions.

The National Agency for Scientific Research and Innovation (NASRI) and the Albanian Investment Development Agency (AIDA) remain the key implementation vehicles, and have expanded activities since the previous assessment.

While the NASRI is the main organisation for scientific research and education, the Agency for Innovation and Excellence is mainly aimed at SMEs to foster innovation. Of course, good coordination

is necessary; only then can it be ensured that research results become innovative products and services on the market.

These institutions aim to enhance innovation in various fields, including the economy, culture, technology, security, and defense.

Some of these institutions are:

1. Ministry of Economy, Culture, and Innovation:

Created by the Decision No. 30, dated January 17, 2024, on the Determination of the Scope of State Responsibility of the Ministry of Economy, Culture, and Innovation.

Link: https://qbz.gov.al/eli/vendim/2024/01/17/30/b0fc5faf-dd6b-48a8-905a-a533216b400e

2. Agency for Innovation and Excellence

Created by the Decision of the Council of Ministers No. 620, dated November 1, 2023, the agency is responsible for innovation and excellence in Albania. Its mission is to contribute, promote innovation, and engage experts both locally and internationally in public administration. The agency excels in implementing advanced technologies through the formulation and implementation of policies in collaboration with relevant ministries in fields related to innovation.

Link: https://qbz.gov.al/eli/vendim/2023/11/01/620/ffa80caa-58d5-4b1b-80c7-17c54a6a71f5

3. Ministry of Finance

The law No. 58/2022 "For the Establishment, Organization, and Functioning of Technological and Scientific Parks" indicates that Albania has a specific interest in the development and promotion of the technology and science industry in the country.

Link: https://www.qbz.gov.al/eli/ligj/2022/07/14/58/e68548b9-1260-4425-973b-0a15f1d00cde

4. Security and Defense Innovation Center:

The creation of this center, dependent on the Ministry of Defense, by Decision No. 472 dated July 26, 2023, demonstrates a commitment to innovation in the field of security and defense, an area that requires continuous technological development to protect the country.

Link:https://qbz.gov.al/eli/vendim/2023/07/26/472/01d6777e-93bb-40cd-9aaa
f614ad31b6d9;q=Qendra%20e%20Inovacionit%20t%C3%AB%20Siguris%C3%AB%20dhe%20Mbrojtjes

Science, Technology and Innovation (STI) System:

A comprehensive assessment of the state of play of STI in Albania remains difficult due to the lack of statistical data. While figures are not systematically captured, overall investment into research and development (R&D) remains low and scientific research outputs remain limited with the number of national patent applications stagnant.

A new STI strategy was adopted in September 2023, covering the period 2023-2030. Compared with the previous one that expired in 2022, it considers the results of the impact assessment of the expired strategy, and it contains a number of important objectives aligned to the European Research Area (ERA), such as ensuring open online access for all publicly funded scientific publications and creating legal and fiscal incentives to encourage businesses to finance scientific research.

Albania's new STI strategy 2023-30 has been approved with DCM No. 542, date 20.09.2023 and is published on the official gazette.

Link: https://qbz.gov.al/eli/vendim/2023/09/20/542/96f316d6-b135-42fb-a64a-abbbfa9484c8

Complementing frameworks:

- Business Development and Investment Strategy (2021-27): places strong emphasis on small and medium-sized enterprise (SME) innovation and links between industry and academia to spur economic growth.

- In 2022, legislation on start-ups was adopted, which facilitated the establishment of a start-up agency and regulation of digital nomads.
- The forthcoming Law on Scientific Research will establish new rules and procedures for the organisation and operation of the public research system in Albania. It is also expected to lay the ground for introducing a new methodology for public sector research funding, which may reduce the chronic funding gap in the system. Currently, public sector research institutions, including HEIs, are funded through institutional block funding and some competitive grants distributed through NASRI.

The draft law 'On Science and Scientific Research in the Republic of Albania' has been prepared and, on September 9, 2024, it was submitted for review to the European Affairs Committee in the Albanian Parliament. It is anticipated that the draft law will be approved by a decision of the Council of Ministers within the year 2024.

Support for universities and other research-oriented entities is regulated in the following documents:

- Republic of Albania, Council of Ministers - National Strategy for Development and Integration 2014-2020 pp 72
- DCM No. 710 of 1.12.2017 National Strategy for Science, Technology and Innovation
- Commission Staff Working Document Albania 2019 Report Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and (chapter 15 Energy pp.74)

The Erasmus+ Office (www.erasmusplus.al) supports the mobility of students and staff and the collaboration of Higher Education Institutions by exercising the following functions:

- It processes, promotes and distributes the information and documentation of Erasmus+ Programme to all Higher Education Institutions (HEI);
- It advises, informs and helps all persons concerned on how to apply to Erasmus+ projects;
    - It carries out the monitoring and implementation of Tempus projects, which are still running;
    - It supports and coordinates activities of national group of Higher Education Reform Experts, HERE, who have an advisory and supporting role in achievement of Erasmus+ programme objectives;
    - It contributes to assessment of projects that will be submitted in the framework of “Capacity Building of Higher Education” component in Erasmus+ (ex-Tempus projects).

Participation in regional and international research collaboration programmes, including Horizon Europe, has been increasing, albeit from very low levels and with limited private sector participation.

Albania participates in activities related to the Strategic Energy Technology (SET) Plan on the following legal basis: Commission Staff Working Document, Albania 2019. Report Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee (chapter 15 Energy pp. 74).

Albania’s first Smart Specialisation Strategy (S3) is still under development. The S3 process identifies, among others, energy efficiency, information and communication technology, and the blue economy as key crosscutting priority areas.

1.2.3 Key issues of cross-border relevance

Cross-border cooperation is the key to increasing the share of solar power in the electricity grid and to achieving economies of scale in terms of financing the implementation of energy efficiency measures, among others in building renovation, for example through the aggregation of projects. In this regard, it

is essential to exchange experience and collaborate on the development of strategies, in order to align economically important decisions. However, most important are the electricity sector and the transport sector, and further details are provided in the sections below.

Electricity sector

The Electricity Transmission System of Albania includes all the voltage lines of 400 kV, 220 kV, 150 kV, 110 kV and the connection substations between them that serve for the electricity transmission and interconnection.

Length of the transmission system lines according to the voltage level are:

- Transmission line 400 kV 445.7 km;
- Transmission line 220 kV 1,250 km;
- Transmission line 150 kV 34.4 km;
- Transmission line 110 kV 1624.162 km.

The above mentioned are part of the transmission system and the interconnection lines with neighbouring countries like:

- Interconnection line 400 kV Zemblak (Albania) – Kardia (Greece);
- Interconnection line 400 kV Tirana (Albania) – Podgorica (Montenegro);
- Interconnection line 400 kV Tirana (Albania) – Prishtina (Kosovo);
- Interconnection line 220 kV Fierza (Albania) – Prizren (Kosovo);
- Interconnection line 220 kV Koplik (Albania) – Podgorica (Montenegro);
- Interconnection line 150 kV Bistrica (Albania) – Myrtos (Greece).

The total investment amount realised for 2022 was about 2,217,767,446 ALL, from which: 1,409,082,016 ALL with TSO company funds (OST S.A.), and about 808,685,430 ALL are foreign investments.

These investments aimed mainly to increase the security and quality of electricity supply through the rehabilitation of substations, mainly 110 kV ones with depreciated equipment in time and in mainly manual operation, as well as to reconstruct the 110 kV and 220 kV lines to increase the transmission capacity to be able to withstand not only the current peak load but also to be ready to handle the anticipated renewable energy sources.

400 kV interconnection line Albania (Fieri) – Greece (Arachtos)

Based on the forecasts and large development potentials of renewable energy sources, in the long-term plans of the Albanian TSO, it is foreseen the construction of a new 400 kV interconnection line Albania (Fieri) – Greece (Arachtos), overhead and with a single circuit, with a length of about 125 km.

In February 2022, it was established a joint working group between IPTO and OST for the study of a new HV cross-border interconnection line between Greece and Albania. In November 2022, a Memorandum of Understanding was signed between the two energy transmission companies OST and IPTO on the preliminary activities for the project “Construction of the new interconnection line 400 kV Greece – Albania”. The MoU foresaw the preliminary activities regarding the possible development of the project “Construction of the new interconnection line 400 kV Greece – Albania”. The parties agreed to seek support for the financing of this project, or separately provide funding for its construction.

The overall project consists of closing the 400 kV internal transmission grid in a ring topology through the construction of a new 400 kV OHTL between substations Fier - Rrashbull and building a new 400kV Overhead Transmission Line (OHTL) between the Republic of Albania (Substation Fier) and the Republic of Greece (Substation Arachtos). The route is approximately 203 km long and lies in the west and southern regions of Albania. The starting point of the OHTL route within the Albanian territory is located in the substation of Rrashbull, further to SS Fier and then passing along Vjosa riverbed. Afterward it passes along the mountain area of Llogara, continues to Gjirokastra area towards the border with Greece and continues further to the Greek territory up to Arachtos.

For the Albanian part, the project will include the following measures:

- Construction of a new 400 kV single circuit OH transmission line between Fier and Rrashbull substations – about 78 km long with ACSR 2x490/65 mm^2 conductor;
- Construction of a new 400 kV single circuit OH transmission line between Fier (Albanian territory) and point of Albanian-Greek border – about 125 km long with ACSR 2x490/65 mm^2 conductor;
- Extension of 400 kV Fier substation;
- Extension and reinforcement of Rrashbull substation;
- Conversion works at Tirana-2 substation in order to be able to operate one circuit of the OHL Tirana 2 – Rashbull at 400 kV.

It should be noted that the project of a double circuit 220 kV transmission line between Tirana2 – Rrashbull (in implementation phase) will have one circuit with 490/65 mm^2 cross-section conductor and the other with 2x490/65 mm^2 conductor (with a perspective to upgrade this second circuit to 400 kV once this project is implemented – therefore eliminating the need for a new 400 kV line Tirana 2 - Rrashbull).

Also, considering that Fier substation will become a very important node for RES and possible TPP connection (with more than 1 GW of applied installed capacity), the extension of 400 kV Fier substation and its grid connectivity becomes crucial in the reliability of operation of Albanian power system. Specifically, in substation Fier, the existing 220 kV switchyard will be extended with a new transformer bay and a new bus coupler bay, a new 400/220/35 kV, 400 MVA autotransformer shall be installed and a double busbar switchyard on 400 kV level will be constructed.

The new 400 kV line Fier – Elbasan will have an approximate length of 74 km and after commissioning of the new lines, both SS Elbasan and Fier will be part of the regional 400 kV network, the so-called Corridor 8. Afterwards, SS Fier is planned to close the internal 400 kV ring configuration with the 400 kV line Fier – Rrashbull – Tirana2.

For the Greek part, the project will include the following measures:

- Construction of a new 400 kV single circuit OH transmission line between 400/150 kV Arachthos substation (Greek territory) and point of Albanian-Greek border – about 91 km long with ACSR 2x490/65 mm^2 conductor;
- New 400/150 kV substation in Western Greece (Region of Epirus) connected in/out with the new 400 kV interconnection line.

Recently, the Ministry of Infrastructure and Energy reapplied the project at the TA Round 29 of the WBIF. Meanwhile, the Ministry of Infrastructure and Energy, OST and the international IFI have evaluated that the starting point will be Rrashbull connection point for the new 400 kV interconnection line with Greece instead of Fieri substation, with the purpose to include in one project, also the construction of a new 400 kV transmission line between substations Fier – Rrashbull (approximately 78

km long) and further to Tirana-2, therefore closing the 400 kV internal transmission lines in a ring configuration and significantly raising the expected benefits of the new Albanian – Greek interconnection.

400 KV interconnection line Elbasani (Albania) – Bitola (Republic of North Macedonia)

As previously reported, the 400 kV Interconnection line Elbasani (Albania) – Bitola (Republic of North Macedonia) is expected to improve security of supply and overall operation of the energy system of Albania, as well as positively influence the regional market and its coupling.

The contract for Lot 1 "Lines" with the winning bidder for this lot JV Mitas Energy and Metal Construction Inc – DOKO sh.pk (Turkey & Albania), was signed on 14.01.2021 and entered into force on 10 March 2021. The Contract for Lot 2 "Substations", with the winning bidder for this lot Mytilineos S.A.– Greece, was signed on 14.04.2021 and entered into force on 27 July 2021.

The contractors of both lots submitted at the end of 2021 their respective complaints/claims, where they presented their difficulties in agreeing with the manufacturers/suppliers for the purchase of goods/materials – part of the contract, due to the increasing of metal prices in the international market, as well as of labour and transport costs, as a result of the COVID-19 pandemic situation and the Russia-Ukraine war situation.

The consultant/engineer of the project suggested to accept the claims of the contractors regarding the increase of contractual price for the goods and works – part of contract, proposing the application of a cost escalation formula, in analogy with the relevant clauses of the FIDIC Yellow Book. The consultant/engineer proposed the formalisation of this cost escalation, through an amendment of the contract for each lot – a proposal accepted and confirmed by the financial institution of this project KfW.

For lot 1 (lines): An amendment to the contract was signed in February 2023 with the contractor of this lot related to the change of contractual price as a result of the increasing of goods' price in the international market.

The starting ceremony related to the start date of the works will be announced as soon as the Construction Permit will be obtained from the Territory Development Agency.

For lot 2 (substations): the proposal of the Consultant/Engineer has not yet been agreed yet by the contractor of this lot related to the cost escalation formula/contractual price change, as a result of the increasing of goods' price in the international market. If this agreement will be reached, the relevant amendment to the contract will be signed with the contractor of this lot, for such purpose.

Also, for this lot it is expected to be obtained the Construction Permit from the Territory Development Agency.

Whereas the written procedure for the extension of EU grant under WBIF, is under process in coordination with SASPAC.

400 kV interconnection line between Albania and Kosovo

The new 400 kV line between Kosovo and Albania is now in operation contributing to further cross-border exchanges.

Transport sector

Another crucial sector of cross-border relevance is the transport sector. The present "National Sector Strategy for Transport 2016-2020" has been aligned with the National Strategy for Development and Integration which defines Albania's vision for its national social, democratic and economic development

over the period 2015-2020. The development and modernization of Albania's transport infrastructure has been and remains one of the top priorities of the GoA. The aim has been:

- to create the preconditions for the development of other sectors of the economy,
- to increase the accessibility of freight and passengers in trade and service delivery, and
- to significantly contribute to overall economic growth and development of the economy.

The strategic priority is to accelerate the integration of Albania's transport system, and the establishment of an integrated market comprised of transport infrastructure by land (road and rail), by sea and by inland waterways. Despite significant investments especially in improving road infrastructure, the transport sector has yet to become a significant promoter of economic development in Albania. The timely and adequate funding of annual and medium-term programme investments remains problematic. Further, the quality of transport related public works is still not yet up to EU standards. Aligning Albania's transport policy with the European Transport Policy and coordinating its transport infrastructure with its neighbouring countries – the Western Balkans countries comprising Albania, Bosnia and Herzegovina, Northern Macedonia, Montenegro, Serbia, and Kosovo - have become two must-do's for Albania's transport decision-makers.[6]

Concerning Road Transport, the Albanian National Transport Plan (ANTP3), has been approved by the Order of Minister No. 40, dated 21.01.2020. In the road sector the main priorities are:

- Harmonize the national legislation with the EU Acquis for road transport of goods and passengers;
- Complete the construction of the national road network, including strategic arteries;
- Complete the feasibility study for the Adriatic-Ionian Highway North-South;
- Reform the intercity passenger road transport network.
- Increase investment in the extension of the comprehensive TEN-T network.
- Regarding rail transport the main challenges in the rail sector for the planning period are:
- Reform the rail system to set up an open market for public and private investors whether in terms of market regulation, infrastructure management or rail operations;
- Strengthen human capacities and resources at all levels, in particular to effectively build up the legal and institutional structure that are necessary to ensure a smooth operation of an open market;
- Create favourable legal and institutional conditions for attracting foreign investment; and
- Create a level playing field with other modes of transport.

Other aspects

In terms of integration into the European energy market, collaboration is important with:

- ENTSO-E (European Network of Transmission System Operators for Electricity)
- ENTSO-G (European Network of Transmission System Operators for Gas)

More information is provided in chapter 1.2.2 Dimension Internal Energy Market.

With a view to innovation, it is essential to strengthen research cooperation on topics which are especially relevant for the region.

[6] Sectorial Strategy of Transport & Action Plan 2016 – 2020, First Monitoring Report, No. 811 of 16.11.2016

Basis for regional collaboration including cross-border collaboration is the Energy Community. The Energy Community Secretariat organises different working groups which provide a platform for exchange of information and experience relevant for each dimension of the NECP.

In addition, Energy Community Secretariat launches studies and initiatives which are relevant for the region, among others:

- Western Balkan 6 Initiative
- Energy Community Carbon pricing study (study launched in January 2020 https://energy-community.org/news/Energy-Community-News/2020/02/03.html)

1.2.4 Administrative structure of implementing national energy and climate policies

The Inter-Ministerial Energy and Climate Committee (IECC) has been established as an inter-institutional working group with the presence of Ministry of Infrastructure and Energy (which, due to the extended competences, has the most crucial role and the highest number of representatives from the areas of hydrocarbon, energy, transport, urban planning but also a number of other energy related institutions), Ministry of Tourism and Environment, Ministry of Finance and Economy, Ministry for Europe and Foreign Affairs and INSTAT.

The IECC is primarily responsible for the political and strategic steering, the coordination and decision-making, the verification of results and final assessment and approval of the target-setting during the NECP process. According to the NECP Policy Guidelines by the Energy Community, the Inter-Ministerial Committee on Energy and Climate meets not less than twice a year.

A Technical Secretariat has been established with the Ministry of Infrastructure and Energy, responsible for the following tasks:

- To manage organization, design and elaboration of NECP;
- To organize public consultations and hearings;
- To prepare and process the NECP material to be used for meetings and public consultations;
- To organize technical meetings with all relevant stakeholders;
- To facilitate cooperation and coordination between Working Groups;
- To advise the IECC regarding the adaptation of the drafting timeframes of NECP.

Monitoring and reporting on the implementation of measures and their effects is ensured by the effective collaboration between stakeholders (government and local authorities and others), meetings, consultations, and discussions for issues raised, defining the challenges and steps to overcome them.

Cooperation is institutionalised through the Inter-Ministerial Committee. The Committee meets up to 4 times a year to coordinate activities and adjust timelines. The Agenda contains a slot for reporting, a slot for problem solving, and a slot for strategic discussions. Minutes are circulated among participants. A politically agreed summary is provided to stakeholders via messenger service or website of MIE.

The Albanian government institution MIE through AKBN, ERE, and AEE have the task to monitor and follow up the NSE implementation at each sector and for all energy resources. They submit an annual report to the MIE defining the realization of the EE, RES, and power companies concerning measures in quantities and qualities, level of the realized investments, barriers and reasons behind them, the way of overcoming them, so that energy savings, emission reduction and the remaining targets are achieved.

This way implementation of NECP policy measures can be monitored.

1.3 Consultations and involvement of national entities and their outcome

The draft NECP due to find better solutions, achievements, etc. is the subject of hearings, discussions, opinion exchanges with the participation of the following stakeholder groups: different ministries/agencies affected directly or indirectly by the NECP, local governments (big ones), civil society, energy experts, different associations of businesses. Stakeholders are involved partly/entirely through the cycle of the compilation, implementation and monitoring of the NECP.

Consultation procedures are organized according to Law No. 146/2014 "On Public Information and Consultation" and according to DCM No. 247 of 30.04.2014 "On the definition of rules, requirements and procedures for public information and their involvement in processes of decision-making". Law No. 146/2014 applies rules and procedures on public information and consultation held by public authorities/institutions in policy and decision-making processes.

It is important to note that there are some pieces of legislation included in the duties of governmental bodies, municipalities, etc., which clearly define the right of civil society groups of interests to be involved in the process of drafting policies and legislation and environmental impact assessment.

According to the clearly defined procedures of MIE, after the necessary consultations via meetings, round tables, websites, etc. with all stakeholders of this comprehensive process, MIE and Ministry of Tourism and Environmental will be obliged to reflect feedbacks and to find the right ways to overcome barriers (technical and financial), encouraging and supporting the implementation of the NECP in their own specific sections based on certain guidelines or roadmaps.

The NECP consultation process is managed as an interactive process by the Technical Secretariat on behalf of the Inter-Ministerial Committee on Energy and Climate and with support of GIZ (see Figure 18). The Technical Secretariat is hosted by MIE.

The consultation process is planned as a two-way process, this means that MIE asks for feedback on planned policies and measures, and that stakeholders are able to request more or specific information on certain topics related with the NECP.

Elements of the consultation process:

- All policies and measures are presented on the website of MIE, and all identified stakeholders can provide feedback (online consultation). A word file is provided for download and feedback can be submitted via email. Alternatively, an online survey tool is used to inform stakeholders and collect feedback.
- Stakeholders are invited to ask for more information or specific information in relation with the NECP.
- Joint meetings or call conferences with other neighbouring countries to exchange information and the best practices are also important elements of the process. This applies to selected policies and measures were regional or cross-border collaboration is essential.
- Involvement of experts through Working Groups and external Stakeholder engagement is the key element of the process. The respective organisational chart is shown in the figure below.

The consultation process is documented and evaluated in order to be able to improve the procedure when the next NECP revision is due.

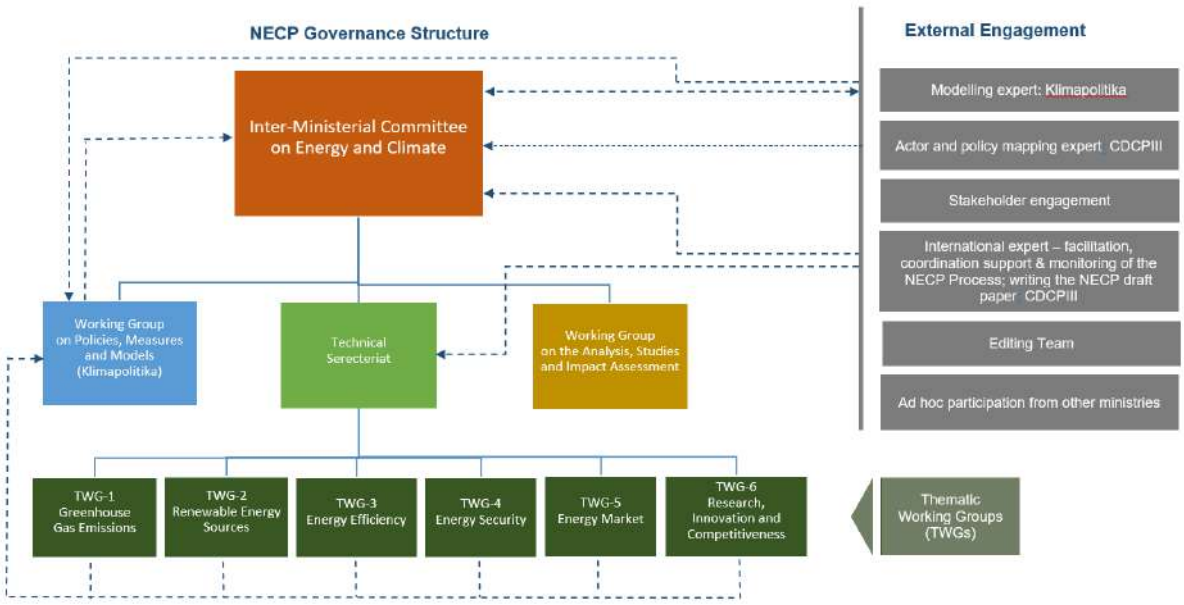

Figure 18: Involvement of experts through Working Groups and external Stakeholder engagement

1.3.1 Involvement of the national parliament

MIE is responsible for managing the process of consultations with institutions directly or indirectly involved in drafting and implementation of NECP at all dimensions. Getting feedbacks, MIE reflects all suggestions provided by different actors to the NECP draft and submits the draft including the reflections provided to the Albanian Parliament and more specifically to a specific body within the Albanian Parliament where the process continues with discussions.

Ministries involved in this process introduce and inform the Parliament on expected advantages related with the NECP, namely, to tap the full potential of synergies between all NECP dimensions for the benefit of the society and the environment. They ask for their support, for example to approve the EE investment funds.

Plenary sessions with the Parliament are organized, for example on energy and climate issues, in order to increase the awareness how to achieve clean air with minimum GHG emissions at the same time. This plenary session aims to explain that this is possible by means of a reliable NECP (based on NSE and NEEAP), a sufficient investment package (a part provided by state budget), implementation of EE measures, naming the responsible institutions, and an effective monitoring process.

1.3.2 Involvement of local and regional authorities

The local governments are active stakeholders during the process of drafting and implementing the NECP.

Local government authorities prepare local environmental action plans periodically in conformity with the strategies and plans referred to in Article 21 of the Law No. 10431 of 9.6.2011 "On environmental protection", amended

Therefore, they are involved in the process of energy policies compilation, in the round tables with different actors, as they will be a very important actor for the implementation of the EE measures in building projects, design, transport and services areas. Local governments compile their own Energy Efficiency Action Plans and have a great role through EE public procurement for their necessities. Implementation of policies and measures related with investments results in energy savings and emission reductions, and also impacts positively on the labour market, GDP growth and social

benefits. Responsible institutions together with local governments may encourage the businesses and advise the population in efficient use of energy resources.

Main institutions being involved in this process are:

Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Ministry of Tourism and Environment, Albanian Investment Development Agency, National Agency of Energy Efficiency, National Agency of Natural Resources, Public Procurement Agency, Albanian Business Association, Albanian Association of Constructors, Albanian local governments, the National Territory Planning Agency and the National Territorial Council.

1.3.3 Consultations of stakeholders, including the social partners, and engagement of civil society and the general Public

An interactive process aiming at participating in the decision making or on drafting policies should be planned especially between actors represented by public institutions, central and local government institutions, and banks, ESCOs, and other financing institutions to inform about and exchange options on investments for NECP measures implementation (Law No. 146/2014 "On Public Information and Consultation").

The process of information and public consultation is realized based on the plan described at the beginning of this chapter on the basis of the following principles:

- Transparency during the public information and consultation process with inclusive and non-discriminatory participation;
- Effectiveness of the decision-making process;
- The responsibility of public authorities/institutions towards the parties/actors concerned on certain issues.

1.3.4 Consultations of other Contracting Parties

Consultation of other Contracting parties takes place on specific topics with cross-border relevance and on specific topics where sharing good practices is helpful.

More information on policies and measures implemented based on a cross-border or regional collaboration is available in the respective chapter 1.4.

1.3.5 Iterative process with the Energy Community Secretariat

The Energy Community Secretariat has been involved from the beginning and has supported with input in the drafting phase as well as with the discussion of preliminary versions.

The Secretariat has participated in the following meetings:

- Virtual meetings for informal coordination among the members of the core team
- NECP working group meetings
- Other coordination meetings

Dedicated workshops took place for specific issues to handle the preparation of national NECPs, such as increasing the capacities on operating the NECP’s modelling software, and facilitating know-how exchange between the working groups members.

As of December 2021, the Secretariat has delivered the recommendations for the draft of NECP with focus on improving policy and measures, better decoupling the economic growth and energy consumptions from GHG emissions, an increased focus on regional exchanges, etc.

During the period January 2022 to October 2024, the NECP was revised based on the recommendations of the Energy Community Secretariat. On 20.06.2022, the 9th meeting of the Committee for Energy and Climate was held aiming to discuss and exchange views regarding the proposed targets for 2030. Based on the Decision of the Ministerial Council of the Energy Community No 2022/02/MC-EnC, of 15 December 2022, on amending Ministerial Council Decision No 2021/14/MC- EnC amending Annex I to the Treaty Establishing the Energy Community and incorporating Directive (EU) 2018/2001, Directive (EU) 2018/2002, Regulation (EU) 2018/1999, Delegated Regulation (EU) 2020/1044, and Implementing Regulation (EU) 2020/1208 in the Energy Community acquis, the new targets were taken into account in the NECP.

1.4 Regional cooperation in preparing the plan

1.4.1 Elements subject to joint or coordinated planning with other Contracting Parties

Energy and climate planning issues related with the Energy Market are consulted with other Contracting Parties as described in chapter 1.2.2 Dimension Internal Energy Market. Transport is another subject of coordinated planning. In terms of promoting and further facilitating the implementation of the Gas Master Plan, inter-ministerial cooperation has already been established between Albania, Montenegro, Bosnia and Herzegovina and Croatia on the IAP (Ionian Adriatic Pipeline) project. There is also an established cooperation with Kosovo for the ALKOGAP project. Procedures are based on the international agreements described below.

International agreements with regard to joint or coordinated planning:

"Energy Community Treaty ", ratified by the Albanian Parliament, Law No. 9501 of 3.4.2006, "On the ratification of the Treaty establishing the Energy Community". Since 2006, the Energy Community acquis has significantly evolved to incorporate new directives and regulations. Presently, the acquis covers legislation on electricity, gas, oil, infrastructure, renewable energy, energy efficiency, competition and State aid, environment, statistics, cybersecurity and climate. The implementation in the electricity sector of Albania is moderately advanced[7].

The ***Greece-Albania-Italy (Intergovernmental Agreement - IGA)*** tripartite agreement has been signed in the natural gas sector, ratified by the Albanian Parliament with Law No. 104/2013 of 25.03.2013, "On the ratification of the Agreement between the Republic of Albania, the Republic of Greece and the Republic of Italy on the Trans Adriatic Pipeline Project (TAP Project)". (Entered into force on 19 February 2014).

TSO signed the **Synchronous Area Framework Agreement (SAFA)** for Regional Group Continental as a member of the European Network of Transmission System Operators for Electricity (**ENTSO-E**) on 6th March 2019, which entered into force for unlimited duration on 14.04.2019. The scope of this Agreement is to provide a legal framework for the operation of the interconnected grids by the TSOs of the Synchronous Area of Continental Europe (ENTSO-E members of this region) through compliance with the methodologies, conditions and values adopted by ENTSO-E.

TSO signed the **Southeast Europe Coordinated Auction Office (SEE CAO)** Agreement on 01.04.2014, with the objective to perform the explicit allocation of cross-border transmission capacity in both directions between Control Areas of Participating TSO's, through NTC based Auction Processes in accordance with conditions for access to the network for cross border exchanges in electricity. Operations of SEE CAO, concerning harmonization of congestion management methods in SEE, the common rules for the internal market in electricity and where applicable, its implementation in the

[7]Annual Implementation Report by Energy Community Secretariat, 1 November 2019

national legislation of concerned countries relating to each of them. Albania started the coordinated auctions on Albania-Montenegro borders as of May 2015.

The European Union and the Parties of Southeast Europe, Albania, Bosnia and Herzegovina, Northern Macedonia, Montenegro, Serbia signed the **Treaty establishing the Transport Community**, adopted by law No. 8/2018, in the field of road, rail, inland and maritime transport, as well as to develop a transport network between the European Union and the Parties to Southeast Europe. Among other reasons, Albania signed this Treaty acknowledging the need for: environment protection, climate change mitigation and sustainable transport development. Albania has committed to implement the relevant environmental part of the Acquis relating to transport, in particular the Strategic Environmental Assessment, Environmental Impact Assessment, nature, water, air quality directives.

The four Action Plans of the Transport Community are an instruction manual on all important steps and milestones, with accompanying timeframes, that will guide us on the path of delivering on concrete aims and ambitions: safer roads; reduced waiting time at border crossings; reliable and modern rail; and roads of the future with integrated green and digital elements. The Road Action Plan aims towards development of climate resilient, intelligent, and resource-efficient TEN-T road network in Western Balkans by incorporating green and smart elements in road investments. Our final aim is to stimulate innovative, low emission and fit for digital age road transport operations.

1.4.2 Explanation of how regional cooperation is considered in the plan

Regional cooperation is facilitated by working group meetings organised by the Energy Community Secretariat. The cross-border cooperation, in terms of electricity exchange and energy security, with North Macedonia is expected to increase. In the NECP is foreseen the construction of the cross-border transmission line 400 kV Bitola-Elbasan which will strengthen the interconnections with the region's electricity network, facilitating the increased export and import capacities of electricity and transits without restriction of the electricity in the region as well as the security of supply in both countries. The planned construction of new RES in Albania is expected to increase the flow of electricity versus North Macedonia, and it is expected to influence positively the price of electricity as well. However, the performance of electricity exchanges with North Macedonia and the rest of the region will remain closely linked to the timely implementation of projects envisaged in the NECP for renewable energy sources. The introduction of the CO_2 tax in 2030 in the countries of the region is expected to further increase this trend.

The cross-border transmission line 400 kV Bitola-Elbasan is seen as part of European East – West electricity transmission corridor between Bulgaria, North Macedonia, Albania, Montenegro and Italy. The interconnection line 400 kV between Montenegro and Italy will facilitate the interaction of energy systems in Balkans and integration of domestic market with the European energy market (the Balkans are directly linked to the EU).

Regarding the cross-border cooperation with Kosovo, the entering into operation the interconnection line 400 kV with Kosovo and the establishment of Power Exchange Operator (ALPEX) will stimulate electricity exchanges between the two countries as well as the security of supply in both countries. The common energy market with Kosovo is expected to reduce the transmission costs between the two countries as well as a better use of their capacities. The Agreement of the Regulatory Block AK defines the common dimension of the capacity of energy reserves within the Block AK (Albania-Kosovo), where according to the calculations, the total savings are estimated up to 4 MEUR/year for both countries, respectively 1,4 MEuro for OST (Albania) and 2,6 MEuro for KOST (Kosovo). The new interconnection line 400 kV between Montenegro and Italy will increase the interaction with the European energy market.

2 NATIONAL TARGETS AND OBJECTIVES

Preliminary note aligning NECP, National Energy Strategy and NDC

Existing national plans that have been considered in the development of this document include the National Energy Strategy and the Nationally Determined Contribution (NDC).

The National Energy Strategy has set a target of 42% in TPES and 15% reduction of energy use compared to the baseline for 2030. The modelling underlying the strategy differs in assumptions concerning GDP growth and population. The RE target of the National Energy Strategy uses efficiencies of 78% and less for renewable power generation, which upscales the renewable share in TPES. In final energy, the NECP also achieves a higher RES share. On sectoral level, the National Energy Strategy does not consider the strong renovation projected by SLED[8] (2015) and adopted by the NECP. It uses biomass pellets for space heating, while the NECP builds on electrification and renovation. In Services, the National Energy Strategy projects a strong increase in energy demand. In transport, it does not consider electrification, while transmission grid losses are underestimated. A large difference is seen in the uptake of natural gas, which is used to meet 20% of final energy demand in 2030 in the National Energy Strategy overall and used in many subsectors, from minor use cases in industry today. Despite these differences, the comparison with the National Energy Strategy proved a very useful and insightful reference to the work underlying the NECP.

The NDC of Albania was submitted in 2015 and covered the energy sector only. In parallel to the elaboration of the first draft of the NECP during the period 2020-2021, the revision of the NDC was undertaken by a separate team, aiming to also cover the full economy. The Governance regulation foresees that the NECP takes precedence over the NDC. The activity underlying the elaboration of the NDC was nonetheless carried out in parallel, despite several attempts to harmonize and align efforts. From the material provided by the NDC team, it was possible to improve the scope of PaMs underlying the non-energy sectors, while the estimates of effects have been elaborated separately. The estimate underlying the LULUCF sector of the NECP have been taken from the NDC. The energy sector estimates of the NDC are reportedly based on the National Energy Strategy, with a limited update to the modelling underlying this document. The differences with this document and the underlying modelling have been discussed above. The current revision of the NECP 2024 aims to provide input for the NDC team and the upcoming NDC revision.

Preliminary note on the National Energy Strategy

The National Energy Strategy (NSE) 2018-2030[9] is an overall energy sector strategy and was thus the main policy document in the energy sector, serving as input to the Dimensions 1-4 of the Energy Union and Albania's NECP. NSE (page 107) estimates that the contribution of public investments is equal to 252 MEur for the period 2018-2030, mainly for supporting awareness campaigns and pilot projects to promote EE in all economic sectors. Private investment and donor financing are estimated with 3,399 MEur for the period 2018-2030.

With regard to the Dimensions Decarbonisation and Energy Efficiency, the targets of the NSE have been adjusted based on the evolving knowledge base.

[8] SLED project - Support for Low Emission Development in Southeast Europe

[9] Approved by DCM No. 480 of 31.7.2018 based on law no. 43/2015, "On power sector".

Cross-dimensional assessment of targets

The following table presents a qualitative analysis how selected and critical targets influence each other. The installation of renewable generation capacity is expected to affect the balancing of the electricity grid but can be managed through dynamic pricing and making use of EV storage capacity.

	Renewable energy	Transport	Internal energy market	Energy security
Renewable energy		Electrification of the transport sector will take up a large share of fluctuating renewable electricity and decarbonise the transport sector	Fluctuating renewable energy sources affect the balancing of the electricity grid	Increase in renewable energy share reduces import dependency
Transport	Targeted increase of electric vehicles (EV)		Making use of EV storage capacities increases flexibility → contributes to balancing the electricity grid	Making use of EV storage capacities increases flexibility and therefore also contributes to energy security
Internal energy market	Dynamic pricing to cope with fluctuating renewable electricity generation	Dynamic pricing of renewable electricity for electric vehicles		A well-functioning electricity market contributes to increasing energy security
Energy security	Increase in renewable energy share reduces import dependency	Reduced import dependency on refined oil products	A well-functioning electricity market contributes to increasing energy security	

Table 11: Cross-dimensional assessment of targets

Comparison of NECP 2030 targets with EnC targets according to Decision 2022/02/MC-EnC[10]

The following table presents a comparison of targets and demonstrates that the national targets are within the range of NECP 2030 WAM results. The outlook 2050 supports that national targets are realistic.

Thus, targets according to NECP 2030 WAM are adopted as NECP 2030 targets.

	EnC Target 2030	**National Target 2030**	NECP 2030 WEM	NECP Outlook 2050 WEM	NECP 2030 WAM	NECP Outlook 2050 WAM
Target for share of energy from renewable sources in gross final consumption of energy	**52%**	**59.4%**	**37.1**	27.6	57.1%	66.7
Target for national energy efficiency contribution:						
Maximum Share of Primary Energy Consumption (Mtoe)	**2.60**	Not addressed in the NECP adopted on December 2021	2.57	4.18	2.43	3.15
Maximum Share of Final Energy Consumption (Mtoe)	**2.40**	**2.34**	2.38	3.86	2.25	2.76
Target for net greenhouse gas emissions[1] compared to 1990 levels in 2030: decrease (%) below 1990 levels	**+53,2%** **12.00 MtCO2e**	**10.21 MtCO2e**	11.72 MtCO2e	14.91 MtCO2e	10.86 MtCO2e	5.29 MtCO2e

Table 12: Comparison of National Targets with NECP Scenarios (WAM and WEM 2030) and EnC Targets

[1]The targets cover all domestic net GHG emissions of the Contracting Parties, including LULUCF emissions and removals

2.1 Dimension Decarbonization

2.1.1 GHG emissions and removals

The elements set out in point (a) (1) of Article 4

Targets based on the NECP Analytical Part B

In terms of GHG emissions, the WEM scenario leads to total emissions of 11.7 Mt CO2eq in 2030, whereas the values in WAM reach 10.8 Mt CO2eq, which corresponds to a reduction of 7.7% relative to WEM values. In comparison with 2020, WAM entails an increase of emissions of 2.8% in 2030, but later decreases in 2040 by -22.6% and further decreases until 2050, reaching -49.9%. The WEM scenario sees an increase of emissions by 11% in 2030 compared to 2020 and an increase by 41.2% in 2050.

The analysis shows that highest emissions are generated by the sectors Demand and Non-Energy, and within them, Industry and Transport, and IPPU (Industrial Processes and Product Use) and Agriculture

[10] https://www.energy-community.org/implementation/package/CEP.html

(mainly Enteric Fermentation CH4) are the main emitters of greenhouse gases, and therefore require special attention.

Sector	WEM 2030	**WAM 2030**
Demand	4,860.2	**4,192.7**
Transformation	167.1	**159.0**
Non-Energy	6,692.5	**6,506.3**
Total	11,719.8	**10,858.0**

Table 13: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2030 for the Whole economy

Sector	WEM 2030	**WAM 2030**
Residential	310.2	**291.6**
Services	281.9	**247.0**
Industry	1,415.0	**1,233.6**
Transport	2,457.4	**2,024.9**
Agriculture Forestry	221.1	**221.1**
Fisheries	174.5	**174.5**
Total	4,860.2	**4,192.7**

Table 14: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2030 for the specific Demand sectors

Sector	WEM 2030	**WAM 2030**
IPPU (Industrial Processes and Product Use)	1,910.3	**2,806.3**
Agriculture (mainly Enteric Fermentation CH4)	2,286.4	**2,225.9**
LULUCF	1,457.9	**1,515.0**
Waste	1,037.8	**598.2**
Total	6,692.5	**7,145.5**

Table 15: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2030 for the specific Non-Energy sectors

Outlook up to 2050

The outlook to 2050 shows that additional policies and measures are appropriate to significantly reduce GHG emissions in the critical sectors, with the exception of agriculture (mainly enteric fermentation CH4), where action is still needed to achieve carbon neutrality.

Sector	WEM 2050	**WAM 2050**
Demand	7,284.6	**2,221.5**
Transformation	484.1	**770.0**
Non Energy	7,145.5	**2,303.8**
Total	14,914.1	**5,295.2**

Table 16: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2050 for the Whole economy

Sector	WEM 2050	**WAM 2050**
Residential	328.6	**123.4**
Services	447.9	**306.6**
Industry	2,253.0	**776.7**
Transport	3,453.4	**734.8**
Agriculture Forestry	360.6	**111.4**
Fisheries	441.1	**168.7**
Total	7,284.6	**2,221.5**

Table 17: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2050 for the specific Demand sectors

Sector	WEM 2050	**WAM 2050**
IPPU (Industrial Processes and Product Use)	2,806.3	**830.8**
Agriculture (mainly Enteric Fermentation CH4)	2,225.9	**1,533.7**
LULUCF	1,515.0	**-658.9**
Waste	598.2	**598.2**
Total	7,145.5	**2,303.8**

Table 18: GHG emissions [kt CO2eq] as projected with existing measures and with additional measures for 2050 for the specific Non-Energy sectors

2.1.2 Renewable Energy

The elements set out in point (a) (2) of Article 4

Targets based on the NECP Analytical Part B

Related to Total primary energy supply (TPES)

In the WEM scenario, the renewable share in TPES (the total amount of primary energy that a country has at their disposal) changes from 29.2% in 2020 to 34.8% in 2030. In the WAM scenario, the renewable energy share in TPES reaches 58.4%. In case of the WAM RE scenario which considers only domestic electricity demand (WAM RE to meet demand), the share reaches 39.6%.

Sector	WEM 2030	WAM RE 2030	**WAM 2030**
RES	34.8%	39.6%	**58.4%**

Table 19: Total renewable share (%) in 2030 in TPES for different scenarios

Related to final energy demand

In overall terms, the additional measures increase the share of renewables in final energy from 37.1% (WEM scenario) in 2030 to 57.1% (WAM scenario). Historic values of 2020 reach 44%, so the WAM scenario leads to an increase by 13%-points in 2030. An increase remains also if only domestic electricity demand is considered (WAM RE to meet demand), in which case 49.4% overall RES share is achieved.

The table below shows RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) with existing and additional measures in 2030.

Sector	WEM 2030	WAM RE 2030	**WAM 2030**
RES	37.1	49.4	**57.1**
RES T	17.8	34.8	**34.8**
RES E	98.3	121.2	**145.8**
RES HC	18.1	22.6	**22.6**

Table 20: Renewable shares (%) in 2030 in final energy demand

(* Values over 100% are due to electricity exports.)

In terms of renewable energy supply, hydropower accounts for the lion's share, followed at some distance by solar energy and wood, with efforts being made to increase the share of solar energy.

Chapter 5 describes the new generation capacity and the expected commissioning over the years to demonstrate that the renewable energy targets can be met.

Estimated trajectories for renewable energy

Estimated trajectories by renewable energy technology are available in Part B of the NECP.

Estimated trajectories on bioenergy demand (disaggregated) are available in Part B of the NECP.

Estimated trajectories on RES shares in the transport sector, energy sector, and in heating and cooling are available in Part B of the NECP.

The table below shows the total renewable share in TPES for different scenarios.

Sector	WEM 2050	WAM RE 2050	**WAM 2050**
RES	26.8%	63.1%	**81.2%**

Table 21: Total renewable share (%) in 2050 in TPES for different scenarios

The table below shows RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) with existing and additional measures in 2050.

Sector	WEM 2050	WAM RE 2050	**WAM 2050**
RES	27.6	66.7	**88.1**
RES T	44.8	197.3	**222.7**
RES E	58.0	86.1	**129.6**
RES HC	15.7	45.9	**45.9**

Table 22: Renewable shares (%) in 2050 in final energy demand

(* Values over 100% are due to electricity exports.)

2.2 Dimension Energy Efficiency

2.2.1 The elements set out in point (b) of Article 4

(1) the indicative national energy efficiency contribution to achieving the Union's energy efficiency targets of at least 32,5 % in 2030 as referred to in Article 1(1) and Article 3(5) of Directive 2012/27/EU, based on either primary or final energy consumption, primary or final energy savings, or energy intensity.

Targets based on the NECP Analytical Part B

Primary energy supply

While in the WEM scenario, net primary energy consumption increases (compared to 2020) by 21.3% until 2030 and 97.3% until 2050, it increases only by 14.8% until 2030 and 48.5% until 2050 in the WAM scenario. Comparatively, the consumption in the WAM scenario decreases compared to the WEM scenario by 6.4 % in 2030 and 48.8% in 2050.

	WEM 2030	WEM 2050	**WAM 2030**	WAM 2050
Total [ktoe]	2,570.5	4,183.3	**2,435.0**	3,147.3
Total [Mtoe]	2.57	4.18	**2.43**	3.15

Table 23: Primary energy supply as projected up to the year 2030 and 2050 for WEM and WAM

Final energy consumption

While in the WEM scenario, final energy consumption increases (compared to 2020) by 24.4% until 2030, 55.3% until 2040 and 101% in 2050, it increases only by 17.4% until 2030, 30% until 2040 and 43.8% in 2050 in the WAM scenario. Comparatively, the final energy consumption in the WAM scenario decreases compared to the WEM scenario by 6.9% in 2030, 25.3% in 2040 and 57.4% in 2050.

Sector	WEM 2030	WEM 2050	**WAM 2030**	WAM 2050
Residential	481.5	579.2	**453.4**	483.4
Services	288.4	458.2	**268.4**	353.1
Industry	551.6	1,036.0	**540.7**	956.1
Transport	842.1	1,374.6	**769.7**	670.0
Agriculture Forestry	96.7	157.6	**96.7**	104.6
Fisheries	60.4	152.7	**60.4**	101.3
Non energy	62.4	97.2	**61.4**	86.9
Total [ktoe]	2,383.0	3,855.4	**2,250.6**	2,755.3
Total [Mtoe]	2.38	3.86	**2.25**	2.76

Table 24: Final energy consumption as projected with existing and additional measures for different scenarios

(2) the cumulative amount of end-use energy savings to be achieved over the period 2021-2030 under point (b) of Article 7(1) on the energy saving obligations pursuant to Directive 2012/27/EU;

Targets to 2030 (nor to 2020) according to Article 7 (1) (b) – Obligation schemes are not available yet because the 2nd and 3rd NEEAP did not stipulate the proposed approach to achieving Article 7 targets. However, an amendment of the EE Law 2021 covers this provision.

PaM EE-O1 “Energy efficiency obligation scheme and alternative measures for Albania” has been introduced to cover this aspect.

(3) Strategy for the renovation of the national stock of residential and non-residential buildings, both public and private, the roadmap with domestically established measurable progress indicators, an evidence-based estimate of expected energy savings and wider benefits, and the contributions to the Union's energy efficiency targets pursuant to Directive 2012/27/EU in accordance with Article 2a of Directive 2010/31/EU;

PaM EE-L2 "Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024" has been introduced to cover this aspect.

(4) the total floor area to be renovated or equivalent annual energy savings to be achieved from 2021 to 2030 under Article 5 of Directive 2012/27/EU on the exemplary role of public bodies' buildings;

PaM EE-L2 "Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024" has been introduced to cover this aspect.

2.2.2 Long-term renovation strategy addressing the national building stock

PaM EE-L2 "Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024" has been introduced to cover this aspect.

2.2.3 Other national objectives and long-term strategies

Heating and cooling, Transport sector: There are no other national objectives or long-term strategies.

2.3 Dimension Energy Security

2.3.1 The elements set out in point (c) of Article 4

The objective of energy security is to ensure a lasting, secure and quality supply of all energy-generating and supply systems. Energy security means that the energy has to be available, accessible, affordable and acceptable in proportion with the development of the country.

Albania expects to become a net exporter of electricity by 2030. This is a cornerstone of energy security.

Albania has made considerable efforts in terms of energy security such as:

- Installation of Thermal Boats (emergency infrastructure) (with HFO and to be transformed to NG)
- Expanding renewable energy generation
- Rehabilitation and expansion of power plants run on natural gas
- 3 months reserves of oil and petroleum products (prerequisite from Energy Community)

The majority of electricity is generated by hydropower, which is highly vulnerable to dry years and the effects of climate change. Natural gas has an important role to play in the energy transition towards carbon neutrality, in particular in offsetting the negative effects of dry years, but also the intermittent nature of solar and wind generation. It is not yet clear what the exact amount of natural gas in the mix will be and how the path to zero carbon will evolve. Natural gas could be used mainly in power plants, industry and heating.

The integration of the Albanian electricity market with Kosovo through the coupling of the day-ahead markets also increases energy security, as Albania has almost 100% hydro capacity (sensitive to changing hydrological conditions) and Kosovo has almost 100% thermal capacity.

There are national energy security objectives defined by the approved National Energy Strategy 2018–2030 which are relevant in the context of the NECP:

- Increasing and further development of national primary energy sources in a sustainable and competitive way. In order to achieve this objective, it is necessary to introduce integral and systematic planning of supply of all energy-generating products and forms of energy.
- Development of diverse supply sources through new investments, increasing regional cooperation and integration and interconnection with regional and European electricity and natural gas networks in accordance with the *Acquis* of the Energy Community Treaty.
- Enhancing security of energy transmission and supply through diversification of supply routes of energy and improving the security and the reliability of them through cost-effectiveness investments. Increase the security of energy supply with affordable costs for Albanian citizens and the economy.
- Integration of the Albanian electricity and natural gas market with Kosovo, the region and European markets. Couple the electricity market in line with the commitments made under the so-called Berlin process.
- The security of energy supply shall be based on well-functioning energy competitive markets that offers the right signals for the production and consumption of electricity and gas and a clear long-term energy policy that encourages investments.
- Increasing gas, oil and energy storage capacity in the energy system in accordance with Directive 2009/119/EC of 14 September 2009 imposing an obligation to maintain minimum stocks of products.
- The achievement of country objectives for renewable energy sources, energy efficiency, reduction of energy intensity of GDP and development of cost-effective policies and strategies to increase energy performance in public and residential buildings is expected to have a stabilizing effect on security of supply.
- Development of a policy framework for energy (including energy efficiency for sustainable transport) in transport based on the Albania Sector Transport Strategy, and the introduction of new technologies in all its sectors is also expected to have a stabilizing effect on security of supply by reducing the amount of oil and petrol imports.
- The road transport shall be shifted to other transport modalities, like the rail or water transport. The fulfilment of this objective will contribute to reduce fuel consumption.
- Renovation of oil and petroleum industry and supply infrastructure, quality control systems and the introduction of new technologies to the oil sector.
- Planning the exploration of the country's oil reserves and creation of a national security/reserve stock.

2.3.2 National objectives with regard to diversification and resilience

The national Energy Strategy 2018-2030 foresees the stimulation of appropriate diversification of energy production through new investments, increasing of regional cooperation and integration and interconnection with regional and European electricity and natural gas networks in accordance with the *Acquis* of the Energy Community Treaty. In the power sector, Albania is almost entirely dependent on hydropower. Increasing the share of RES other than hydropower in the structure of used energy-generating products will contribute to reduce dependence on water resources.

The following actions are undertaken to increase the share of RES in the energy mix: Feed-in-Tariffs for small producers (up to 2 MW or 3 MW for wind generators), the establishment of a self-consumer framework, large tenders for additional capacity of wind and PV. It should also be noted that some large-

scale projects without government support are likely to materialize with the creation of the power exchange and the high prices of electricity in international markets.

The construction of the TAP gas pipeline and the related objective of creating a regional gas market is expected to contribute to the diversification of energy sources. Supply with gas of the existing thermal power station in Vlora shall contribute to increasing energy diversity.

Biofuel targets of 10% as share of biofuels versus total fuel consumption in the transport sector in 2030 is expected also to have an effect in diversification of energy sources in the transport sector.

2.3.3 National objectives with regard to reducing energy import dependency

The main objectives are as follows:

- to reduce import dependency regarding electricity
- to reduce import dependency regarding oil products

Power sector:

Expansion of new generation capacity in the future: Skavica project, some new large HPP as Devolli River Cascade, Fan River Cascade, some small power plants which are under construction, Photovoltaics and Wind farms, etc. also shall also contribute to reducing energy import dependency.

Gas sector:

Creation and functioning of the gas market and creating a favorable investment climate for investments in national gas transmission and distribution system and integration into the regional and international networks shall contribute on reducing energy import dependency and increasing the flexibility of the national energy systems. Supply with gas of the existing thermal power station in Vlora and the planned TPP in Korça shall contribute to the reduction of electricity imports and increase energy diversity.

Oil sector:

Albania has become highly dependent of imported oil products due to declining oil production in combination with a sharply growing demand for gasoline, diesel and heavy fuel oil. The transport sector was the greatest energy consumer, with about 40% of the final total consumption (2013). Albania is rated as one of Europe's richest countries in onshore hydrocarbon reserves and it is using new technologies to exploit the domestic sources for production of crude oil.

The objective to shift the existing road transport to other transport modalities, like the rail or water transport will contribute to reduce fuel consumption.

The goal for the share of the bio-fuels vs. total fuel consumption in transport sector 10% in 2020, 10% in 2025 and 10% in 2030 as compared to 3.55% in 2015 will also contribute to reduce fossil fuel consumption in transport.

2.3.4 National objectives with regard to increasing flexibility

Increasing of renewable energy production, natural gas penetration, development of diverse supply sources through new investments, increasing regional cooperation and integration and interconnection with regional and European electricity and natural gas networks, enhancing security of energy transmission and supply through diversification of supply routes of energy and improving the security and the reliability of them through cost-effective investments shall increase the flexibility of the national energy system.

Expansion of new generation capacity is planned in the future: some new large HPP as Devolli River Cascade, Fan River Cascade, some small power plants which are under construction, two new thermal power stations in Korça, Kuçova, etc., shall also contribute to increasing the flexibility of the national energy system.

2.4 Dimension Internal Energy Market

The objectives and targets for the internal energy market dimension are linked to other relevant dimensions, namely energy security and decarbonisation. The overall objective is that a well-functioning energy market, based largely on renewable energy sources, contributes not only to the security of energy supply but also to the decarbonisation of the economy.

The objective of internal energy market is to harmonize and liberalize the country's internal energy market, to address market access, transparency and regulation, consumer protection, supporting interconnection, and adequate levels of supply.

The goal is to build a more competitive, customer-centered, flexible and non-discriminatory electricity market with market-based supply prices. In so doing, they strengthen and expand the rights of individual customers and energy communities, address energy poverty, clarify the roles and responsibilities of market participants and regulators and address the security of the supply of electricity, gas and oil, as well as the development of regional and European networks for transporting electricity and gas.

To achieve this goal, the Albanian Government has approved the National Strategy of Energy 2018–2030 as an overall energy sector strategy in which objectives connected with the dimension of the Internal energy market are:

1.- Opening of the electricity market 100% in 2025

2.- electricity bill collection rates of 92% in 2020, 95% in 2025 and 98% in 2030 as compared to 90% in 2018

3.- Development of diverse supply sources, increasing regional cooperation and integration and interconnection with regional and European electricity and natural gas networks in accordance with the *Acquis* of the Energy Community Treaty.

4.- Integration of the Albanian electricity and natural gas market with Kosovo, the region and European markets. Couple the electricity market in line with the commitments made under the so-called Berlin process.

5.- Well-functioning energy competitive markets that offer the right signals for the production and consumption of electricity and gas.

6.- Increasing gas, oil and energy storage capacity in the energy system in accordance with Directive 2009/119/EC of 14 September 2009 imposing an obligation to maintain minimum stocks of products.

7.- Development of plans for the creation of the Albanian gas market and its regional integration, as well as for the sale, transmission, distribution and retail sale of natural gas by TAP and other gas sources. Implementation of market reforms necessary to comply with the *Acquis* of the Energy Community;

8.- Consolidation and further strengthening of ALBGAZ s.a., on the role of the combined gas transmission and distribution operator;

Natural gas objectives connecting with Internal energy market as defined in Master Plan of Albania's natural gas sector for the period 2020-2040 are:

- Harmonization of national legislation such as tariff systems, network codes, supply rules, and market code in accordance with the *Acquis Communitaire*.
- Creation and functioning of the gas market in accordance with EU standards, as defined in the Third EU Energy Package;
- Building a database about transmission and distribution networks, as well as the underground gas storage or GNL terminals of the market operators, which will enable comprehensive monitoring of all gas sector activities.

2.4.1 Electricity interconnectivity

Integration into the regional and EU energy markets is a strategic objective of the Albanian Government to meet its growing demand for energy, diversity of energy sources, efficiency and flexibility of the national energy system. To achieve this objective, Albania has to invest in electrical energy interconnectivity infrastructure.

Albania has interconnectivity infrastructure with Kosovo, Montenegro and Greece through six Interconnection lines:

- 400 kV line Zemblak - Kardia (Greece)
- 400 kV line Tirana 2 - Podgorica (Montenegro)
- 400 kV line Tirana2 - Kosovo B (Kosovo)
- 220 kV line Koplik - Podgorica (Montenegro)
- 220 kV line Fierzë - Prishtina (Kosovo)
- 150 kV Bistrica 1 - Igumenica (Greece).

The analysis in chapter 4 shows that Albania's water-based electricity system is exposed to shortages in dry years. This means that an increase of exchange capacity with the neighbor systems is expected in the near future and the need for investment in strengthening and development of the interconnection network is evident. The development of new projects will be based on technical and economic considerations and on cost-benefit analysis in accordance with the ENTSO-E methodology.

The strengthening and development of the interconnection networks will create more favorable technical conditions to develop an integrated market of electricity in the region and help the country's energy sector to continue its transformation towards a more competitive marketplace, while aligning with the Third Energy Package initiative and objectives. As part of the Third Energy Package emphasis, cross-border market integration is a crucial step towards a pan-European regional energy market.

In the National Strategy of Energy 2018–2030, it is foreseen:

- Aligning the electricity sector's legal and regulatory framework with the EU *Acquis* and meeting the obligations of the Third Energy Package.
- Construction of a new 400 kV interconnection line Fier – Elbasan – Manastir (North Macedonia). The project includes construction of a new 400 kV transmission line Elbasan - Ohrid – Manastir, 151 km (56 km in Albania territory), extension of Elbasan2 Substation and installation of new 120 MVAr shunt reactor, construction of 68 km new 400kV line from Elbasan2- Fier, extension of Fier Substation, with 1 new AT-400 MVA.

In the Transmission System Operator development plan, it is foreseen also the development of the existing 400kV network by closing the 400kV ring between Albania – North Macedonia – Greece, which shall have the following benefits:

- improving network capacity to facilitate anticipated load and transit growth, new generation connections, in the context of improving transmission capacity in Albania and North Macedonia, and in the Balkans region generally,
- improvement of the reliability of the regional network, the overall security of supply, and flexibility in the operational of the power system,
- decrease of the technical losses in the transmission system,
- elimination of overload in the national 220 kV ring.
- improving the quality of electricity supply (normalize the voltage levels, stabilize the load flow and the frequency fluctuations, etc.),
- supporting the potential to develop the regional energy market in Southeast Europe and creating trading opportunities with Bulgaria and Italy,
- mutual support between North Macedonia and Albania because of complimentarily of generation types (Albania – hydro, North Macedonia – thermal),

- reducing the cost of providing reserve capacity and providing mutual emergency support.

Third party access to the transmission system and provisions on congestion management on cross-border lines comply with the *Acquis*. Cross-border transmission capacities on the borders with Montenegro and Greece are allocated via the regionally coordinated platform of the South-East Europe Coordinated Auction Office in Montenegro (SEE CAO).

Albanian Transmission System Operator and Kosovo's power transmission system operator KOSTT have signed an agreement to set up a common energy market as two neighboring countries. The agreement is in line with the new ENTSO-E regulations aimed at promoting the co-operation of the TSOs in terms of safe operations of the energy systems and the minimization of costs.

The results of simulating the Albania-Kosovo power market show that there is a significant potential for better utilization of cross-border transmission capacity and increase the social welfare through market optimization of operation of the thermal power resources in Kosovo and hydro resources in Albania (specifically, the Drin River Cascade), as well as exchanging balancing reserve requirements.

2.4.2 Energy transmission infrastructure

Electricity transmission infrastructure

Key targets for the electricity transmission infrastructure are the following ones:

- Achievement of the reduction of technical losses in electricity transmission network by 1.7% in 2030
- Improve the reliability of the transmission system and the security of electricity supply
- Improve the reliability of the communication network and remote monitoring and control system to increase the security of electricity supply
- Develop the network to respond to increases in demand for transmission capacity from industrial consumer and/or hydro generation
- Accelerated integration of variable RES into the power system, and increased availability of regulation reserves to balance their production
- Timely realization of investment plans, in particular capital investments that enable the integration of RES into the power system
- Supporting market transactions in the territory of the state and the region so that the transmission network does not represent a constraint on competitiveness
- Revitalization and replacement of old grid units
- Increasing the transmission capacity of individual lines planned for revitalization
- Application of new technologies in transmission, if they are technically and economically justified

Due to its climate characteristics, Albania, is particularly suitable for the development of wind and solar power plants, and there is a strong investor interest in the construction of new facilities. The existing transmission grid and interconnection capacity to neighbouring countries have to be developed to enable the integration of the anticipated new RES generation facilities.

Main infrastructure projects to achieve 2030 targets: see chapter 1.2.2 Dimension Energy Market.

Key goals for the gas transmission infrastructure

The gas master plan is to be implemented to develop a sustainable natural gas system that enables a balanced contribution to the energy system, ensuring gas supply through competition and environmental protection. A completely new gas transmission and distribution system is needed. The development of the gas storage system is also expected.

Main infrastructure projects to achieve 2030 targets: see chapter 1.2.2 Dimension Energy Market.

2.4.3 Market integration

Integration into the regional and EU energy markets is one of the main objectives of the Albanian Energy Sector Strategy which underline that energy security has to be achieved based on energy sources diversification, solidarity and trust.

The principles guiding the development of the Albanian Energy Sector Strategy are fully in line with the principles of the Second National Strategy for Development and Integration.

For items concerning market integration the objectives are:

- Full opening of the electricity market (100%) in 2025
- Further diversification of energy supply sources and interconnection with the regional and European electricity and gas networks
- Establish a competitive and organized market that provides correct signals for production and consumption of electricity and natural gas, considering the specific influence of climate changes on the domestic power production
- Couple the electricity market in line with the commitments made under the so-called Berlin process

2.4.4 Energy poverty

Energy poverty is not yet clearly defined and systematically monitored in Albania.[11] Also, there are no specific policies to address the energy poverty. The only instruments being applied consist of compensation schemes in form of cash benefits being applied for the households in need. The existing legal framework consists of:

- DCM No. 8 of 14.1.2015 "On the protection of the layers (categories) in need, for the effect of removing the band of electricity consumption up to 300 kwh / month" as well as the instruction in its implementation no.1, dated 02.02 .2015, as amended by the Instruction no.15 of 08.04.2015;
- DCM No. 495 of 29.6.2015 "On some changes and additions to DCM.8 of 14.01.2015, "On the protection of layers in need, for the effect of removing the bandage of consumption of electricity up to 300 kwh / month ".

Further, the Power Sector Act 7/2018, Art. 95, introduces definition of *vulnerable consumer*. It defines that the Albanian Energy Regulatory Authority (ERE) is responsible for protecting vulnerable consumers (Art.18 (e)). Also, this paragraphs states that the Ministry responsible of social affairs, in cooperation with the Ministry responsible of the energy, the Ministry of Finance, in consultation with ERE and including field stakeholders, will *draft* criteria and the procedures for those who qualify as gaining vulnerable customers status. The approach for handling the vulnerable consumers is to be approved upon CoM decision.

Thus, the respective PaM has been integrated in the NECP: (EM-P1) "Eradicate energy poverty"

2.5 Dimension Research, Innovation and Competitiveness

It is the Government's objective to transform Albania towards a more competitive, more innovation-driven and knowledge-based economy. To this end, specific PaMs have been integrated in the NECP. Overall, the goal is that public annual expenditures for scientific research and innovation in total reach 2% of GDP per year and that this level of expenditure is to be maintained in the future.

[11] Energy Poverty in South East Europe – Surviving the Cold. South East Europe Sustainable Energy Policy programme (SEE SEP), 2016

3 POLICIES AND MEASURES

Policies and Measures (PaMs) for Scenario with Existing PaMs and Scenario with Additional PaMs

Policies and Measures presented below are identified based on the definitions given in Article 2 Governance Regulation:

- **'policies and measures'** means all instruments which contribute to meeting the objectives of the integrated national energy and climate plans […]
- **'existing policies and measures'** means implemented policies and measures and adopted policies and measures;
    - 'implemented policies and measures' means policies and measures for which one or more of the following applies at the date of submission of the integrated national energy and climate plan or of the integrated national energy and climate progress report: directly applicable Union or national law is in force, one or more voluntary agreements have been established, financial resources have been allocated, human resources have been mobilised;
    - 'adopted policies and measures' means policies and measures for which an official government decision has been made by the date of submission of the integrated national energy and climate plan or of the integrated national energy and climate progress report and there is a clear commitment to proceed with implementation;
- **'planned policies and measures'** means options that are under discussion and that have a realistic chance of being adopted and implemented after the date of submission of the integrated national energy and climate plan or of the integrated national energy and climate progress report;

PaMs are allocated to Scenarios with Existing PaMs (WEM Scenario) and with Additional PaMs (WAM Scenario), the latter referring to planned policies and measures and new policies and measures with a realistic chance of being implemented. Scenario modelling is documented in chapter 4.

Analysis resulting in new PaMs

The analysis of conflicting goals and other challenges identified during the work led to the development of new PaMs aiming at addressing these issues. New PaMs with a realistic chance of implementation are considered in the WAM scenario.

Alignment of NECP PaMs and NDC PaMs

Great efforts were made to align the preparation of the NECP and the NDC. Although early coordination meetings were held, in practice there were significant challenges due to the different teams and timelines applied to the NECP and NDC. Data availability and data transparency posed another major challenge. Nevertheless, with the creation of the Draft NECP, it has been possible to create a transparent database for future updates.

Sources of PaMs

Policies and measures were compiled based on the policies and strategies presented in chapter 1, based on studies carried out such as the SLED study, and based on good practice examples.

Description of PaMs

The table below shows the overview of key policies and measures affecting the national climate target to 2030 and beyond.

The detailed descriptions are available in the subchapters by Dimension.

Among other details, the descriptions contain budget estimates that are intended to provide orientation for the detailed planning of the individual PaMs. In analogy to transaction costs in economic theory, the so-called up-front transaction costs are also determined, i.e. strategy development studies, technical and financial feasibility studies, staff training, development of guidelines, etc., which are necessary to make an investment successful in terms of achieving the objectives of a policy and measure. It is clear that the actual sums depend on the level of detail and the experts involved (national/international), and also on existing resources that can be used, or not, e.g. guidelines for energy efficient public procurement.

The description also contains a section on the implementing entity and the monitoring entity. If these are not identical, the monitoring body is indicated in brackets.

Dimension	Nr.	Code of PaM	PaM name	Type of PaM	Allocated to Scenario
Decarbonisation / GHG emissions & removals	1	G-T1	Improvement of intra-urban/intercity bus network lines	Regulatory	WAM
	2	G-T2	Integrated freight management	Regulatory	WAM
	3	G-T3	Efficiency-based car fees and incentives for fleet renewal	Regulatory; Fiscal	WEM
	4	G-T4	Clean vehicles in public procurement	Regulatory	WAM
	5	G-T5	Green hydrogen in heavy-duty transport	Technical; Financial	WAM
	6	G-B1	Policies to support RES in Heating and Cooling Sector	Regulatory; Financial; Educational	WEM
	7	G-I1	Implementation of the ETS in Albania	Regulatory; Educational	WAM
	8	G-I2	Establishment of a mechanism for implementation of MMR	Regulatory	WEM
	9	G-I3	Reduction of GHG emissions from cement production	Technical	WAM
	10	G-I4	Reduction of Fluorinated Gases (F-Gases) Emissions	Regulatory; Financial	WAM
	11	G-I5	Green hydrogen for the ferrochrome and steel producing industry	Technical; Financial	WAM
	12	G-I6	Green hydrogen strategy	Promotional; Regulatory	WAM
	13	G-A1	Promotion of organic agriculture	Regulatory; Financial; Educational	WEM
	14	G-A2	Improve the Agricultural Monitoring in Albania	Regulatory	WEM
	15	G-A3	Regulating the Agricultural burning practices	Regulatory; Educational	WEM

	16	G-W1	Emission reduction from waste	Regulatory; Financial	WEM
	17	G-W2	Use of Waste Incineration Plants for the waste integrated management process in Albania	Regulatory; Financial	WEM
	18	G-W3	Increase of Wastewater Treatment Plants and their related coverage	Regulatory; Financial	WEM
	19	G-W4	Waste and wastewater related capacity building and organisational development for municipalities	Educational	WEM
	20	G-LF1	Increasing the natural carbon sink capacity of forestry and pastures	Regulatory; Financial; Promotional	WAM
	21	G-LF2	Environmentally friendly forest management	Regulatory; Financial	WAM
Renewable Energies	22	R-E1	Mechanism of Feed-in-Tariff for small renewable capacity	Regulatory; Financial	WEM & WAM
	23	R-E2	Auctions for new renewable capacity (wind and solar) and storage; Approval of the 3 year auction plan	Regulatory; Financial	WEM & WAM
	24	R-E3	Energy spatial planning for increasing the share of renewable energy and improve energy efficiency	Regulatory; Technical	WAM
	25	R-E4	Mechanism of net metering for installations up to 500 kW	Regulatory	WEM
	26	R-E5	Robust power grid to accommodate increased renewable energy capacity, investment in renewable energy capacity in the free market	Financial	WEM
	27	R-E6	Facilitate regulatory and physical connection to the electricity grid	Regulatory	WEM
	28	R-E7	Demand side management and electricity storage systems for power grid flexibility	Regulatory	WAM
	29	R-E8	Metering strategy and digitalization of the power sector	Regulatory	WEM
	30	R-E9	Supporting the formation of renewable energy communities	Regulatory; Organisational, Promotional	WAM
	31	R-E10	Participation in a regional system for guarantee of origin (GO)	Regulatory; Organisational	WAM
	32	R-E11	Heat maps	Regulatory; Information	WAM
	33	R-T1	Electrification of the transport sector	Regulatory	WAM
	34	R-T2	Sustainable / Advanced biofuels	Regulatory; Fiscal	WAM
	35	R-T3	Installation of charging stations for Electric Vehicle and installation of photovoltaic panels	Financial	WAM
	36	R-I1	Supporting the deployment of small-scale renewable energy applications in the non-food industrial sector	Investment, Financial; Information; Educational	WAM
	37	R-W1	Assessment of energy use and opportunities for implementation of renewable energy sources in the water sector	Investment, Financial	WAM
Energy Efficienc	38	EE-O1	Energy efficiency obligation scheme and alternative measures for Albania	Regulatory	WAM
	39	EE-I1	Inspection of Building Technical Systems	Regulatory; Technical	WAM

	40	EE-L1	Implementation of the Minimum Energy Performance Requirements in buildings	Regulatory	WAM
	41	EE-L2	Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024	Regulatory; Financial; Information	WAM
	42	EE-L3	Minimum energy performance standards for non-residential buildings and trajectories for progressive renovation of the residential building stock	Regulatory; Technical	WAM
	43	EE-L4	Retrofitting of the existing central governmental building *(excluding other public buildings owned by municipalities, etc.)*	Investment; Regulatory	WAM
	44	EE-L5	Retrofitting of the public building stock *(all public buildings except central government buildings)*	Investment; Regulatory	WAM
	45	EE-L6	Financial support schemes for improving energy efficiency in buildings (private sector)	Financial; Fiscal	WAM
	46	EE-L7	Energy auditing and retrofitting the public building stock	Financial	WAM
	47	EE-L8	Energy Efficiency Rehabilitation Programme Student City I- Tirana, Albania - pilot project	Financial	WAM
	48	EE-S1	Uptake of ESCO models	Regulatory; Financial	WAM
	49	EE-P1	Energy efficiency measures related to purchasing by public authorities	Regulatory	WAM
	50	EE-P2	Municipalities Energy Efficiency Action Plans, implementation, and reporting	Regulatory, Educational	WEM
	51	EE-P3	Establishment of integrated municipal / regional development plans which are linked with the NECP	Regulatory; Technical	WAM
	52	EE-E1	Energy audits for large energy consumers with focus on industrial activities	Regulatory; Organizational	WEM
	53	EE-E2	Energy management systems for SMEs	Regulatory; Organizational; Promotional	WAM
	54	EE-C1	Introducing the Energy labelling and Eco-design requirements	Regulatory; Informational	WAM
	55	EE-T1	Energy labelling of new cars	Information; Educational	WAM
	56	EE-T2	Increase the share of Electrical Vehicles in the national car fleet.	Regulatory; Financial; Fiscal	WAM
	57	EE-T3	Support mechanisms for EE and clean vehicles	Regulatory; Financial; Fiscal	WEM
	58	EE-T4	Increasing the share of public transport for passengers and freight (roads, railways and waterways)	Regulatory	WEM
	59	EE-T5	Improvement of railway transport network, linking Albania with the international railway transport network	Regulatory; Financial	WEM & WAM
Energy Security	60	ES-P1	Gas supply for Vlora Thermal Power Plant	Regulatory	WEM
	61	ES-P2	Construction of new state owned power plants – Skavica, Vau Dejës, Belsh PV	Regulatory; Financial	WEM & WAM
	62	ES-O1	Fully functional legal framework for a reliable and safe gas supply to customers	Regulatory	WAM
	63	ES-O2	Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan	Regulatory; Financial	WAM

	64	ES-O3	Linking Albania with the international gas network	Regulatory	WEM
	65	ES-O4	Hydrocarbons exploration, production and processing	Regulatory; Financial	WEM
	66	ES-O5	Emergency plan for natural gas	Regulatory; Financial	WEM
	67	ES-O6	Approval of Law "On the establishment, maintenance and management of the minimum reserves of crude oil security and its products"	Regulatory; Financial	WEM
	68	ES-R1	Ionian Adriatic Pipeline & Albania Kosovo Gas Pipeline	Regulatory; Financial	WEM
Energy Market	69	EM-I1	Electricity interconnectors	Regulatory; Financial	WEM
	70	EM-I2	Electric Energy Sector Reform	Regulatory	WEM
	71	EM-I3	Establish RES operator and transform Feed-in-Tariffs	Regulatory	WAM
	72	EM-P1	Eradicate energy poverty	Regulatory	WAM
Research, Innovation and Competitiveness	73	RIC-E1	Improvement of the regional and international collaboration in the scientific research related to the energy sector	Regulatory; Informational; Educational; Financial	WEM
	74	RIC-E2	National program of R&D	Financial	WEM
	75	RIC-E3	Business Investment Development Strategy (BIDS)	Regulatory	WAM
	76	RIC-E4	Demonstrating Innovation and Competitiveness	Financial	WAM
	77	RIC-E5	Supporting innovative SMEs by means of tax relief (RIC-E5)	Fiscal	WAM
	78	RIC-E6	Formation of clusters to support innovation and competitiveness	Financial	WAM
	79	RIC-E7	Innovation and excellence in the public administration	Financial	WAM

Table 25: Overview table of key policies affecting the national climate target to 2030

3.1 Dimension Decarbonisation

3.1.1 Overarching legal framework

The main legal acts (including strategies and plans) related to this dimension are listed below:

1. **Law No. 43/2015 of 30.4.2015 "on Power Sector", amended**
2. **Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"**
3. **Law No. 155/2020, of 17.12.2020 "on Climate Change"**
4. **Law No.2/2023 "On fluorinated Greenhouse Gases"**
5. **Law No. 57/2020 of 30.4.2020 "on Forests"**
6. **Law No. 9957 of 28.7.2008 "on National Taxes" amended**
7. **Albanian Intended Nationally Determined Contribution (INDC)**
8. **DCM No. 418 of 20.5.2020 "on the Approval of National Integrated Waste Management Strategy and the Action Plan for Albania for the period 2020–2035"**
9. **DCM No. 580 of 28.8.2019 "on the Approval of the National Consolidated Action Plan for the RES 2019-2020"**
10. **DCM No. 466 of 3.7.2019 "on the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change"**
11. **DCM No. 814 of 31.12.2018 "on the Approval of Forestry Policy Document for Albania for the period 2019–2030"**
12. **DCM No 349 of 12.06.2018 "On the approval of support measures for the promotion of the use of electricity from renewable sources of sun and wind, as well as procedures for selecting projects to benefit from these support measures", as amended**
13. **DCM No. 822, dated 7.10.2015 "On the approval of rules and procedures for the construction of new electricity production capacities, which are not the subject of a concession", amended.**
14. **DCM No. 633 of 26.10.2018, "On Measures against air pollution by emissions of engines vehicles and reduction of air emissions of gaseous pollutants and particulate matter from positive ignition engines and Compressed Ignition engines using natural gas and Liquefied petroleum gas used for vehicles ", amended**
15. **DCM No. 369 of 26.4.2017 "on the Methodology Approval for the Establishing the Purchasing price of the Electric Energy produced by solar and wind small renewable sources"**
16. **DCM No. 811 of 16.11.2016 "On approval the sectorial transport strategy and action plan 2016-2020" (TSSAP)**
17. **DCM No. 460 of 29.06.2022 "on the Approval of Inter-sector Strategy for Agriculture and Rural Development and Fishery (2021-2027)**
18. **Guideline of the Minister of Infrastructure and Energy No. 3 of 20.6.2019 "on the Approval of the Simplified Authorization Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Sources"**
19. **Sector Study for Investment Demand for Integrated Solid Waste Management (ISWM) in Albania (2018)**
20. **National Sectoral Plan for solid waste management, approved by KKT Decision no. 1, dated 13.1.2020,**
21. **DCM no. 177, dated 06.03.2012 "On packaging and their waste", amended,**

22. **DCM no. 418, dated 25.06.2014 "On the differentiated collection of waste at source",**
23. **DCM no. 575, dated 24.06.2015 "On the approval of requirements for inert waste management".**
24. **DCM No. 581 of 6.10.2021 "on the Approval of Nationally Determined Contribution Document"**
25. **Law "On the production, transport and trading of biofuels and other renewable combustibles for transport"** (draft version)
26. **Sustainable Transport Plan** (draft version)

3.1.2 GHG emissions and removals

In the Tables below are the Policies and Measures divided by the sectors they are related to.

Transport sector

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
Sector	*Transport*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Improvement of interurban/ intercity bus network lines (G-T1)*
Timeframe	*2023 – ongoing*
Legal basis and planning documents	*DCM No. 811 of 16.11.2016 "On approval the sectorial transport strategy and action plan 2016-2020"; Law no. 8308 of 18.03.1998 "On road transports", as amended*
Actions taken to date	- *Reorganization of passenger interurban/ intercity transport lines by bus according to the study or survey on supply – demand/origin-destination passengers flow for this kind of transport* - *Increasing of capacity building of the Task Force according to DCM no. 465 of 26.07.2018 on "Improving the level of control of vehicles and the trailers", as amnded* - *Approval of the new network lines according to the Guideline of the Minister no. 5628 of 18.11.2016 "On approval of the interurban/intercity network lines", as amended.* - *Construction of 10 km of dedicated lanes for bicycles in Tirana* - *concession of the new passenger terminal in Tirana (Municipality of Tirana) is under construction* - *The use of electric taxis and electric buses for passengers in Tirana* - *Construction of the new passenger terminal in Vlorë and Durrës Port* - *Study "Possibility of developing Intermodal Transport in Albania" (Albanian Transport Institute)*
Main Objective of PaM	*The main objectives are: (i) improving the infrastructure of passenger terminals; (ii) increase the efficiency of the interurban/intercity bus network; and (iii) reduce CO_2 emissions caused by the vehicles used in interurban/intercity bus network.*

Results to be achieved	- *Increasing the economic-financial effectiveness of operators by 30-40% (within a year)*
	- *Reduction of traffic congestion due to the reduction of the number of buses in circulation on the national road network.*
	  o *Reduction of departures and arrivals of buses by 15-20% (within one year)*
	  o *Reduction of CO_2 emissions, as the number of circulating buses decreases by 15-20%*
	- *Promoting multimodal transport*
	- *Improving the financial efficiency of the operators of the interurban network.*
	- *Increased reliability in interurban transport*
	- *Energy intensities in the transport sector will be reduced by 10%, as a result of better management*
	- *Increasing the safety and quality of service on interurban lines*
	- *Reduce needs for mobility and distances by means of integrated planning*
	- *Reduce fuel consumption of vehicles and shift traffic to towards more efficient modes*

	- *Use low carbon fuels such as sustainable biofuels or renewable electricity* - *Possibility of multimodality and intermodality between modes of transport* - *Setting up of Passenger Terminals*	
Measures to be implemented	*Reduction in the use of energy resources though the following measures:* *Efficient operation* - *Study to Eliminate overlaps of lines in their itineraries* - *Using of new technologies "Intelligent Transport Systems" and "Smart Logistics" help to manage transport systems efficiently* *Promotion and awareness creation:* - *Promoting public passenger road transport* - *Public awareness campaigns* *Tariff:* - *Setting traffic tariffs and limiting the use of vehicles (their use on certain days of the week, e.g., according to license plate of the car)* - *Drafting an optimal parking plan and optimal parking tariffs, especially in the main nodes of passenger and freight transport* *Infrastructure:* - *Use of energy efficient vehicles* - *Improving the quality of roads* *Urban Planning:* - *Reducing needs for mobility and distances by means of integrated planning*	*by 2025* *by 2025* *by 2025* *by 2026* *by 2026*
Budget (source of budgeting)	*Specific budget not available.* *The total budget foreseen for investments in the transport sector for a period of 20 years (2019-2038) is 4,888.03 MEur of these 4,458.53 MEur are for projects developed by the public sector while, 429.5 MEur are private investments.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure & Energy; General Directorate of Road Transport Services; Companies operating in interurban bus transport; Travel agencies. Albanian Road Authority; Agency for the support of local self-government/ Municipalities* *Task Force*	
Relation with other dimensions (if any)	*Energy Efficiency*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
Sector	*Transport*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Integrated freight management* *(G-T2)*
Timeframe	*2020 – 2025*
Legal basis and planning documents	*DCM No. 811 of 16.11.2016 "On approval the sectorial transport strategy and action plan 2016-2020"*
Actions taken to date	*In the above mentioned document, the following actions are specified:* - *Weight reduction* - *Use of vehicles with improved energy performance.* - *More efficient tires* - *Improving the truck maintenance system to reduce pollution levels.* - *Establish a system of taxes and tariffs to stimulate efficient transport of goods.* - *Improving driver training to increase the quality of driving* *Implementation of the strategy and action plan is still pending.*
Main Objective of PaM	*The main objectives according to the National Energy Strategy includes an active transport scenario and aims to reduce by 10% the energy intensity in the transport sector. Objectives: Logistics cost reduction. Reduction of road traffic and congestion.*

Results to be achieved	- *Integration of road, rail, sea and air transport in the transport of goods (medium term 5-8 years)* - *Improving the efficiency of the transport of goods* - *Reduction of transit time and transport costs along the freight chain through collaboration agreements with neighbouring countries.* - *Reduction of traffic congestion on the national road network* - *Reduction of energy consumption (ton/km)* - *Reduction of CO_2 emissions* - *Reduce fuel consumption of vehicles and shift traffic to towards more efficient modes* - *Use low carbon fuels such as sustainable biofuels or renewable electricity* - *Increase of Investments in the freight transport management sector* - *Reduction of the cost of transport from the Origin to the Destination of the goods (during the transport chain)*	
Measures to be implemented	- *Improving the vehicle load factor in the freight transport* - *Implementation of Intelligent Systems of Transport (IST)* - *Integration of the Freight System with EU networks (EU freight systems)* - *Establishment of Intermodal and Logistic nodes*	*by 2025* *by 2025* *by 2028* *by 2028*
Budget (source of budgeting)	*See G-T1, specific budget not available*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Albanian Seaports, Albanian Railways Authority, Albanian Customs, Albanian Road Authority* *Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Energy Efficiency*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Transport*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Fiscal*	
Title of PaM (Coding)	*Efficiency-based car fees and incentives for fleet renewal (G-T3)*	
Timeframe	*2020 – ongoing*	
Legal basis and planning documents	*DCM No. 633 of 26.10.2018, "On Measures against air pollution by emissions of engines vehicles and reduction of air emissions of gaseous pollutants and particulate matter from positive ignition engines and Compressed Ignition engines using natural gas and Liquefied petroleum gas used for vehicles ", amended; Law No. 9957 of 28.7.2008 "on National Taxes", amended*	
Actions taken to date	- *No registration fee for electric vehicles* - *The state reimburses 7500 ALL, approx. 55 Euro, for the PHEV* - *New vehicles for three years are exempt from taxes*	
Main Objective of PaM	*The measure aims at reducing the average age of cars and increasing the required standard. The measure is consistent with the INDC mitigation scenario. It includes the banning of registering the cars and increasing taxes for second-hand category cars in order to reduce at maximum their introduction to Albanian market.*	
Results to be achieved	- *Decrease of the import of used vehicles* - *Increase the use of new vehicles* - *Increase the use of electric vehicles*	
Measures to be implemented	- *To continue with the measures described in the section "Actions taken to date"* - *Annual taxes increase based on the car age and type of fuel used* - *Regulation on the price for EV charging and charging station installation.*	*Annual basis*

	- *Regulation for grid connection of charging stations and strengthening the Grid capacities*	
Budget (source of budgeting)	*See G-T1, specific budget not available*	
Implem. Entity (Monitoring Entity)	*Customs Authority, Ministry of Infrastructure and Energy, Ministry of Tourism and Environment, General Directorate of Transport, Local Government Units* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Energy Efficiency*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Transport*	
Modelling Scenario Considered	*WAM* *Regulatory*	
Title of PaM (Coding)	*Clean vehicles in public procurement* *(G-T4)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Directive (EU) 2019/1161 amending Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles (revised Clean Vehicles Directive: https://eur-lex.europa.eu/eli/dir/2019/1161/oj) addresses public procurement tenders. It defines "clean vehicles" and sets national targets for the EU Member States for their public procurement. It applies to different means of public procurement, including purchase, lease, rent and relevant services contracts (Overview of content: https://transport.ec.europa.eu/transport-themes/clean-transport/clean-and-energy-efficient-vehicles/clean-vehicles-directive_en#:~:text=The%20revised%20Directive%20defines%20a,%3A%20only%20zero%2D emission%20vehicles).*	
Actions taken to date	- *The first draft of the DCM "Promoting low-emission and high-performance, energy-efficient vehicles through public procurement and public services in passenger transport" has been prepared* - *Activities start based on the definitions and targets provided by the revised Clean Vehicles Directive. Possible targets for Albania are based on the targets of the EU Member States, which are at the lower end.*	
Main Objective of PaM	*The measure aims at increasing the share of clean vehicles in public procurement. According to the revised Clean Vehicles Directive, clean vehicles are defined as follows:* *Clean light-duty vehicle: any car or van meeting the following emission thresholds:* *until 31 December 2025: no more than 50g/km CO2 and up to 80% of applicable real driving emission (RDE) limits for NOx and PN; from 1 January 2026: only zero-emission vehicles.* *Clean heavy-duty vehicle: any truck or bus using one of the following alternative fuels: hydrogen, battery electric (including plug-in hybrids), natural gas (both CNG and LNG, including biomethane), liquid biofuels, synthetic and paraffinic fuels, LPG.*	
Results to be achieved	- *100% of newly procured light-duty vehicles are EV or PHEV starting from year 2025* - *20% share of clean heavy-duty vehicles / trucks by 2030, whereby clean heavy-duty vehicles are only based on hydrogen or other clean source based on technological development* - *25% share clean heavy-duty vehicles / busses by 2030, whereby clean heavy-duty vehicles are only based on hydrogen or other clean source based on technological development*	
Measures to be implemented	- *To approve the minimum procurement target for the share of clean vehicles and adopt the necessary legislation; assist public authorities with procurement documents ready for use* - *Procurement by public authorities according to the rules*	*By 2025* *From 2025 on*
Budget (source of budgeting)	*Specific budget for investment costs not available; transaction costs for preparing procurement documents and for staff training (estimate for technical assistance: EUR 10,000)*	

Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, General Directorate of Transport; Ministries, Public authorities, Local Government Units* *(General Directorate of Transport)*
Relation with other dimensions (if any)	*Renewable Energy*

	Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
		Transport
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Technical; Financial*	
Title of PaM (Coding)	*Green hydrogen in heavy-duty transport* *(G-T5)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Basic studies for the use of green hydrogen in heavy duty transport are available. For example, there is the possibility to retrofit diesel trucks for green hydrogen use: https://cordis.europa.eu/article/id/442780-retrofitted-zero-emission-trucks-to-hit-the-road-in-2023#:~:text=A%20cutting%2Dedge%20solution%20keeps,standard%20diesel%20into%20hydrogen%20engines.&text=Heavy%2Dduty%20vehicles%20such%20as,road%20transport%20in%20the%20EU. Hydrogen is suitable to replace fossil fuels in the heavy-duty transport sector, as it has higher energy density than electric batteries, making it suitable for vehicles carrying weighty loads long distances.*	
Actions taken to date	*No actions taken to date.*	
Main Objective of PaM	*To decarbonise heavy-duty vehicles transport.*	
Results to be achieved	- *Development of supply infrastructure at critical hubs, e.g. freight terminals at harbours* - *To convert existing diesel trucks of Albanian freight companies to hydrogen use*	
Measures to be implemented	- *Feasibility study together with a port freight terminal with regard to the provision of the necessary supply infrastructure* - *Feasibility study together with an Albanian freight company for the conversion of diesel trucks to hydrogen use* - *Design of funding programme for supporting front runners in implementing the measures* - *Legal framework for setting mandatory requirements based on the lessons learnt from implementing the funding programme*	*By 2026* *By 2026* *By 2028* *2030 on*
Budget (source of budgeting)	*Specific budget for investment costs and funding not available, to be determined by the feasibility studies; feasibility studies to be funded by technical assistance programmes (estimate: EUR 20,000 EUR per feasibility study); transaction costs for preparing and implementing the funding programme (staff); transaction costs for preparing the legal framework (staff).*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Ministry of Transport, Ministry of Economy, Culture and Innovation, Ministry of Finance, Chamber of Commerce and Industry, the companies concerned* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Energy Efficiency; Research, Innovation & Competitiveness* *Relation with the following PaM:* *G-I6 Green hydrogen strategy*	

Building sector

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Building Sector*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial; Educational*	
Title of PaM (Coding)	*Policies to support RES in Heating and Cooling Sector (G-B1)*	
Timeframe	*2017 – 2030*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"* *Law on Energy Performance of Buildings* *Law on Energy Efficiency*	
Actions taken to date	*Up to now, activities on increasing the capacities in the central and local government units (municipalities) have been taken.* *70% of solar heating panels for hot water (solar thermal systems) were subsidized by the government of Albania for 2000 installations.* *The new law foresees a scheme for supporting RES in Heating and Cooling Sector.*	
Main Objective of PaM	*Promote the widespread use of renewable energies in the heating and cooling sector*	
Results to be achieved	- *Increase the installed capacity of RES in buildings*	
Measures to be implemented	- *DCM to support the achievement of National target for renewable energy sources in the heating and cooling sector.* - *Minimum indications for the use of solar energy, to be placed considering the amount of solar radiation for different areas of the country.* - *Approval of the specific criteria for the calculation of used solar energy to obtain hot water in particular or as part of the energy code of the buildings taking into account the latest EU standards adopted for this purpose.* - *Regulatory schemes for the installation of photovoltaic panels both in residential and other sectors.* - *Financial incentive schemes for solar thermal systems in connection with:* o *Continuation of the solar thermal incentive scheme: 70% of solar heating panels for hot water (solar thermal systems) subsidized by the government of Albania for 2000 installations* o *Household measures such as improving energy efficiency of the heating systems, modernisation and expansion of efficient heating systems, fuel change, etc.* o *Heating system improvement (HIS) for common buildings, such as the installation of simple and low-cost equipment, conducting simple energy audits along with education campaigns, fuel change;* - *Regulatory schemes for approving the support scheme for achieving the national objective for renewable energy sources in the heating and cooling sector".* - *Regulatory scheme for fossil fuel boiler replacement.* - *Guidelines on the application procedure along with best practices and advantages.* - *Combining the above measures with the retrofitting programs developed by municipalities and central government.*	*by 2025* *2024 on* *2024 on* *2024 on*

Budget (source of budgeting)	*The cost of PV scheme are covered by the electricity tariffs.* *The cost of the solar thermal scheme is covered by the financial incentive schemes funded by state budget (estimate: EUR 1,200 per system, funding 70%, 2000 installations: budget for incentive scheme is EUR 1,680,000.00; estimation according to https://balkangreenenergynews.com/albania-to-subsidize-solar-thermal-collectors-for-households-with-up-to-70/).* *The implementation will be in stages and the financing mechanism will be one of the following:* *A certain percentage of grant for the total investment cost* *Low interest loan* *Tax exemption* *Transaction costs occur for the preparation and implementation of the legal framework, application guidelines and assistance/training for municipalities (staff and technical assistance; the costs for technical assistance are estimated at EUR 50,000).*
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, municipalities* *(Ministry of Infrastructure and Energy, National Agency for Efficiency)*
Relation with other dimensions (if any)	*Energy Efficiency*

Industrial sector

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
Sector	*Industry*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Educational*
Title of PaM (Coding)	*Implementation of the ETS in Albania* *(G-I1)*
Timeframe	*2022 – 2030*
Legal basis and planning documents	*Law No. 155/2020 of 17.12.2020 "on Climate Change"; DCM No. 466 of 3.7.2019 "on the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change"*
Actions taken to date	*Law 10448 of 14.7.2011 establishes environmental permitting system for operation of certain groups of polluting industrial activities in compliance with environmental standards. The industrial operators are obliged to monitor and report the emissions of their activities into the environment, based on the conditions set in the respective environmental permit.* *National Environmental Agency has identified 13 operators who run 20 installations potentially falling under EU ETS.*
Main Objective of PaM	*Setting up the ETS in Albania will contribute to reach the NDC target for reduction of GHG emission from the industry sector as well as the NECP target for decarbonisation of the economy.*
- **Results to be achieved**	- *Aiming to reduce the GHG emission from the industry sector till 2030 by 50%* - *In order to set up the emission trading scheme, MTM has committed to approve the necessary legal basis for the MRVA system by June 2025, aligning the MRVA EU package.* - *Albania introduces trading of free allowances at national level with the participation of the cement, fertilizers, iron and steel industries (2026)* - *The Law on Climate Change will be amended and/or other new legal and sublegal acts will be approved so to decide and include the following elements necessary to implement the provisions of the Directive 2003/87/EU amended by Directive 2008/101/EC, Emissions Trading System EU ETS:* o *responsible body for the participation of the RoA in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)* o *manner, and purpose for the use of revenues generated from the auctioning of allowances, in accordance with Article 3d(4) and10(3) of the Directive 2003/87/EU, and the implementing body in charge of*

	implementing the tenders and projects to be financed from auctions revenues. o *financial measures in favour of sectors or subsectors which are exposed to a genuine risk of carbon leakage due to significant indirect costs that are actually incurred from greenhouse gas emission costs passed on in electricity prices, provided that such financial measures are in accordance with State aid rules, in accordance with Article 10(6) of the Directive 2003/87/EU* o *a possible transitional free allocation to installations for electricity generation for the modernization, diversification, and sustainable transformation of the energy sector in accordance with Article 10c(1) of the Directive 2003/87/EU (Article 10c "Option for transitional free allocation for the modernisation of the energy sector"; refers to Member States which had in 2013 a GDP per capita at market prices (in euros) below 60 % of the Union average)* o *whether and what percentage of allowances will be added to volume for Albania, thus increasing the allocated funds, and support investments in the Modernization Fund in accordance with Article 10d(4).* o *whether RoA will apply ETS in accordance with Article 24 to activities and to greenhouse gases which are not listed in Annex I of the Directive 2003/87/EU* o *whether, following consultation with the operator, RoA will exclude from the ETS installations which have reported emissions of less than 25 000 tones of carbon dioxide equivalent and, where they carry out combustion activities, have a rated thermal input below 35 MW* o *whether RoA will exclude from the ETS installations that have reported to the competent authority of the Member State concerned emissions of less than 2 500 tones of carbon dioxide equivalent* o *<u>By June 2025</u> Bylaws will be adopted to fully align with the EU MRVA Acquis on industrial installations;* - *<u>By 2027</u>, 20 industrial operators that fall under the Annex II of the law 155/2020, are capable to monitor, report and verify the GHG emissions in compliance with relevant EU guidelines.*	
Measures to be implemented	*Design of the future ETS according to EU-standards in order to facilitate the process of any potential future linking with the EU-ETS:* - *Improvement of the legislative framework (secondary legislation on procedures of issuing GHG permit and technical guidelines)* - *Creating the help desk for industrial operators* - *Setting the carbon price* - *Training of industrial operators on establishing:* o *Monitoring Plan (Categorisation, Tier system, Calculation based approach, Uncertainty, Other requirements)* o *Verification and Reporting (Annual emission report with verified data on emissions;* o *Verification report; Improvement report)* o *How to obtain EU allowances (buy, get for free), surrender EU allowances* o *Starting the accreditation process and/or recognition of external verifiers due to the size of the market.* - *Training NEA and other institutions' staff in data processing, indicators development, management, archiving, procedures of evaluation and approval of monitoring plans, etc.*	*by 2030*
Budget (source of budgeting)	*2 MEur (as an indicative figure based on benchmarking, covering the costs of capacity building of competent authority and operators and putting in place technical framework).* *Budget can be obtained through various international donors and EU financing mechanisms, such as, IPA technical assistance, TAIEX etc.*	
Implem. Entity (Monitoring Entity)	*Ministry of Tourism and Environment, Ministry of Infrastructure and Energy, Ministry of Finance* *National Environmental Agency*	

Relation with other dimensions (if any)	*Decarbonisation (IPPU and electricity generation); potential impact on Energy Efficiency and Research, Innovation & Competitiveness*

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Industry/ Cross cutting*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Establishment of a mechanism for implementation of MMR (Monitoring Mechanism Regulation)* *(G-I2)*	
Timeframe	*2022 – ongoing*	
Legal basis and planning documents	*Law No. 155/2020 of 17.12.2020 "on Climate Change"; DCM No. 466 of 3.7.2019 "on the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change"; UNFCCC ratification by the Albanian Parliament in 1994; and DCM no. 889, dated 27.12.2022 for the approval of the regulation for monitoring, reporting of greenhouse gas emissions and other information related to climate changes at the national level.*	
Actions taken to date	*Preparation and approval of the law on Climate Change and the process of revising the NDC.*	
Main Objective of PaM	*Ensured alignment with EU climate change Acquis and fulfilment of the UNFCCC requirements through introduction of a mechanism for monitoring and reporting GHG emissions and other information relevant to climate change on regular basis.*	
Results to be achieved	- *An appropriate MRV system for tracking emissions needs to be in place, as foreseen in the recently adopted "Law on Climate Change" and DCM no. 889, dated 27.12.2022 for the approval of the regulation for monitoring, reporting of greenhouse gas emissions and other information related to climate changes at the national level* - *In the first revised NDC 2021, Albania committed to an unconditional emissions reduction target of 20.9% by 2030 compared to business as usual. This is an increase compared to the first NDC which aimed to reduce emissions by 11.5% by 2030 compared to 2016 levels.*	
Measures to be implemented	*Legal basis:* *Implementation:* - *An Implementation Plan for the MMR* - *Core GHG inventory team of at least 6 persons established across institutions and fully conversant with the tasks of inventory team (Sector experts, co-coordinator, QA/QC, peer review)* - *Core team for MMR of at least 10 persons from institutions established and fully conversant with the tasks they were trained for and able to carry out all statutory tasks required by the MMR* - *Capacity building for skilled staff of MoTE, NEA, MIE, MARD and all stakeholders identified by the CCL* - *Capacity building for skilled accredited independent verifiers of the GHGs monitoring reports* - *Capacity building for skilled and other institutions' staff in data processing, indicators development, management and archiving* - *Creating enriched pool of data, archives and exchange of information between all institutions involved with the MMR* - *An electronic system in place for activity data uploading/downloading by MIE, MARD, MoTE, NEA and all other institutions involved with MMR* - *Improve coordination capacities at MoTE and the inter-institutional cooperation for the implementation of the CCL, MMR and other climate change Acquis to achieve compliance with policy reporting requirements*	*by 2025* *by 2026*

Budget (source of budgeting)	*1 MEur, bilateral cooperation, IPA technical assistance*
Implem. Entity (Monitoring Entity)	*National Environmental Agency, Regional Environmental Agency and Inspectorate (National Environmental Agency: Preparation and verification of GHG emission reports)*
Relation with other dimensions (if any)	*Energy Efficiency*

Energy Dimension	*1. Decarbonisation GHG emissions and removals*	
Sector	*Industry*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Technical*	
Title of PaM (Coding)	*Reduction of GHG emissions in the cement production sector (G-I3)*	
Timeframe	*2023 – ongoing*	
Legal basis and planning documents	*Law No. 10304 of 15.7.2010 on the mineral sector in the Republic of Albania, amended, DCM No.479 of 29.06.2011 "For approval of the mining strategy of the Republic of Albania 2011 – 2025", Law 125/2013 of 25.4.2013 "On concessions and public private partnership", as amended.*	
Actions taken to date	*No actions taken to date, new activity.* *MoTE has prepared NAMAs (Nationally Appropriate Mitigation Actions) for the cement production sector in Albania.* *In this context, there are considerations to use alternative fuels such as waste.* *Status quo:* *Full privatisation of the cement production sector;* *Renovation of the cement production technology, the range of the product increased;* *Little concern to reduction of GHG emissions.*	
Main Objective of PaM	*To modernise cement production in a way that the technical and economic potential for reduction of GHG emissions is fully exploited.* *The use of alternative fuels (such as waste) as a means of reducing greenhouse gas emissions.*	
Results to be achieved	*GHG emissions from cement production to be reduced by 50%*	
Measures to be implemented	*Technical and financial feasibility study to be carried out by expert team:* - *Investigation of feasible technological adaptations of the whole chains of the production processes, identification of the associated cost, reduction of GHG emissions, etc.* - *Identification of the ways to low-carbon cement including the use of zero-emission fuels, as well as finding the acceptable substitutes for clinker of the limestone origin* - *Policies pursued in competing countries (Italy, Greece) for carbon policies in the cement industry should be evaluated, to avoid any potential discrimination in the market* - *Identification of the potential support measures, fiscal or financial, to support the transition process of the cement industry* *Planning the implementation* *Implementation of refurbishment measures at cement production sites*	*by 2026* *by 2030* *2030 on*
Budget (source of budgeting)	*Technical and financial feasibility study to be financed by a Technical Assistance Program, approx. 0.3 MEur*	
Implem.Entity **(Monitoring Entity)**	*Ministry of Infrastructure and Energy, National Agency for Natural Resources, Cement production industry;* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Energy Efficiency; Research, Innovation and Competitiveness* *Relation with the following PaM:* *G-W2 Use of Waste Incineration Plants for the waste integrated management process in Albania*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Industry, Electricity, Cooling*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Reduction of Fluorinated Gases (F-Gases) Emissions (G-I4)*	
Timeframe	*2024-2045*	
Legal basis and planning documents	*Law no.2/2023 "on the fluorinated greenhouse gases"*	
Actions taken to date	*Legal base has been approved*	
Main Objective of PaM	*To reduce emissions of fluorinated gases (F-gases) through regulatory measures, technology improvements, and enhanced practices, thereby contributing to national climate goals and obligations under the EU Climate and Energy Framework.* *The general objective of the HFC phase-down strategy developed by Albania (National Ozone Unit) is to ensure the country's sustainable development by applying appropriate solutions in order to reduce the contribution of Albania to climate change due to the use of substances having GWP. The specific objective of the strategy is to reduce the consumption of HFCs in Albania by 80 percent over the period from 2024 to 2045.*	
Results to be achieved	***Short-term Target:*** *Reduce F-gas emissions by 10% by 2029, relative to the baseline year (2020-2022).* ***Long-term Target:*** *Achieve a reduction of 80% by 2045, aligning with national and international commitments targets (amendment of Kigali, Montreal protocol ratification).*	
Measures to be implemented	***Implementation of Kigali implementation plan, Stage I*** *(includes 10 percent emission reduction)* *A combination of different measures to decrease the need for HFCs in RAC servicing sector, such as:* *(i) provision of trainings to RAC technicians, including the operation of a certification scheme, to improve good servicing practices and reduce leakage, and recovery and recycling;* *(ii) strengthening national policies and regulations for HFC reduction and their implementation, including economic measures (import quotas, permits), control measures (ban of import of equipment) and further development of national standards for safety in dealing with toxic or flammable refrigerants, as well as the training of Customs and enforcement officers;* *(iii) promotion of low-GWP alternatives and improved data reporting thereon; and (iv) engaging all relevant stakeholders and encouraging them to better integrate the HFC phase-down plan with their business plans; while placing a particular emphasis on mainstreaming gender considerations into all KIP* ***Stage II*** *includes reduction by 30 percent in 2035.* ***Stage III*** *includes reduction by 50 percent in 2040 and by 80 percent in 2025.*	*by 2029* *by 2035* *by 2045*
Budget (source of budgeting)	*Multilateral Fund of Montreal Protocol, approx. 0.5 MEur.*	
Implem. Entity (Monitoring Entity)	*Ministry of Tourism and Environment, National Ozone Unit* *National Environmental Agency*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency; Research, Innovation & Competitiveness*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Industry*	
Modelling Scenario Considered **Type of Instrument**	*WAM* *Technical; Financial*	
Title of PaM (Coding)	*Green hydrogen for the ferrochrome and steel producing industry and for export (G-I5)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Basic studies for the use of green hydrogen in industry are available, for example: https://www.irena.org/Publications/2022/Mar/Green-Hydrogen-for-Industry. The basic principle is that the chemical process of reduction is carried out using green hydrogen instead of coal. Hydrogen is used in refineries, the chemical industry and steel production, all of which are classified as 'hard to abate' sectors. This large and centralised demand is critical to the development of a green hydrogen sector. Working together at regional level is important in terms of economies of scale.*	
Actions taken to date	*No actions taken to date.* *In 2024, a source of almost-pure natural hydrogen was found in an Albanian mine, emitting at least 200 tonnes of H2 a year (https://www.hydrogeninsight.com/production/massive-spring-of-almost-pure-natural-hydrogen-found-in-albanian-mine-emitting-at-least-200-tonnes-of-h2-a-year/2-1-1596637).* *In addition, green hydrogen is produced by electrolysers powered by renewable electricity.*	
Main Objective of PaM	*Transformation of industrial production using coal for chemical reduction processes towards cleaner production (more information on cleaner production: https://www.unido.org/our-focus-cross-cutting-services-partnerships-prosperity-networks-centres-forums-and-platforms/national-cleaner-production-centres-ncpcs-networks).*	
Results to be achieved	*Transformation of the industrial production using coal for chemical reduction processes completed by 2050.*	
Measures to be implemented	*Strategic level:* *Industrial development strategy: Identifying the industries to be developed and elaborating a path to modernise/rebuild the production processes towards low carbon, taking into account the use of green hydrogen.* *Feasibility studies:* *Development of a transition roadmap including investment strategy / financing concept for specific plants, together with the companies.* *Analysing opportunities to produce green hydrogen for export.* *Implementation:* *Investments in the modernisation of production facilities in accordance with transformation roadmaps.*	*by 2026* *by 2028* *2030 on*
Budget (source of budgeting)	*Investment needed to be specified by means of feasibility studies; industrial development strategy and feasibility studies to be funded by technical assistance programmes (estimate: 0.5 MEur for studies at strategic and feasibility level).*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Ministry of Economy, Culture and Innovation, Ministry of Finance, Chamber of Commerce and Industry* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Research, Innovation & Competitiveness* *Relation with the following PaM:* *G-I6 Green hydrogen strategy*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Industry; Cross-cutting*	
Modelling Scenario Considered **Type of Instrument**	*WAM* *Promotional; Regulatory*	
Title of PaM (Coding)	*Green hydrogen strategy* *(G-I6)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A hydrogen strategy for a climate-neutral Europe. Brussels, 8.7.2020, COM(2020) 301 final*	
Actions taken to date	- *Preparatory work for developing the green hydrogen strategy* - *Massive increase in planned PV capacity*	
Main Objective of PaM	*The aim of the strategy is to support hydrogen as a key component of the energy and industrial decarbonisation strategy in line with EU programmes. The strategy is divided into the following areas of intervention:* - *Production, storage, distribution for national use and export* - *National use (industrial use, mobility and transport)* - *Research, development and innovation* *The aim is to drive investment in renewable hydrogen production and at the same time to establish a suitable infrastructure for the transport of hydrogen, i.e. through the utilisation and targeted conversion of the existing natural gas infrastructure into a pure hydrogen infrastructure. Albania's cooperation with potential trading partners for hydrogen will also be intensified, export opportunities will be developed and domestic companies will be shown prospects for trading opportunities.*	
Results to be achieved	*Hydrogen is a key priority to achieve the European Green Deal and Europe's clean energy transition. In its strategic vision for a climate-neutral EU published in November 2018, the share of hydrogen in Europe's energy mix is projected to grow from the current less than 2% to 13-14% by 2050 (COM(2020) 301 final).* *Based on this information, Albanian targets are envisaged as follows:* - *Green hydrogen in Albania's energy mix: 14% by 2050* - *Green hydrogen replacing hydrogen produced from fossil fuels for industrial use: 50% by 2050*	
Measures to be implemented	- *To develop and agree on the green hydrogen strategy, including investment plan* - *Development of individual projects (e.g. green hydrogen in the ferrochrome industry)* - *Implementation of individual projects*	*By 2026* *By 2030* *From 2030 on*
Budget (source of budgeting)	*Strategy development to be financed by a Technical Assistance Program, approx. 0.3 MEur.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Renewable Energy* *Relation with the following PaMs:* *G-T5 Green hydrogen in heavy-duty transport* *G-I4 Green hydrogen for the ferrochrome and steel producing industry*	

Agricultural sector

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Agriculture*	
Modelling Scenario Considered **Type of Instrument**	*WEM* *Regulatory; Financial; Educational*	
Title of PaM (Coding)	*Promotion of organic agriculture* *(G-A1)*	
Timeframe	*2020 – 2030*	
Legal basis and planning documents	*DCM No. 709 of 29.10.2014 "on the Approval of ISARD - Intersectoral Strategy for Agriculture and Rural Development for the period 2014–2020", amended* *DCM No. 460 of 29.6.2022 approving the Strategy on Agriculture, Rural Development and Fisheries 2021-2027*	
Actions taken to date	*No report available on the progress but it is known that the IPA instrument (IPARD) supports this direction (organic farming).* *Agri-environmental, climatic and organic farming measures in total foreseen in the IPARD II (2014-2020) scheme have an indicative budget of 1.7 MEur and an indicative starting date in 2018.*	
Main Objective of PaM	*Promotion of organic farming and increase of the share of organic farming in the agriculture sector and the improvement of the fertilization methods.*	
Results to be achieved	- *Decrease of average rate of fertilization by 10% between 2019 and 2030 and a reduction of 50% of the urea spread between 2019 and 2030*	
Measures to be implemented	*Legal framework* - *Improvement of the legislative framework to support organic farming with targeted subsidies* - *Establishment of a data collection process on organic farms and area under organic farming to evaluate and adjust policies* *Training and awareness creation* - *Drafting, publishing, and disseminating the Code Best Practice in Agriculture (BPA)* - *Training of farmers in implementation of the Code of BPA*	*by 2025* *2024 on*
Budget (source of budgeting)	*After 2020: According to IPARD III Programme 2021-2027 (in total 149 million EUR, thereof 122 million EUR EU contribution), the budget for Agri-environmental, climatic and organic farming measures is 2.5 MEur. IPARD III provides also budgets for technical assistance (2.2 MEur) and advisory services (2.9 MEur) part of which could be used to cover efforts for developing the framework including training and awareness creation (estimate: EUR 150,000). https://ipard.gov.al/wp-content/uploads/2021/03/Programi-IPARD-III_2021-2027_English.pdf*	
Implem. Entity (Monitoring Entity)	*Ministry of Agriculture and Rural Development; National Agency for the Rural and Agricultural Development* *Regional Agencies of Agricultural Extension*	
Relation with other dimensions (if any)		

Energy Dimension	*2. Decarbonisation* *GHG emissions and removals*	
Sector	*Agriculture*	
Modelling Scenario Considered **Type of Instrument**	*WEM* *Regulatory*	
Title of PaM (Coding)	*Improve the Agricultural Monitoring in Albania* *(G-A2)*	
Timeframe	*2015 - ongoing*	

Legal basis and planning documents	*DCM No. 709 of 29.10.2014 "on the Approval of ISARD - Intersectoral Strategy for Agriculture and Rural Development for the period 2014–2020", amended; Law No. 8244 of 17.6.2004 "on the protection of Agricultural Land", amended* *DCM No. 460 of 29.6.2022 approving the Strategy on Agriculture, Rural Development and Fisheries 2021-2027*	
Actions taken to date	*No report available on the progress.*	
Main Objective of PaM	*Establish a permanent national monitoring of land and agricultural activities in relation to GHG emissions.*	
Results to be achieved	- *A national registry is to be established under the auspices of INSTAT in the period 2025-2030* - *Training of municipal staff, farmers, etc.*	
Measures to be implemented	- *Financial support (mainly through IPARD instrument)* - *Improvement of the legislative framework related to the methodology of monitoring.*	*by 2030*
Budget (source of budgeting)	*No budget identified specifically for this PaM. IPARD III Programme 2021-2027 provides also budgets for technical assistance (2.2 MEur) and advisory services (2.9 MEur) part of which could be used to cover this PaM. Efforts for developing the framework including training measures are estimated at EUR 150,000. https://ipard.gov.al/wp-content/uploads/2021/03/Programi-IPARD-III_2021-2027_English.pdf*	
Implem. Entity (Monitoring Entity)	*Ministry of Agriculture and Rural Development; INSTAT* *(INSTAT; Regional Agencies of Agricultural Extension)*	
Relation with other dimensions (if any)		

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Agriculture*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Educational*	
Title of PaM (Coding)	*Regulating the Agricultural burning practices* *(G-A3)*	
Timeframe	*2019 - ongoing*	
Legal basis and planning documents	*DCM No. 709 of 29.10.2014 "on the Approval of ISARD - Intersectoral Strategy for Agriculture and Rural Development for the period 2014–2020", amended. DCM No. 460 of 29.6.2022 approving the Strategy on Agriculture, Rural Development and Fisheries 2021-2027.* *Law No. 8244 of 17.6.2004 "on the protection of Agricultural Land". DCM No. 608 of 17.9.2014: For the determination of the necessary measures for the collection and treatment of bio waste.*	
Actions taken to date	*No report available on the progress.*	
Main Objective of PaM	*Prohibition of outdoor burning of agricultural waste.*	
Results to be achieved	- *Reduction of emissions coming from the burning of agricultural waste* - *Training of farmers, etc.*	
Measures to be implemented	*Legal framework* - *Intensify control over incineration of agricultural waste: The burning of agricultural waste should be controlled by taking security measures from the fire as well have a defined schedule and areas designated for their incineration* *Training and awareness creation* - *Drafting, publishing, and disseminating the Code Best Practice in Agriculture* - *Training of farmers in implementation of the Code of BPA*	*by 2025* *2024 on*
Budget (source of budgeting)	*No budget identified specifically for this PaM. IPARD III Programme 2021-2027 provides also budgets for technical assistance (2.2 MEur) and advisory services (2.9 MEur) part of which*	

	could be used to cover this PaM. Efforts for developing the framework including guidelines and training measures are estimated at EUR 150,000. https://ipard.gov.al/wp-content/uploads/2021/03/Programi-IPARD-III_2021-2027_English.pdf
Implem. Entity (Monitoring Entity)	*Ministry of Agriculture and Rural Development; INSTAT (INSTAT; Regional Agencies of Agricultural Extension)*
Relation with other dimensions (if any)	

Waste Management sector

Energy Dimension	*1. Decarbonisation GHG emissions and removals*	
Sector	*Waste Management*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Emission reduction from waste (G-W1)*	
Timeframe	*2020 – 2035*	
Legal basis and planning documents	*DCM No. 418 of 20.5.2020 "on the Approval of National Integrated Waste Management Strategy and the Action Plan for Albania for the period 2020–2035"; Sector Study for Investment Demand for Integrated Solid Waste Management (ISWM) in Albania (2018); The National Sectoral Plan for solid waste management, approved by KKT Decision no. 1, dated 13.1.2020, DCM No. 177, dated 06.03.2012 "On packaging and their waste", amended, VKM no. 418, dated 25.06.2014 "On the differentiated collection of waste at source", DCM no. 575, dated 24.06.2015 "On the approval of requirements for inert waste management".*	
Actions taken to date	*35 out of 61 municipalities have a Waste Integrated Management Plan in place and 12 other municipalities are in the process of preparing them. 17% of all waste streams go for recycling and approx. 10% of packaging waste is collected by the municipalities. 40% of batteries and accumulators, 5% of sewage sludge and 0% of inert waste is collected and properly treated.*	
Main Objective of PaM	*Improved waste management has enabled waste collection and treatment in an integrated manner in line with EU standards. Establishment of a system for integrated management of other municipal waste streams, which is based on the waste hierarchy.*	
Results to be achieved	- *All municipalities have a Waste Integrated Management Plan in place by 2035. 40% of all waste streams go for recycling and not less than 70% of packaging waste is collected by the municipalities by 2035.* - *All municipalities have closed the non-compliant landfills by 2035.* - *80% of batteries and accumulators, 80% of sewage sludge and 80% of inert waste is collected and properly treated by 2035.* - *The beginning of CH_4 capture in 2025 and linear evolution until the capture of 10% of 1.34 million tonnes of CH_4 in 2030 (estimated by considering data from the GACMO tool of Third National Communication Scenario and the NDC).*	
Measures to be implemented	*Municipalities:* - *Installation of methane capture installations in the landfills* - *Drafting a plan for waste management from packaging and a program for waste prevention in support of the implementation of the strategic policy document for Integrated Waste Management and Action Plan* - *Closing and treatment of all inherited municipal landfills (non-compliant landfills), according to the instructions in force* *Ministry and National Agency* - *Implementation of national schemes of extended producer responsibility for packaging and packaging waste*	*2025 on* *by 2035* *by 2035* *2025 on*
Budget (source of budgeting)	*The estimated value for landfill rehabilitation is approx. 76 MEur; Collection of dry recyclables approx. 18.5 MEur and collection of organic waste and composting approx. 13 MEur. (All values have been calculated until for the period 2018-2032.)*	

Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Ministry of Tourism and Environment, National Waste Management Agency (AKEM), National Agency for Water Supply and Sewerage; Municipalities* *(National Waste Management Agency (AKEM), National Agency for Water Supply and Sewerage; National Environmental Agency; Municipalities)*
Relation with other dimensions (if any)	*Relation with the following PaM:* *G-W2 Use of Waste Incineration Plants for the waste integrated management process in Albania*

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Waste Management*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Use of Waste Incineration Plants for the waste integrated management process in Albania (G-W2)*	
Timeframe	*2020 – 2035*	
Legal basis and planning documents	*DCM No. 418 of 20.5.2020 "on the Approval of National Integrated Waste Management Strategy and the Action Plan for Albania for the period 2020–2035"; Sector Study for Investment Demand for Integrated Solid Waste Management (ISWM) in Albania (2018); DCM No. 178 of 6.3.2012, "On Waste incineration"*	
Actions taken to date	*There is an incinerator constructed and operative in Elbasan.* *The costs foreseen 2018-2022 for the investments in Fier and Tiranë moving grate incineration plants are respectively 25.5 and 76 MEur.* *As of 2020, 6 municipalities send their waste in the respective incinerators.*	
Main Objective of PaM	*Improved waste management has enabled waste collection and treatment in an integrated manner in line with EU standards. Transport of waste to plants that convert waste into energy.*	
Results to be achieved	- *Number of municipalities that send their waste in the Waste to Energy (WtE) plants from 6 in 2019 will go to 12 in 2025.* - *All municipalities within the WtE plants service range are expected to send their waste within 2030 (covering approx. 58% of the Albanian population).*	
Measures to be implemented	- *After following all the preliminary processes of differentiated collection, recycling, composting, solid waste disposal in accordance with the policies in this Document and the technical schemes established in the National Sectoral Plan for solid waste management, municipalities and other waste producers can send other combustible waste to these incineration plants in Elbasan, Fier and Tirana.* - *Support municipalities in taking incineration into account in their integrated waste management plan.*	*by 2030*
Budget (source of budgeting)	*Awareness creation and training activities for municipalities to be funded by technical assistance programmes, estimated at EUR 100,000.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; National Agency for Water Supply and Sewerage and Waste Infrastructure; Municipalities* *(National Agency for Water Supply and Sewerage and Waste Infrastructure; National Environmental Agency; Municipalities)*	
Relation with other dimensions (if any)	*Energy Efficiency* *Relation with the following PaMs:* *G-W1 Emission reduction from waste* *G-I3 Reduction of GHG emissions from cement production*	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
Sector	*Waste Management*
Modelling Scenario Considered	*WEM*
Type of Instrument	*Regulatory; Financial*
Title of PaM (Coding)	*Increase of Wastewater Treatment Plants and their related coverage (G-W3)*
Timeframe	*2020 – 2040*
Legal basis and planning documents	*National Master Plan for the Water and Sewage Sector (2013 – 2040); National Water Supply and Sewerage Strategy 2020-2030 (draft); Law No. 9115 of 24.07.2003 "on Environmental Treatment of Waste Water", amended; DCM No. 177 of 31.03.2005 "on Discharge Limits of Wastewater and Localization Criteria of Sensitive Areas"*
Actions taken to date	*Sewerage coverage at the national level has reached 56.3%. Detailed by type of service area, the sewerage coverage is 79.5% in urban areas and 16% in rural areas. Only 14.3% of the urban population is connected to wastewater treatment. There are 12 Wastewater treatment plants already in operation in Albania.*
Main Objective of PaM	*Increase the number of the wastewater treatment plants in Albania and the percentage of the population connected to wastewater treatment in Albania.*
Results to be achieved	- *The objective of Wastewater Treatment Coverage from WWTP is as follows:* *Year — Percentage* *2021 — 14* *2022 — 17* *2023 — 20* *2024 — 24* *2025 — 28* *2026 — 32* *2027 — 39* - *Sludge management strategy is expected to be approved in 2024.* - *Establishment of a laboratory for the sludge analysis in Albania is expected to be approved in 2025.*
Measures to be implemented	*Legal framework* — *by 2025* - *Full alignment with the Urban Wastewater Treatment Directive* *Financing of infrastructure* — *by 2040* - *Extend sewerage networks, license and apply tariffs for all waste-water treatment plants and build new ones, in particular in urban and coastal areas and those popular with tourists* - *State Funding for direct interventions in the wastewater treatment infrastructure, Foreign Donors (mainly IPA III and bilateral donors) and Private companies (through the Public Private Partnerships) and the project IPA (III) 2022 support to Water Sector in Albania* - *Wastewater tariff collection from citizens*
Budget (source of budgeting)	*The (draft) Water Supply and Sewerage National Strategy 2019-2030 costs approximately 1,500 MEur, with infrastructure representing 99.2% of the total and technical assistance 0.8%.* *According to National Agency for Water Supply and Sewerage and Waste Infrastructure the forecasted budget for WS, WWC and WWT was:* *Year — State Budget — Foreign Investments — Total* *2021 — 36.35 — 46.82 — 83.17 MEur* *2022 — 44.35 — 40.18 — 84.53 MEur* *This can serve as an indication for annual expenses.*
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; National Agency for Water Supply and Sewerage and Waste Infrastructure; Municipalities* *(National Agency for Water Supply and Sewerage and Waste Infrastructure; ERRU; Municipalities)*
Relation with other dimensions (if any)	

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*	
Sector	*Waste Management*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Educational*	
Title of PaM (Coding)	*Waste and wastewater related capacity building and organisational development for municipalities* *(G-W4)*	
Timeframe	*2023 – ongoing*	
Legal basis and planning documents	*DCM No. 418 of 20.5.2020 "On the Approval of National Integrated Waste Management Strategy and the Action Plan for Albania for the period 2020–2035"; Sector Study for Investment Demand for Integrated Solid Waste Management (ISWM) in Albania (2018);* *The National Sectoral Plan for solid waste management, approved by KKT Decision no. 1, dated 13.1.2020, DCM no. 418, dated 25.06.2014 "For the differentiated collection of waste at the source, DCM no. 177, dated 06.03.2012 "On packaging and their waste", amended, DCM no. 575, dated 24.06.2015 "On the approval of requirements for the management of inert waste", DCM no. 319, dated 31.5.2018 "On the approval of measures for the costs of integrated waste management".* *National Master Plan for the Water and Sewage Sector (2013 – 2040); National Water Supply and Sewerage Strategy 2020-2030 (draft); Law No. 9115 of 24.07.2003 "on Environmental Treatment of Waste Water", amended; DCM No. 177 of 31.03.2005 "on Discharge Limits of Wastewater and Localization Criteria of Sensitive Areas"*	
Actions taken to date	*Implementation of measures in G-W1, G-W2, G-W3 is ongoing*	
Main Objective of PaM	*To ensure best practice implementation of G-W1, G-W2, G-W3, e.g. regarding reducing administrative risks, establishing effective cost and tariff schemes for management services, effective data collection system on hazardous waste, etc.*	
Results to be achieved	*Improvement of the robustness of the policies and measures proposed to achieve the waste and wastewater related targets*	
Measures to be implemented	*Preparatory actions resulting in an assessment report* - *Assessment of risks and barriers hindering the effective and efficient implementation of waste and wastewater related measures* - *Identification of areas which can be addressed by capacity building and organisational development activities* *Development of capacity building and organisational development project* *Implementation of capacity building and organisational development project*	*by 2025* *by 2026* *by 2027*
Budget (source of budgeting)	*To be financed by Technical Assistance Programme, preparatory activities resulting in an assessment report, project development and implementation estimated at EUR 150,000.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Ministry of Tourism and Environment; National Agency of Waste Management (AKEM), National Agency for Water Supply and Sewerage; Municipalities* *(National Agency for Water Supply and Sewerage; National Environmental Agency; Municipalities)*	
Relation with other dimensions (if any)	*Relation with the following PaMs:* *G-W1 Emission reduction from waste (municipal Waste Integrated Management Plans)* *EE-P3: Establishment of integrated municipal / regional development plans which are linked with the NECP* *G-W2 Use of Waste Incineration Plants for the waste integrated management process in Albania* *G-W3 Increase of Wastewater Treatment Plants and their related coverage*	

Land-Use Change and Forestry

Energy Dimension	*1. Decarbonisation* *GHG emissions and removals*
Sector	*Land-use change and forestry*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Financial; Promotional*
Title of PaM (Coding)	*Increasing the natural carbon sink capacity of forestry and pastures (G-LF1)*
Timeframe	*2020 – 2030*
Legal basis and planning documents	*DCM No. 814 of 31.12.2018 "on the Approval of Forestry Policy Document for Albania for the period 2019–2030"; Law No. 57/2020 of 30.4.2020 "On Forests"*
Actions taken to date	*No report available on the progress of the measures.*
Main Objective of PaM	*Overall objective:* *Reforestation of areas within the forest fund, focusing on areas with fire damage and mass deforestation, expansion with new areas oriented mainly on agroforestry, urban and road greenery, that will lead to a regeneration of forests and the increase of their carbon sink capacity.* *Detailed objectives:* ***EU For Nature** action (funded through IPA-III, programming year 2021): This Action includes the preparation of management plan for the protected areas, update of national list of habitats, increase of enforcement capacities for nature protection and implementation of nature-based solution that are closely related with some of the activities of **EU For Forests.*** *Another upcoming initiative that will be in synergy with the Action is the **IPARD support related to Measure 11. - Establishment and protection of forests**. This upcoming support will aim at some forestation activities, management measures and protection from fire that will be coordinated with the EU 4 Forests as well in the coming period.* *The overall objective of the EU for Nature is improvement the quality of the environmental protection and contribution to actions and policies against climate change to accelerate the shift towards a low-carbon economy. The specific objectives to be directly achieved with the Action are improving both the administrative capacities and legal framework of the forestry sector in Albania, as well as the forest coverage and the carbon sink capacities for Albania.* ***Specific objective 2:** Forest coverage and the carbon sink capacities for Albania increased.* ***Output 3 (influencing Specific Objective 2):** Accounting emissions process and removals from the forests in line with the LULUCF and related acquis supported* *The management of existing forest also offers a rich portfolio of options, including conserving and enhancing the current CO_2 sink and using wood-based products to reduce emissions in other sectors through material and energy substitution. The LULUCF Regulation introduces an important change towards a harmonisation of reporting and accounting approaches as it refers to "land-based accounting". The Action will support the preparation of an assessment to identify the best options for implementation of LULCF Regulation for Albania.* ***Output 4 (influencing Specific Objective 1 and 2):** Forestry management plans and support their implementation prepared* *This Activity will support to develop and implement forests' management plans (FMP) in Albania. MTE has already approved standards for the content of management plans for protected areas and municipal forests.* ***Output 5 (influencing Specific Objective 2):** Forestation/reforestation of priority forest areas and improving management practices and technical capacity for SFM implemented* *Adapting forests to climate change and restoring forests will also require large quantities of appropriate forest reproductive material. It will take into consideration the risk of forests' wildfires due to increase temperature and climate change thus making such risks less plausible. This implies efforts to secure and sustainably use – based on ecological principles – the genetic resources on which a more climate-proof forestry depends. Particular attention should be given to the ability of the tree nursery sector to provide sufficient quantities of suitable forest reproductive materials necessary for forest adaptation and restoration and climate change.*

	Output 6 (influencing Specific Objective 2): *Grant scheme for implementing sustainable forest management measures including for forest fire and erosion prevention implemented.*	
Results to be achieved	- *Based on national circumstances, and considering the current trends, potential for afforestation areas is estimated at 300 ha per year. In 2030, the application of this measure allows a reduction of the annual emission estimated at -7 kt CO_2eq compared to the BAU scenario (NDC data).* - *Improving the efficiency on use of fuelwood results in a decrease in wood dumpings. In 2030, the application of this measure allows a reduction of the annual emission estimated at -145 kt CO2e compared to the BAU scenario (NDC data).* - *Financial support (mainly through IPARD instrument)* *The interventions to be implemented within the Action will have positive environmental impacts since they are aimed at enhancing the capacity of national stakeholders to plan for and implement measures for enabling sustainable forest management. The activities implemented will be designed to improve environmental conditions in the short- to long-term in forests and their habitats. There are no activities that could have any negative impacts on the environment, including climate or increase vulnerability to disasters. Project monitoring and evaluation program will address all environmental concerns and opportunities.* *By promoting and supporting SFM, this action will indirectly address some of the issues in environmental sustainability and improve the overall resilience of the country to climate change effects. Important is the improvement of the quality of the environmental protection and contribution to actions and policies against climate change to accelerate the shift towards a low-carbon economy.* *To be achieved:* - *Administrative capacities and legal framework in the forestry sector in Albania improved* - *Forest coverage and the carbon sink capacities for Albania increased* - *EU Forestry acquis aligned, and other legislation prepared* - *Administrative capacity and capabilities for Sustainable Forest Management and data collection and reporting improved* - *Accounting emissions process and removals from the forests in line with the LULUCF and related acquis supported* - *Forestry management plans and support their implementation prepared* - *Forestation/reforestation of priority forest areas and improving management practices and technical capacity for Sustainable Forest Management (SFM) implemented* - *Grant scheme for implementing sustainable forest management measures including for forest fire and erosion prevention implemented* - *Public awareness campaigns targeting the local communities for the sustainable forest management implemented*	
Measures to be implemented	*Legal framework* - *National planting plan in areas damaged by illegal logging and in burned areas within the forest fund* *Implementation of afforestation* - *Afforestation with new species with high growth for wood products, using bare areas, barren lands, etc. and in partnership with the individual and the enterprise* *Promotion and awareness creation* - *Promotion of Agroforestry and with fruit trees, financial or land incentives, seedlings (fruit trees / National Agency for the Rural and Agricultural Development – AZHBR), etc.* - *Promotion of street and urban greenery in parks, water resources and sensitive areas, to increase the area covered with trees / greenery and prevent natural risks*	*by 2025* *2026 on* *2025 on*
Budget (source of budgeting)	*6.5 MEur (annually for the forest sector although not specified by measures) State funds*	
Implem. Entity (Monitoring Entity)	*Ministry of Tourism and Environment; National Agency of Forests;* *National Agency of Protected Areas; National Agency for the Rural and Agricultural Development (all are involved in implementing and monitoring)*	

Relation with other dimensions (if any)	

Energy Dimension	*1 Decarbonisation* *GHG emissions and removals*	
Sector	*Land-use change and forestry*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Environmentally friendly forest management (G-LF2)*	
Timeframe	*2019 – 2030*	
Legal basis and planning documents	*DCM No. 814 of 31.12.2018 "on the Approval of Forestry Policy Document for Albania for the period 2019–2030"; Law No. 57/2020 of 30.4.2020 "On Forests"; DCM No. 466 of 3.7.2019 "on the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change"; National Determined Contribution*	
Actions taken to date	*No report available on the progress of the measures.*	
Main Objective of PaM	*Improved sustainable forest management to enhance carbon sequestration and protect biodiversity.*	
Results to be achieved	- *One of the calculations made is that improving forestry management, applied progressively on 5000 ha per year, allows a higher growth rate for the tree biomass in these areas.* - *In 2030, the application of this measure allows a reduction of the annual emission estimated at -18 kt CO_2e compared to the BAU scenario.* *(Source National Determined Contribution 2021, Table 4)*	
Measures to be implemented	*Legislative framework* - *Improvement of the legislative framework related to forestry to support environmentally friendly forest management .* *Financial support though the state budget and international funding for environmentally friendly forest management practices, such as:* - *Maintenance and improvement of forest resources and their contribution to global carbon cycles* - *Maintenance of vitality and health of forest ecosystems* - *Maintenance and promotion of productive forest functions (timber and non-timber).* - *Proper maintenance, conservation and improvement of biological diversity in forest ecosystems* - *Maintenance and improvement of protective functions in forest management (especially land and water)*	*by 2025* *2025 on*
Budget (source of budgeting)	*6.5 MEur (annually for the forest sector although not specified by measures) State funds (There is no financial calculation in the Policy Document for the implementation cost for the measures but in the Climate Change there is a calculated cost of 1.22 MEur based also on the ISARD and other sources for L14)*	
Implem. Entity (Monitoring Entity)	*Ministry of Tourism and Environment; National Agency of Forests; National Agency of Protected Areas; National Agency for the Rural and Agricultural Development (all are involved in implementing and monitoring)*	
Relation with other dimensions (if any)		

3.1.3 Renewable Energy

In the tables below are the Policies and Measures divided by the sectors they are related to.

Electricity, Heating and Cooling

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WEM and WAM (see results section)*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Mechanism of Feed-in-Tariff for small renewable capacity approved before the entering in force of the law No. 24/2023, dated 14.04.2023, "For promoting the use of energy from renewable sources"* *(R-E1)*	
Timeframe	*2021 -2030*	
Legal basis and planning documents	*DCM No. 580 of 28.8.2019 "on the Approval of the National Consolidated Action Plan for the RES 2019-2020"; DCM No. 369 of 26.4.2017 "on the Methodology Approval for the Establishing the Purchasing price of the Electric Energy produced by solar and wind small renewable sources"*	
Actions taken to date	*According to the Strategy, 45 contracts according to this scheme have already been signed.*	
Main Objective of PaM	*The objective is to increase the renewable energy capacity by providing a support scheme (FiT) to small renewable energy capacity. This support scheme is applicable for the projects that have the final approval from MIE before. Based on the law No. 24/2023, dated 14.04.2023, "For promoting the use of energy from renewable sources", support for renewable energy electricity generation is now provided through a competitive process in the form of contract for support in accordance with the provisions of this law.*	
Results to be achieved	- *The objective is to promote the increase of energy production from renewable sources to ensure a sustainable development in the Republic of Albania, in accordance with the obligations under the Energy Community Treaty.* - *This measure also contributes to the National Target on RES till 2030 related to the share of renewable sources compared with the Gross Final Energy Consumption and specifically to reach the target for renewable energy for electricity generation* *For the WEM:* - *Additional Small hydropower plants would be constructed as parts of permits already attributed earlier. It is expected that 40 MW per year would be added during the period 2021-2028, or 320 MW in total.* *For the WAM:* - *It is expected that 100 MW of additional PV would be added to the grid by 2030, No substantial increase for other technologies.*	
Measures to be implemented	*Application of FiT tariff for the project that has the final approval for construction already attributed earlier.* - *All renewable energy capacity below 2 MW (or 3 MW for wind energy) and showcase pilot projects can benefit from a FiT tariff.* - *The tariffs are calculated by ERE to ensure a sufficient return on investment for all renewable energy operators.* - *The Energy Regulatory Entity approves the purchase price of electricity produced from small renewable sources from the sun and wind, in accordance with the average price for 2017, according to the forecasts of the methodology set in the DCM No. 369.* - *As of 2019, the ERE price that is included in the strategy is 100 €/MWh for sun and 76 €/MWh for wind.*	*2020 on*
Budget (source of budgeting)	*No state budget foreseen because the cost of scheme would be covered by the electricity tariffs. Nevertheless, there is an impact for the budget of the offtaker, which is finally owned by the government.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Energy Regulatory Entity; Private Operators* *(Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	

Relation with other dimensions (if any)	*Energy Security*

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WEM and WAM (see results section)*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Auctions for new renewable capacity (wind and solar) and storage; Approval of the 3 year auction plan* *(R-E2)*	
Timeframe	*2017 ongoing*	
Legal basis and planning documents	*DCM No. 580 of 28.8.2019 "on the Approval of the National Consolidated Action Plan for the RES 2019-2020"; Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"*	
Actions taken to date	*Karavasta and Spitalla auctions have already been signed.*	
Main Objective of PaM	*The objective is to increase the renewable energy capacity (wind and PV) by organizing auctions; Develop transparent and competitive quantity-based action plan for renewable energy and storage; Planning for 3 years in place.*	
Results to be achieved	- *The objective is to promote the increase of energy production from renewable sources to ensure a sustainable development in the Republic of Albania, in accordance with the obligations under the Energy Community Treaty.* - *This measure also contributes to the National Target on RES for 2030-related to the share of renewable sources compared with the Gross Final Energy Consumption.* - *Adopt a quantity based auction plan for at least 600 MW of new renewable energy capacities installation for the following three years (ongoing for 300MW to be considered as part of the triennial Auction plan)* *For the WEM:* - *Karavasta PV 140 MW is in operation* - *Spitalla PV 100 Mw to be in operation up to 2030* - *220 MW of wind capacity to be added by 2030.* *For the WAM:* - *At least 100 MW of PV to be added per year from 2024 to 2030 (total of 600 MW)* - *At least 60 MW of wind capacity to be added from 2026 to 2030 (total of 300 MW)* - *Auction on Storage capacity* - *Implementation of the 3 years quantity based auction plan.*	
Measures to be implemented	*Management of auctions for renewable energy capacity:* - *The auctions are on competition (market-based).* - *The selected bidder from the auctions receive a PPA convertible in CfD based on the provisions of the Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources*	*2017 on*
Budget (source of budgeting)	*No state budget foreseen because the cost of scheme would be covered in a Renewable Energy Obligation that would be paid by each supplier and ultimately by each electricity consumer.*	
Implem. Entity (Monitoring Entity)	*Council of Ministers; Energy Regulatory Entity; Private Operators* *(Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	
Relation with other dimensions (if any)	*Energy Security*	

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Cross cutting*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory and Technical*	
Title of PaM (Coding)	*Energy spatial planning for increasing the share of renewable energy and improve energy efficiency* *(R-E3)*	
Timeframe	*2023 – ongoing*	
Legal basis and planning documents	*Law No. 107/2014 of 31.7.2014 "on Territorial Planning and Development", amended and related bylaws* *Law No. 81/2017 of 4.5.2017 "on Protected Areas" and related bylaws* *Renewable Energy Directive (REDII, amended by Directive (EU) 2023/2413)*	
Actions taken to date	*No actions taken to date, new activity.* *State Authority for Geospatial Information (ASIG) provides a GIS that can be built upon: https://geoportal.asig.gov.al/en/services*	
Main Objective of PaM	*To identify priority areas for energy-related land use, in order to simplify and accelerate permit procedures and increase investment security*	
Results to be achieved	*An officially approved and publicly accessible map which displays priority areas for the use of specific renewable energy sources, building renovations, and other energy-related actions relevant for project developers*	
Measures to be implemented	*<u>Regulatory:</u> The procedure for developing the map and the explanatory document must be defined, as well as the procedure for public consultation, approval and revision of the map and the explanatory document.*	*by 2025*
	<u>Technical:</u> Scientific study resulting in a map, supplemented by an explanatory document; exemplary content: - *<u>Photovoltaic capacities</u>: With regard to land use, there are conflicting goals (e.g., with ecosystem services of open spaces) and synergy effects (e.g., multiple uses of PV in landfill areas and as noise protection along highways and railroads; floating PV on reservoirs and use in port areas; large roof areas of storage halls, industries, etc.,). These opportunities are identified and located.* - *<u>Waste heat capacities</u> need to be surveyed and located and potential uses identified.* - *<u>Building renovation needs</u> are identified and located as the basis for developing optimized demand side and supply side measures, making the best use of renewable energy sources.*	*by 2026*
	<u>Implementation:</u> - *Public consultation and revision of study* - *Approval of map and explanatory document* - *Publication of map and explanatory document*	*by 2026*
Budget (source of budgeting)	*Preparation of legal framework and scientific study to be financed by Technical Assistance Programme, approx. 0.5 MEur.*	
Implem. Entity (Monitoring Entity)	*Responsible ministry and / or agency*	
Relation with other dimensions (if any)	*Relation with the following PaMs:* *EE-P2 Municipalities Energy Efficiency Action Plans, implementation, and reporting* *G-W1 Emission reduction from waste (municipal Waste Integrated Management Plans)* *EE-P3: Establishment of integrated municipal / regional development plans which are linked with the NECP* *G-W2 Use of Waste Incineration Plants for the waste integrated management process in Albania*	

	R-E11 Heat maps

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Mechanism of net metering for installations up to 500 kW (R-E4)*	
Timeframe	*2017 ongoing*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources". Guideline of the Minister of Infrastructure and Energy No. 3 of 20.6.2019 "on the Approval of the Simplified Authorisation Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Sources"*	
Actions taken to date	*OSHEE has already included in its website the standards applicable to the meter but does not have a database of the projects already implemented.* *Total installed capacity is around 160 MW.*	
Main Objective of PaM	*The objective is to encourage households and consumers (up to an installation of 500 kW) to install renewable capacity and to promote self-consumption.*	
Results to be achieved	- *Increase of energy production from renewable sources to ensure a sustainable development in the Republic of Albania, in accordance with the obligations under the Energy Community Treaty* - *This measure also contributes to the National Target on RES till 2030 ~~(54.4%)~~ related to the share of renewable sources compared with the Gross Final Energy Consumption and specifically to reach the target for renewable energy for electricity generation (RES-E ~~- 239 ktoe).~~* - *The increase of renewable capacity, mostly PV, is not presented separately for this measure but the total capacity is supposed to be reflected in the R-E1.* - *The increase of self-consumption will improve the energy security by diversifying the generation sources of the electricity sector.*	
Measures to be implemented	*The following scheme is implemented based on the law 7/2017:* - *According to the renewable energy law of 2017, a small or medium-sized company or a household customer can install a total capacity of up to 500 kW to generate electricity from wind or solar to cover some or all of the energy needed for the needs and inject the excess energy produced in the distribution network.* - *Customers, according to the net energy metering scheme, must install at their own expense a two-way meter.* - *Net balance and billing are done on a monthly basis for each metering point. Surplus electricity greater than monthly consumption is sold to the universal service provider, charged with the public service obligation, according to the price set by the ERE, based on the methodology approved by the Council of Ministers, on the proposal of the Minister.* *The following scheme is implemented based on the law 24/2023:* - *The concept of renewables self-consumers established in Albania by Law no. 24/2023 is expanding the empowerment of final customers. Renewables self-consumers shall have a maximum capacity of 500 kW and shall have the right to generate, consume, store and sell their excess production of renewable electricity, individually or through aggregators, including through bilateral agreements, electricity suppliers and peer-to-peer trading arrangements.* - *The compensation scheme of renewables self-consumers based on a net-billing methodology from 1 January 2024.*	*2017 on*

	- *The renewables self-consumer's installation may be owned by a third party or managed by a third party for installation, operation, including metering and maintenance, provided that the third party remains subject to the renewable self-consumer's instructions. The third party itself is not considered a renewables self-consumer.* - *Renewables self-consumers located in the same building, including multi-apartment blocks, are entitled to engage jointly as renewables self-consumers and are permitted to arrange sharing of renewable energy that is produced on their site or sites between themselves.* - *Approval of the Simplified Authorisation Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Source.*	
Budget (source of budgeting)	*No state budget foreseen because the cost of scheme is indirectly covered by the electricity tariff. There is no payment towards producers, only a reduction in their electricity bills.*	
Implem. Entity (Monitoring Entity)	*OSHEE, Private companies* *(OSHEE; Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	
Relation with other dimensions (if any)	*Energy Security*	

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered **Type of Instrument**	*WEM* *Technical; Financial*	
Title of PaM (Coding)	*Robust power grid to accommodate increased renewable energy capacity, investment in renewable energy capacity in the free market* *(R-E5)*	
Timeframe	*2017 ongoing*	
Legal basis and planning documents	*The law 43/2015 "On power sector" as amended; Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"*	
Actions taken to date	*Ongoing investments in the Distribution and Transmission grid. Increase private investment in generation of energy from renewable energy sources.*	
Main Objective of PaM	*The objective is to increase the capacity of the electricity grid, both transmission and distribution, to cater for more renewable energy sources. This is especially important for the distribution grid, as the FiT and net metering support schemes have a large impact on the distribution grid. Increase private investment in generation of energy from renewable energy sources.*	
Results to be achieved	*Same as the main objective*	
Measures to be implemented	*Refurbishment of distribution network – investment in technical infrastructure* - *Reconstruction and rehabilitation of electrical substations* - *Reconstruction of power transmission lines* - *Implementation of Network Analysis System through PMU (Phasor Measuring Unit).* - *Creating new connecting nodes* *Management of technical infrastructure* - *Improving the process of management, control, measurement* - *Access and guarantee of transmission and distribution of electricity from renewable sources in the transmission network*	*2017 on*
Budget (source of budgeting)	*According to some preliminary estimates, some EUR 40 to 80 MEur investments are required in order to refurbish the distribution network to better handle variable renewable energy injection in the immediate term.* *The budget is included in the investment plans of the transmission and distribution companies. No separate budget is foreseen.*	

Implem. Entity (Monitoring Entity)	*Council of Ministers; Energy Regulatory Entity (Ministry of Infrastructure and Energy; Energy Regulatory Entity)*
Relation with other dimensions (if any)	*Energy Security*

Energy Dimension	*1. Decarbonisation Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Facilitate regulatory and physical connection to the electricity grid (R-E6)*	
Timeframe	*2017 ongoing*	
Legal basis and planning documents	*DCM No. 580 of 28.8.2019 "on the Approval of the National Consolidated Action Plan for the RES 2019-2020"; Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"; Law No. 43/2015 of 30.4.2015 "On power sector", amended*	
Actions taken to date	*No information on the action taken to date*	
Main Objective of PaM	*Facilitate the increase of new renewable energy capacity*	
Results to be achieved	*Transmission and distribution system operators shall, upon the request of a producer of energy from renewable sources, and in accordance with codes and regulations approved by ERE, propose as connection point to their network the one point which meets the most favourable conditions for the renewable energy producer from point of view of cost and distance to the grid.*	
Measures to be implemented	*All regulatory actions required to reach the objective.*	*by 2025*
Budget (source of budgeting)	*No budget foreseen since it mainly related to the regulatory action.*	
Implem. Entity (Monitoring Entity)	*Council of Ministers; Energy Regulatory Entity (Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	
Relation with other dimensions (if any)	*Energy Security*	

Energy Dimension	*1. Decarbonisation Renewable Energy*
Sector	*Electricity, Heating & Cooling*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Demand side management and electricity storage systems for power grid flexibility (R-E7)*
Timeframe	*2025 ongoing*
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"; Law No. 43/2015 of 30.4.2015 "On power sector", amended*
Actions taken to date	*No action taken to date*
Main Objective of PaM	*Achieve greater operability of the distribution grid to be able to cater for more distributed renewable capacity.* *Make use of buildings including charging stations for electric vehicles as a flexibility reserve for the power grid* *Implement projects for electricity storage.*
Results to be achieved	*Preliminary studies to understand the potential for DSM and storage:* - *Link with the construction on new generation capacities* - *Link with net metering scheme*

	- *Link with the installation of smart meters (metering strategy)* - *Link with the increase of electric vehicles* - *Link with the developments of the Energy Performance of Buildings Directive regarding installation of charging stations in buildings and building automation and control systems with regard to the smart readiness of buildings*	
Measures to be implemented	*The transmission system operator, together with the ministry and the regulator, will undertake studies in order to see the true potential for DSM and storage in Albania. Based on such studies, some implementation actions would be undertaken.*	*by 2026*
Budget (source of budgeting)	*Studies to identify the potential of demand side management and electricity storage systems for power grid flexibility; to be financed by a Technical Assistance Program, approx. EUR 150,000.*	
Implem. Entity (Monitoring Entity)	*Council of Ministers* *(Ministry of Infrastructure and Energy; OST)*	
Relation with other dimensions (if any)	*Energy Security* *Relation with the following PaMs:* *R-T1 Electrification of the transport sector* *R-T3 Installation of charging stations for Electric Vehicle and installation of photovoltaic panels*	

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Metering strategy and digitalization of the power sector* *(R-E8)*	
Timeframe	*2021 and on*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"; Law No. 43/2015 of 30.4.2015 "On power sector", amended*	
Actions taken to date	*The actions taken consist in: (i) Preparation of the metering strategy; and (ii) Pilot phase for smart meters in the regions of Tirana and Durres. As of the end 2021 approx. 700 consumers connected to the medium voltage are equipped with smart meters.*	
Main Objective of PaM	*To transform the electricity network into a smart grid and to move towards a more digitalized power sector.* *To create the technical and software infrastructure required for extending the intelligent metering system to consumers connected to the medium and low voltage.* *The increase of appropriate meters will enable a further liberalization of the power sector, rendering the electricity sector more market-oriented.*	
Results to be achieved	- *Improved billing collection, increased transparency and increased access for the real-time metering of electricity consumption* - *The operational cost of metering of the electricity consumption will be reduced (through optimisation of the costs of reading, disconnection and reconnection of supplies, etc.)* - *The losses in the grid (non-technical and commercial) are reduced* - *Ensure a proactive management of the distribution grid by the use of adequate informatics tool and smart metering data (digitalization)*	
Measures to be implemented	*Preparation of smart meter roll-out:* - *Capacity building of the operators to manage the smart meters and the associated equipment and creating a database* *Roll-out phase I:* - *Installation of smart balance meters in all medium and low voltage transformers* - *Intelligent metering system to be extended to the whole customers connected to the medium voltage (approx..7,400 businesses)*	*by 2024* *by 2026*

	RoI-out phase II: - *The intelligent metering system to be extended to the consumers connected to low voltage (small businesses and household consumers).* - *Priority will be given to installation of smart meters in the areas /directories with large losses (Durres, Shkodra, Kukes, Vlora, Burrel).*	*by 2028*
Budget (source of budgeting)	*According to the metering strategy, the medium-term investment required are estimated at 3,691 mil ALL (approx. 29.5 MEuro).*	
Implem. Entity (Monitoring Entity)	*Distribution company OSSH sha, private companies* *Ministry of Infrastructure and Energy, OSHEE sha.* *(Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	
Relation with other dimensions (if any)	*Energy Efficiency*	

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Organisational, Promotional*	
Title of PaM (Coding)	*Supporting the formation of renewable energy communities (R-E9)*	
Timeframe	*2024 and on*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"* *Renewable Energy Directive (REDII, amended by Directive (EU) 2023/2413)*	
Actions taken to date	*No action taken to date*	
Main Objective of PaM	- *Fostering a renewable energy revolution: With Directive on the promotion of the use of energy from renewable sources (EU) 2018/2001 (REDII) and Directive on common rules for the internal electricity market (EU) 2019/944, the European legislator not only introduced a comprehensive reorganisation of the European funding and subsidies framework in the field of renewable energy, but also addressed the issue of citizen participation in order to foster a renewable energy revolution in Europe.* - *Enhancing self-consumption: Supporting the citizens is an instrument to enhance self-consumption in suitable areas and transform them into renewable energy communities (according to article 21 and article 22 REDII). According to REDII article 2 (16) 'renewable energy community' means a legal entity: (a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; (b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities; (c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits. Good examples can be found at https://www.rescoop.eu/*	
Results to be achieved	*Establishment of renewable energy communities*	
Measures to be implemented	- *To carry out a screening study to clarify which support is needed and which municipalities would qualify for pilot & demonstration activities because there is an active civil society initiative.* - *Draft secondary legislation that provides for the implementation of renewable energy communities.* - *Put in place the organisational and promotional support structure* - *Support the establishment of selected pilot renewable energy communities and promote them*	*by 2025* *by 2025* *by 2026* *by 2026*
Budget (source of budgeting)	*Screening study and development of legal and organisational framework to be financed by a Technical Assistance Program, approx. EUR 150,000. Support for pilot projects with selected*	

	renewable energy communities to be financed by a Technical Assistance Program, approx. EUR 20,000 per renewable energy community.
Implem. Entity (Monitoring Entity)	*Municipalities, Distribution company OSSH sha, Energy Regulatory Entity (Ministry of Infrastructure and Energy; Energy Regulatory Entity)*
Relation with other dimensions (if any)	*Energy Security*

Energy Dimension	*1. Decarbonisation Renewable Energy*	
Sector	*Electricity, Heating & Cooling*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Participation in a regional system for guarantee of origin (GO) (R-E10)*	
Timeframe	*2023 and on*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"* *Renewable Energy Directive (REDII, amended by Directive (EU) 2023/2413)*	
Actions taken to date	- *ERE joined the initiative of the Energy Community Secretariat for the establishment of a regional system for guarantee of origin (GO).* - *ERE with the Decision of Board of Commissioners No 140 of 14.04.2023 approved the authorisation of ERE Chairperson to sign the agreement and join the regional system within May 2023.*	
Main Objective of PaM	*Guarantees of origin are used to prove the origin of electricity generated from renewable energy sources and thus enable the decarbonisation of the electricity system.*	
Results to be achieved	*The main outcome of the project is the electronic register/domain for each issuing body in line with the REDII and European Energy Certificate System (EECS) and a regional system which will enable trade of GOs among Contracting Parties.*	
Measures to be implemented	- *Adoption of the necessary secondary legislation* - *Set up of the organisational infrastructure, the hardware and the software* - *Make use of the regional GO trading system*	*by 2024* *by 2024* *2024 on*
Budget (source of budgeting)	*Service provider Grexel on behalf of Energy Community (https://www.energy-community.org/news/Energy-Community-News/2023/06/06.html)*	
Implem. Entity (Monitoring Entity)	*Council of Ministers; Energy Regulatory Entity* *(Ministry of Infrastructure and Energy; Energy Regulatory Entity)*	
Relation with other dimensions (if any)		

Energy Dimension	*1. Decarbonisation Renewable Energy*
Sector	*Electricity, Heating & Cooling*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Information*
Title of PaM (Coding)	*Heat maps (R-E11)*
Timeframe	*2024 – 2030*
Legal basis and planning documents	*Law No 124/2015 of 12.11.2015 "On energy efficiency"* *Guideline of Minister of Infrastructure and Energy No 2 of 1.02.2023 "On elements, requirements and general principles of cost-benefit analysis for assessing the potential of application for high efficiency cogeneration and efficient heating and cooling"*
Actions taken to date	*No actions taken to date*

	This PaM can build on the Fund "Renewable District Energy in the Western Balkans" (ReDEWeB) funded by EBRD (https://www.energy-community.org/dam/jcr:1e419b0f-0832-421f-82aa-b66f6a19daa6/CARi_EBRD_0222.pdf)	
Main Objective of PaM	*To contribute to the decarbonisation of heating (including provision of domestic hot water)*	
Results to be achieved	*Municipal heat maps as a basis for decision making for decarbonising the heat supply*	
Measures to be implemented	*Study* - *Identify the location of current heating demand as well as supply on a map* - *Identify renewable energy potential to supply heating for a selected area;* - *Calculate the potential for efficient district heating options within a selected area; Estimate and compare the costs of individual heating vs. district heating options within a selected area;* - *Assessment of results and recommendations regarding the optimal energy mix for district heating supply within a certain area. Example: https://www.hotmaps-project.eu/how-to-use/*	*by 2026*
	Legal framework for implementing heat maps as part of energy spatial planning	*by 2028*
Budget (source of budgeting)	*To be financed by a Technical Assistance Program, e.g. through EBRD (referring to (ReDEWeB), estimated at 0,5 MEur.*	
Implem. Entity (Monitoring Entity)	*Municipalities; Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Relation with the following PaM:* *R-E3 Energy spatial planning for increasing the share of renewable energy and improve energy efficiency*	

Transport Sector

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Transport*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Electrification of the transport sector (R-T1)*	
Timeframe	*2021-2030*	
Legal basis and planning documents	*Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"*	
Actions taken to date	*Renewable energy for the transport sector (RES-T) in 2020 remains in the range of 20.3 ktoe from the expected 62 ktoe.*	
Main Objective of PaM	*Increase the electrification in the transport sector*	
Results to be achieved	*10% of electric vehicles (all fleet) by 2030*	
Measures to be implemented	*Legal framework:* - *Establish legal obligations towards economic operators including their enforcement, such as the setup of obligations for public parking or public garages to have electric vehicle charging stations.*	*by 2025*
	Incentives and support: - *Incentives or simplified procedures for construction/licensing of electricity charging stations for road vehicles, or for construction/licensing of hydrogen refuelling stations* - *New vehicles with zero-km electric engine, not previously registered in any other country, is entirely exempted from VAT*	*by 2025*
	Policies should be revised and possibly adjusted in around 2025 based on a policy and results evaluation.	*2025*

Budget (source of budgeting)	*Staff cost for enforcement, that is for example setting up a registry/a map of public parking/public garages and carrying out random inspections. Cost could be (partly) covered by penalties for non-compliance.* *The cost for the policy and results evaluation study is estimated at EUR 15,000.*
Implem. Entity (Monitoring Entity)	*National Agency of Natural Resources; Ministry of Infrastructure and Energy*
Relation with other dimensions (if any)	*Energy Security*

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Transport*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Fiscal*	
Title of PaM (Coding)	*Sustainable / Advanced biofuels* *(R-T2)*	
Timeframe	*2021-2030*	
Legal basis and planning documents	*Draft Law "On the production, transport and trading of biofuels and other renewable combustibles for transport"; Law No 24/2023 of 23.03.2023 "On promoting the use of energy from renewable sources"*	
Actions taken to date	*The actions taken up to date are: (i) Zero level of the excise tax for clean biodiesel until 2018; (ii) Machinery and equipment to be used for the construction of biofuel production plants are exempt from customs duties. Exemption from customs duties and VAT for: - equipment and machinery that convert manure in organic soil improvers, which can be used for the cultivation of plants for the purpose energy; agricultural equipment, materials and machinery that will be used by local farmers for cultivation of plants for energy purposes; technological equipment and machinery, main and auxiliary, of production plants of biofuels and other fuels, of renewable; (iii) MEI publishes through legal vehicle dealers and the Automobile Club in the Republic of Albania data on the efficiency of existing engines in accordance with the quality of fuel used; (iv) The supervision of biofuels quality from the Technical State Inspectorate and the Offices of the assessment of sustainability criteria; (v) Tax exemptions for the use of biofuels; (vi) Criteria for biofuels verification; (vii) The holders of the "production license" for the production plants of biofuels and other renewable fuels are obliged to report to the Ministry of Infrastructure and Energy the production costs (ex-factory) of these products; (viii) The reimbursed of excise for biofuels used in the transport sector and stored in the territory of the Republic of Albania for the value of excise duty paid up to 5%. Reimbursement for the quantity of biofuels is made until 2020; (ix)The excise rate is calculated based on the unit of measurement, and for some of the most important energy products is differentiated.*	
Main Objective of PaM	*The aim of the policy is to promote the production and use of biofuels and other renewable fuels that meet the sustainability criteria.*	
Results to be achieved	- *Options for renewable fuels production beyond the 2030 target may provide opportunities for exports, e.g., by producing and exporting biofuels based on used cooking oil and tallow, or by producing liquid fuels from renewable electricity (RFNBO).* - *Biofuels are anticipated to contribute most to the target, including crop-based, waste-based and advanced biofuels.* - *Target of 10% of biofuel by 2025*	
Measures to be implemented	*Legal framework for organizing the market of biofuels and other renewable fuels:* - *Determining the minimum annual amount of biofuels and other renewable fuels to be marketed in the transport sector* - *Penalties for fuel suppliers that do not fulfil their obligations* - *Imposition of fines for retailers of fuel products if it is not published that biofuels of other renewable fuels, as well as oil or petroleum, mixed with bio-oil and bioethanol in the amount of 5%*	*by 2024*

	- *Determining the requirements related to the verification of biofuel sustainability criteria* - *Blending obligation* - *Setting Tariffs for required certificates and permits* - *Each company holding a license for "Wholesale trade of oil, gas, by-products, including bio, as well as fuels, with code VIII.1.A". for wholesale trade in the market must take measures to ensure the placement on the market of the minimum quantity of biofuels and other renewable fuels. These quantities must meet the sustainability criteria.* - *Carrying out inspections by the responsible State Inspectorate* *Incentive and support scheme:* - *Promotion of raw materials for the production of biofuels by applying sustainability criteria* - *The setup of the support measures available to purchasers of alternative-fuelled vehicles, and provisions in respect of the compatibility of vehicles with various alternative fuel types*	*by 2024*
Budget (source of budgeting)	*Estimate is EUR 124,000.00 per year, based on the National Action Plan for Renewable Energy Resources in Albania 2015-2020.* *The monetary value of the costs and benefits of the potential impacts could not be determined due to limited data and information.*	
Implem. Entity (Monitoring Entity)	*National Agency of Natural Resources; Ministry of Infrastructure and Energy; Ministry of Finance and Economy; General Directorate of Taxes; General Customs Directorate.* *(State Industry Inspectorate; Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Energy Security*	

Energy Dimension	*1 Decarbonisation* *Renewable Energy*	
Sector	*Transport*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Financial*	
Title of PaM (Coding)	*Installation of charging stations for Electric Vehicle and installation of photovoltaic panels (R-T3)*	
Timeframe	*2024 – 2027*	
Legal basis and planning documents	*DCM No. 633 of 26.10.2018, "On Measures against air pollution by emissions of engines vehicles and reduction of air emissions of gaseous pollutants and particulate matter from positive ignition engines and Compressed Ignition engines using natural gas and Liquefied petroleum gas used for vehicles ", amended; Law No. 9957 of 28.7.2008 "on National Taxes", amended*	
Actions taken to date	*The Agency for Energy Efficiency has made the survey for the estimation of the total EV stations needed on the first phase of the project that cover the years 2023-2027. The Agency for Energy Efficiency has conducted a project called "The drafting of the detailed project for the installation of charging towers for electric cars in the Republic of Albania". Through this project, a detailed installation map of EV chargers across the Republic of Albania has been prepared, which is completed with technical details and economic evaluations.*	
Main Objective of PaM	- *Increase energy efficiency;* - *Increase investment in energy transmission and distribution infrastructure;* - *Increase self-production of energy from renewable sources;* - *Increase of electric cars fleet by providing them the right infrastructure.*	
Results to be achieved	- *Installation of charging stations for Electric Vehicles in the existing access points along the national roads, border points and tourist areas.* - *Increased share of Renewable Energies and reduced electricity consumption from the electrical grid.*	
Measures to be implemented	- *Investment in infrastructure for charging stations to facilitate and incentivize the e-mobility market.*	*2024 on*

	- *Investment in PV systems resulting in increased share of renewable energies and reduced electricity consumption from the electrical grid.*	
Budget (source of budgeting)	*13.5 MEur (IPA III Window 3: Green agenda and sustainable connectivity)*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Ministry of Tourism and Environment, General Directorate of Transport, Local Government Units* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Energy Security* *Relation with the following PaM:* *R-E7 Demand side management and electricity storage systems for power grid flexibility*	

Industry sector

Energy Dimension	*1. Decarbonisation* *Renewable Energy*	
Sector	*Industry Sector - SMEs*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Investment, Financial; Information; Educational*	
Title of PaM (Coding)	*Supporting the deployment of small-scale renewable energy applications in the non-food industrial sector* *(R-I1)*	
Timeframe	*2025 and ongoing*	
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; DCM No. 369 of 36.4.2017 "on the Methodology Approval for the Establishing the Purchasing price of the Electric Energy produced by solar and wind small renewable sources"; Guideline of the Minister of Infrastructure and Energy No. 3 of 20.6.2019 "on the Approval of the Simplified Authorisation Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Sources"*	
Actions taken to date	- *Drafting of the legal acts* - *There are some initiatives from industries for the development and implementation of small-scale renewable energy applications.*	
Main Objective of PaM	*To develop the "Green Industry" concept by promoting and supporting the deployment of small-scale renewable energy applications in the non-food industrial sector and to develop technical capacities and business skills to encourage entrepreneurship.*	
Results to be achieved	- *Enhanced local manufacturing SMEs capacities for accelerated deployment of small-scale renewable energy applications* - *Policy and regulatory frameworks conducive to development and implementation of small-scale renewable energy applications* - *Enhanced financing mechanisms*	
Measures to be implemented	*Draft policies and regulations to support selected small scale renewable energy technologies, e.g.by means of grants* *Investment measures* - *Pilot SMEs to implement renewable energy small-scale demonstration projects* - *Project monitoring and evaluation* *Education and information:* - *Trainings for SMEs to expanded capacity of local supply chain and service market for demonstration of renewable energy technologies (technology transfer, project developers, installation, operation and maintenance, service providers, etc.)* - *Development of participatory platforms for the promotion (raise awareness), development and implementation of small-scale renewable energy applications* - *Information to local financing institutions about renewable energy*	*by 2025* *2025 on* *2025 on*

Budget (source of budgeting)	*Indicative Budget: 2 MEur*
Implem. Entity (Monitoring Entity)	*Non-food industry operators; Albanian Energy Efficiency Agency* *(Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency)*
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency; Research, Innovation & Competitiveness*

Energy Dimension	*1 Decarbonisation* *Renewable Energy*	
Sector	*Industry Sector - Water*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Investment, Financial*	
Title of PaM (Coding)	*Assessment of energy use and opportunities for implementation of renewable energy sources in the water sector* *(R-W1)*	
Timeframe	*2023-2027*	
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; DCM No. 369 of 36.4.2017 "on the Methodology Approval for the Establishing the Purchasing price of the Electric Energy produced by solar and wind small renewable sources"; Guideline of the Minister of Infrastructure and Energy No. 3 of 20.6.2019 "on the Approval of the Simplified Authorisation Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Sources"*	
Actions taken to date	*Preparatory activities have taken place. To ensure effective coordination among all stakeholders, separate meetings have been held/will be held with the World Bank, AEE, AKUM, OSHEE/DSO/USS, and the Swiss ongoing Smart Energy Municipalities Project in Albania (SEMP). The purpose of these meetings is to discuss in a more focused and detailed manner the issues related to each area of support.*	
Main Objective of PaM	- *Assessment of energy use and opportunities for implementation of renewable energy sources in the water sector* - *Improving energy efficiency and implementing the renewable energy sources on water supply and wastewater system*	

Results to be achieved	- *Identification and utilisation of energy efficiency and renewable energy potential for the water and waste water sector:*
	  o *Potential of water supply and wastewater system to operate as a self-energy consumer;*
	  o *Less water wastage at customer level resulting in lower per capita production figures;*
	  o *Better customer satisfaction and willingness to pay for water / waste water services resulting in a better collection efficiency and cash-flow;*
	  o *Reduced number of bursts/leaks and technical losses through more stable operating pressures and better pressure management;*
	- *Promotion of the new forms of cooperation between Energy Service Companies, including between businesses located in different regions or countries.*
	- *Set an example by showing that energy efficiency, renewable and environmental considerations are being taken into account.*	

Measures to be implemented	- *Assessment on opportunities of the renewable energy sources for electricity production, connection with the existing grid network, new pumping systems with efficient pumps and motors and reduction of the very high non-revenue-water (water that has been "lost" before it reaches the customer) ensuring better use of energy with a significant reduction in the amount of water that needs to be pumped.* - *Investments into renewable energy sources and energy efficient pumping systems for most of the water supply plants/systems where emergency intervention ensure and increase the hours of supply and*	*by 2025* *2025 on*

	move towards attaining 24 hours of supply and reduce electricity consumption from the electrical grid.	
Budget (source of budgeting)	*Overall cost 14.7 MEur IPA III (2023 – 2027), Window 3: Green agenda and sustainable connectivity*	
Implem. Entity (Monitoring Entity)	*Water and wastewater operators; Albanian Energy Efficiency Agency* *(Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Energy Efficiency*	

3.2 Dimension Energy Efficiency

3.2.1 Overarching legal framework

The main legal acts (including strategies and plans) related to this dimension are listed below:

1. **Law No.155/2020 of 17.12.2020 "on Climate Change"**
2. **Law No. 7/2017 of 2.2.2017 "on the Promotion of the Use of Energy from Renewable Sources"**
3. **Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"**
4. **Law No. 124/2015 of 12.11.2015 "On Energy Efficiency"**
5. **Law No. 43/2015 of 30.4.2015 "on Power Sector", amended**
6. **Law No. 9463 of 20.11.2006 "on Public procurements", amended**
7. **DCM No. 580 of 28.8.2019 "on the Approval of the National Consolidated Action Plan for the RES 2019-2020"**
8. **DCM No. 466 of 3.7.2019 "On the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change"**
9. **DCM No. 407 of 19.6.2019 "On the approval of procedure, categories, conditions, qualifications and professional experience requirements for the person who will be the holder of the energy auditor certificate"**
10. **DCM No. 342 of 22.05.2019 "On the approval of categories, conditions and requirements of qualification for energy manager"**
11. **DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"**
12. **DCM No. 709 of 1.12.2017 "on the Approval of the second and third Action Plan for the Energy Efficiency 2017 – 2020"**
13. **DCM No. 369 of 26.4.2017 "on the Methodology Approval for the Establishing the Purchasing price of the Electric Energy produced by solar and wind small renewable sources"**
14. **DCM No. 811 of 16.11.2016 "On approval the sectorial transport strategy and action plan 2016-2020" (TSSAP)**
15. **DCM No. 872, dated 29.12.2021 "Approval of NECP 2020 – 2030"**
16. **Guideline of the Minister of Infrastructure and Energy No. 3 of 20.6.2019 "on the Approval of the Simplified Authorization Procedure for the Connection with the Distribution Grid of Small Renewable Projects of Self producers of Electric Energy from Solar Sources"**
17. **Sectoral strategy of transport & action plan 2016 – 2020** (2019 Monitoring report)
18. **Law "On the production, transport and trading of biofuels and other renewable combustibles for transport"** (draft version)
19. **Sustainable Transport Plan** (draft version)

In the Tables below are the Policies and Measures divided by the sectors they are related to.

3.2.2 Energy efficiency obligation schemes and alternative policy measures

Energy Dimension	*2. Energy Efficiency*	
Sector	*Energy efficiency obligation schemes and alternative policy*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Energy efficiency obligation scheme and alternative measures for Albania (EE-O1)*	
Timeframe	*2023-2030*	
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "On Energy Efficiency" amended by the Law No. 28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency". Obligation under Article 7 of the EE Directive transposed in the Law No.124/2015 as amended*	
Actions taken to date	*Law No. 28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency has created the basis for implementation of the obligation schemes and alternative measures for distributors, operators and/or suppliers on the energy markets in the Republic of Albania for achieving savings in final energy consumption.*	
Main Objective of PaM	*1. Setting targets for end-use energy savings (this applies to all energy types, including electricity, gas, and solid fuel), which distribution system operators and / or suppliers energy markets are obliged to apply.* *2. From a rough calculation based on benchmark the expected savings will be 37 ktoe in 2030.* *3. Implementation of the obligation schemes will contribute to reach the targets:* *i) on 3% of central government building stock each year to be renovated.* *ii) on 2% of public building stock each year to be renovated.*	
Results to be achieved	*- Rational use of energy sources at national level* *- Achievement of the cumulative energy savings objectives of total final energy demand at national level up to 31 December 2030* *- Reaching the target from obligation parties (OP) approximately 1,5 % of the annual energy sales to final customers of all energy distributors or all retail energy sales companies averaged over the three-year period; (EED, Article7)* *- Companies who sell large amounts of energy are known as obligated parties and they have targets under the scheme. Obligated parties offer supports to make others home or business more energy efficient. For every unit of energy saved through these projects, they achieve energy credits towards their targets. The support they provide to you may be technical, financial, or a mixture of both. This will also help Albania to reach national energy saving targets.*	
Measures to be implemented	*Preparation work for regulatory framework for establishment of obligation scheme:* *- A scheme for 2023-2030, outlining who should be obligated, the size of the target and how these targets will be delivered has to be designed, including approved EE measures to be implemented by the end users with support of distributor operators and/or suppliers on the energy markets* *Legal framework:* *- A DCM for establishing an energy efficiency obligation scheme should be adopted by the Government, that will set up targets for end-use energy savings, which distribution system operators and / or suppliers energy markets are obliged to apply*	*by 2026* *by 2027*
Budget (source of budgeting)	*Since this is a regulatory instrument, the budget is related to the technical assistance needed (first evaluation is 10-20 kEur).*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency; Obligation Parties (OP), Consumers* *(Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency)*	

Relation with other dimensions (if any)	*Energy Security; Decarbonisation (Residential and Non-residential sector)*

3.2.3 Long-term renovation strategy and stimulating cost-effective deep renovation

Energy Dimension	*2. Energy Efficiency*	
Sector	*Building sector*	
Modelling Scenario Considered **Type of Instrument**	*WAM* *Regulatory and Technical*	
Title of PaM (Coding)	*Inspection of Building Technical Systems (EE-I1)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Law on Energy Performance in Buildings*	
Actions taken to date	*No actions taken to date, new activity*	
Main Objective of PaM	*To ensure the Technical Building Systems are operated at the highest efficiency.*	
Results to be achieved	*Establishing a system for the inspection of technical systems in buildings.*	
Measures to be implemented	*Ammendment of the Law on Energy Performance in Buildings.* *Draft guideline on inspection of technical building systems (TBS).* *Drafting and approving the format for the TBS inspection report.* *Training and certification of independent expert for TBS inspection.* *Defining the framework for the verification, inspection and promotion.* *Development of One-Stop Shops for promotion of energy efficiency in buildings.*	*by 2027*
Budget (source of budgeting)	*To be determined in the Long-term Building Renovation Plan. The framework for TBS inspection needs to be planned together with Energy Performance Certificates (EPC) and EPC databases.*	
Implem. Entity (Monitoring Entity)	*Municipalities, regional associations, Ministry of Infrastructure and Energy* *Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Relation with the following PaM:* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024*	

Energy Dimension	*2. Energy Efficiency*
Sector	*Energy Efficiency in Buildings*
Modelling Scenario Considered **Type of Instrument**	*WAM* *Regulatory*
Title of PaM (Coding)	*Implementation of the Minimum Energy Performance Requirements in buildings (EE-L1)*
Timeframe	*2020 and ongoing*
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"*
Actions taken to date	- *Adopted the relevant legislation for Implementation of the Minimum Energy Performance Requirements in buildings and issuing the Energy Performance Certificate (EPC)* o *DCM No. 537 of 8.7.2020 "On approval of minimum energy performance requirements for the buildings and the building elements";*

	○ *DCM No. 958, of 2.12.2020 "On the approval of certification procedures and conditions energy performance of buildings and models, content of the conditions of registration of the "certificate of building energy performance";* - *Operational energy performance certification system established; more than 40.000 audit reports have been issued since its inception.*	
Main Objective of PaM	*Implementation of this PaM is a very important driver to achieve the optimal (technically, functionally and economically feasible) energy consumption levels of buildings and building units.*	
Results to be achieved	*Sets out the minimum energy performance requirements for:* - *Evaluation of energy savings in the newly constructed residential buildings and non-residential building using thermal envelope* - *Evaluation of energy saving in (existing) renewed (reconstructed) residential and non-residential buildings using the thermal envelope without changing the heat system* - *Overall reconstruction of the thermal envelope of existing buildings residential and non-residential and reconstruction of heating system* - *Thermal efficiency improvement through special interventions in single building elements* - *Energy Performance Certificate issued*	
Measures to be implemented	- *Implementation of the DCM No.1049, of 24.12.2020 "On the National Methodology of calculating energy performance in buildings" through the approved software.* - *Implementation of the DCM No.958, of 02.12.2020 "On the procedures and conditions of energy certificate performance of buildings and the model, content, conditions of registration of "Energy Certificate Performance":* ○ *Issuing the Energy performance certificates for buildings (EPC) for: (i) all buildings or building units, which will be sold or leased; (ii) all buildings, which will be constructed or subject to significant renovation; (iii) all buildings that are in use by a public authority or by institutions that provide a service to the public and that are frequently frequented by the public, which have a usable area over 250 m^2; (iv) When a building or building unit is sold or leased before it is built, the building owner must, at the design stage, provide these buildings or building units with temporary energy performance certificates.* ○ *Implementation of the DCM No.934, of 25.11.2020 "On the Criteria and procedures of selection and the amount of certificates to be verified, as well as the process of supervising the energy performance certificates of buildings" (independent control system)* ○ *Implementation of the DCM No.537 of 08.07.2020 "On approval of the minimum energy performance requirements for the buildings and the building elements";* ○ *From 2021 and on, all new buildings must meet the criteria of the buildings with performance "close to zero energy"* *Establishing the EPC database:* - *Linking the approved EPC calculation software via XML with the database; automatic upload (while running an automated plausibility check) of EPC input and calculation data into the EPC database; planning for Application Programming Interfaces for linking other software such as GIS, in order to make the best use of the data* - *The EPC Database is used to administrate and evaluate the EPC data effectively without putting too much load on the administration* - *The EPC Database is used for the Independent Control System (according to Article 18 EPBD), to implement it in feasible way* - *In combination with GIS and socio-economic data (e.g. income, unemployment), the EPC Database is used for planning targeted (and subsidised) large scale renovation measures*	*2020 on* *2020 on* *2023 on*

	Capacity building and training: - *Capacity building for the competent authority and energy auditors on implementation of the legislation and using the software for issuing the EPC* - *Basic training courses for residential and non-residential buildings including examinations are offered* - *Renewal training courses for residential and non-residential buildings including examinations are offered* - *Training courses are evaluated and adapted: the EPC database helps to identify frequent mistakes which are dealt with in the trainings; it also helps to identify those energy auditors with faulty EPCs and address them with sanctions, in order to ensure EPC quality*	*2020 on*
Budget (source of budgeting)	*State budget, private sector* *There is no overall calculated budget, but some funds dedicated are: (i) State Aid for "New Green Businesses" in Tirana with a total value of the fund for two years approx. 0.3 MEur; and (ii) 6.5 MEur "For Energy Efficiency for the Student City" from KfW bank.* *Setting up an EPC data base which meets the requirements of interoperability is estimated at 0.2 Meur. The cost for operating and maintaining the EPC database as well as related software-tools, and for offering trainings, is estimated at EUR 25,000 per year.*	
Implem. Entity (Monitoring Entity)	*Albanian Energy Efficiency Agency; Local Government*	
Relation with other dimensions (if any)	*Energy Security; Decarbonisation* *Relation with the following PaMs:* *EE-L1 is the basis for EE-L2, EE-L3, EE-L4, EE-L5, EE-L6*	

Energy Dimension	*2. Energy Efficiency*
Sector	*Energy Efficiency in Buildings*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Financial; Information*
Title of PaM (Coding)	*Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024* *(EE-L2)*
Timeframe	*2022 and ongoing*
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended* *Energy Performance of Buildings Directive (EU/2024/1275) (recast)*
Actions taken to date	*Law No. 28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency" defined the target for renovation public buildings:* - *Target defined on 3% of central government building stock each year to be renovated.* - *Target defined on 2% of other public building each year to be renovated.* *Minimum energy requirements for energy performance in building (new and existing one) are defined, including the NZEB.* *The methodology of "minimum requirements for energy performance of buildings and building elements" has been approved.* *Relevant software for the calculation of the energy performance of buildings, owned by the National Energy Agency, has been prepared and approved.* *The energy constructions codes are set.* *The SLED Study on the typology of the public building stock is available: energy consumption by fuel and services, CO_2 emissions calculation, introducing EE measures due to energy consumption reduction, analysis of the costs and benefits of the thermal efficiency retrofitting of Albanian public buildings.* *Municipality of Tirana has initiated a program offering to the private owners a 50% grant funding for building with efficiency improvements (retrofitting).*

	EEA is collaborating with EBRD for the REEP PLUS program for the preparation of the Building Renovation Strategy. The first draft was prepared and submitted in March 2023.	
Main Objective of PaM	*Long-term building renovation plan will be the main policy document for renovation of the private and public building stock:* - *To reach the target defined on 3% of central government building stock each year to be renovated.* - *To reach the target defined on 2% of public building stock each year to be renovated.* - *Municipality of Tirana will support the energy efficiency measures for residential buildings in Tirana at minimum of 1000 retrofits by 2035. This program will be further extended and continued beyond 2035. Other municipalities will be engaged in this program.* - *All new building permits issued, for both the public and the private buildings, are energy efficient.*	
Results to be achieved	- *Long-term building renovation plan and stimulating cost-effective deep renovation measures prepared* - *Through the implementation of the Long-term building renovation plan:* o *3% of central government building stock each year to be renovated.* o *2% of other public building stock each year to be renovated.* o *Approx. 60,000 kWhe per year the energy saved from retrofitting of public buildings and approx.1 mil kWhe per year saved in the residential buildings in municipality of Tirana. Additional savings achieved from engagement of the other municipalities in the retrofitting programme for residential buildings.*	
Measures to be implemented	*Development of Long-term Building Renovation Plan:* - *A long-term action plan (according to EPBD recast 2024) is developed for mobilizing investment in the renovation of the national stock of residential, public and commercial buildings, both public and private shall be established and shall encompass: (i) an overview of the national building stock based, as appropriate, on statistical sampling; (ii) identification of cost-effective approaches to renovations relevant to the building type and climatic zone; (iii) policies and measures to stimulate cost-effective renovations of buildings; (iv) a forward-looking perspective to guide investment decisions of individuals, the construction industry and financial institutions; and (v) an evidence-based estimate of expected energy savings and wider benefits.* *Secondary legislation to implement the Longterm Building Renovation Plan that designates:* - *a specific methodology that is going to be used for setting the stocks surface and calculating the relevant rate of public buildings; and the total area of the public buildings* - *Calculation of the energy demand for the national building stock and evaluation based on minimum energy requirements* - *Defining detailed targets for the building sector according to typology* - *Measurable progress indicators and deadlines* *Financing mechanisms:* - *Financing mechanisms to be defined and provided for EE investments for building stock renovation*	*by 2024* *by 2026* *by 2026*
Budget (source of budgeting)	*Study for developing the Long-term Building Renovation Plan is financed by EBRD (2024). 1 MEur to support the implementation of the above measures from KfW bank, EU funds, additional funding from state and municipality budget, private sector.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency, Municipalities (Albanian Energy Efficiency Agency; Local Government)*	
Relation with other dimensions (if any)	*Energy Security; Decarbonisation; Research, Innovation & Competitiveness* *Relation with the following PaMs:* *EE-L3: Minimum energy performance standards for non-residential buildings and trajectories for progressive renovation of the residential building stock*	

	EE-L4: Retrofitting of the existing central governmental building (excluding other public buildings owned by municipalities, etc.) *EE-L5: Retrofitting of the public building stock (all public buildings except central government buildings)* *EE-L6: Financial support schemes for improving energy efficiency in buildings (private sector)* *EM-P1: Eradicate energy poverty*

Energy Dimension	*2. Energy Efficiency*	
Sector	*Building sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory and Technical*	
Title of PaM (Coding)	*Minimum energy performance standards for non-residential buildings and trajectories for progressive renovation of the residential building stock (EE-L3)*	
Timeframe	*2025 – ongoing*	
Legal basis and planning documents	*Law on Energy Performance in Buildings* *Energy Performance of Buildings Directive (EU/2024/1275) (recast)*	
Actions taken to date	*No actions taken to date, new activity*	
Main Objective of PaM	*To ensure the decarbonisation and energy usage reduction of the National Building Stock is in line with the Climate Neutrality by 2050 objective.*	
Results to be achieved	*Drafting of Minimum energy performance standard legislation.* *Drafting plan to follow the building renovation trajectory.*	
Measures to be implemented	*A study is carried out to determine minimum energy performance standards for non-residential buildings and a trajectory for residential buildings:* *The minimum energy performance standards shall ensure, at least, that all non-residential buildings are below:* *(a) the 16 % threshold from 2030; and* *(b) the 26 % threshold from 2033.* *The national trajectory for the progressive renovation of the residential building stock shall be expressed as a decrease in the average primary energy use in kWh/(m2.y) of the entire residential building stock over the period from 2020 to 2050, and shall identify the number of residential buildings and residential building units or floor area to be renovated annually, including the number or floor area of the 43 % worst-performing residential buildings and residential building units.* *It will be ensured that the average primary energy use in kWh/(m2.y) of the entire residential building stock:* *(a) decreases by at least 16 % compared to 2020 by 2030;* *(b) decreases by at least 20-22 % compared to 2020 by 2035;* *(c) by 2040, and every 5 years thereafter, is equivalent to, or lower than the nationally determined value derived from a progressive decrease in the average primary energy use from 2030 to 2050, in line with the transformation of the residential building stock into a zero-emission building stock.*	*by 2026*
Budget (source of budgeting)	*See Long-term Building Renovation Plan (EE-L2)*	
Implem. Entity (Monitoring Entity)	*Municipalities, regional associations, Ministry of Infrastructure and Energy* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Relation with the following PaMs:* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024*	

Energy Dimension	*2. Energy Efficiency*	
Sector	*Building sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Investment; Regulatory; Promotion*	
Title of PaM (Coding)	*Retrofitting of the existing central governmental building (excluding other public buildings owned by municipalities, etc.)* *(EE-L4)*	
Timeframe	*2022 - 2030*	
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended* *According to SLED Study, the Area of all public buildings is 6.6 million m^2. 75% of this area is for educational buildings; 13% offices; 11% hospitals. 57% are located in the climate zone A; 26% are located in the climate zone B and 17% are located in the climate zone C.*	
Actions taken to date	Law No. *28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency" defined the target for renovation public buildings: 3% of central government building stock each year to be renovated.* *Minimum energy requirements for energy performance in building (new and existing one) are defined, including the NZEB.* *The methodology of "minimum requirements for energy performance of buildings and building elements" has been approved.* *Relevant software for the calculation of the energy performance of buildings, owned by the National Energy Agency, has been approved.* *The energy construction codes are set.* *The SLED Study on the typology of the public building stock is available: energy consumption by fuel and services, CO_2 emissions calculation, introducing EE measures due to energy consumption reduction, analysis of the costs and benefits of the thermal efficiency retrofitting of Albanian public buildings.*	
Main Objective of PaM	*To reach the target defined on 3% of central government building stock each year to be renovated.*	
Results to be achieved	- *3% of central government building stock each year to be renovated* - *Set a good example from the government side for EE that can be used to motivate the general public*	
Measures to be implemented	*Setting up a technical assistance scheme to support the retrofit of central government buildings:* - *Setting up a financing scheme* - *Setting up a renovation plan: identification of buildings for renovation; those buildings in urgent need for repair are prioritised (2022)* - *According to renovation plan, identified buildings undergo investment grade energy audits and EPCs are issued and uploaded to the EPC database* *Implementing renovation works:* - *Renovation measures are commissioned and implemented (from 2023* *Promotion:* - *Good examples are shown on a map which is generated from the EPC database*	*2022 on* *2023 on* *2024 on*
Budget (source of budgeting)	*Total investment costs for central government building retrofits are 500 MEur for the 2020-2030 period.* *Some financial schemes for implementation:* 1. *State budget* 2. *Application of energy efficiency obligation schemes* *International financing institutions/donors*	

Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency, Central Government* *(Albanian Energy Efficiency Agency; Central Government)*
Relation with other dimensions (if any)	*Decarbonisation* *Relation with the following PaM:* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024*

Energy Dimension	*2. Energy Efficiency*	
Sector	*Building sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Investment; Regulatory*	
Title of PaM (Coding)	*Retrofitting of the public building stock (all public buildings except central government buildings)* *(EE-L5)*	
Timeframe	*2021 - 2030*	
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended* *According to SLED Study, the Area of all public buildings is 6,6 million m^2. 75% of this area is for educational building; 13% office; 11% hospitals. 57% are located in the climate zone A; 26% are located in the climate zone B and 17% are located in the climate zone C.*	
Actions taken to date	Law No. *28/2021 "On some amendments and additions of law No.124/2015 on energy efficiency" defined the target for renovation public buildings: 2% of public building stock each year to be renovated.* *Minimum energy requirements for energy performance of buildings (new and existing one) are defined, including the NZEB.* *The methodology of "minimum requirements for energy performance of buildings and building elements" has been approved.* *Relevant software for the calculation of energy performance of buildings, owned by the National Energy Agency, has been approved.* *The energy construction codes are set.* *The SLED Study on the typology of the public building stock is available: energy consumption by fuel and services, CO_2 emissions calculation, introducing EE measures due to energy consumption reduction, analysis of the costs and benefits of the thermal efficiency retrofitting of Albanian public buildings.*	
Main Objective of PaM	*To reach the target defined on 2% of public building stock each year to be renovated.*	
Results to be achieved	- *Improvement of the energy efficiency in buildings in Albania* - *2% of public building stock each year to be renovated* - *Set a good example from the government side for EE that can be used to motivate the general public*	
Measures to be implemented	*Setting up a technical assistance scheme to support the retrofit of public building stock except central government buildings:* - *Setting up a financing scheme* - *Setting up a renovation plan: identification of buildings for renovation; those buildings in urgent need for repair are prioritised* - *According to renovation plan, identified buildings undergo investment grade energy audits and EPCs are issued and uploaded to the EPC database* *Implementing renovation works:* - *Renovation measures are commissioned and implemented (from 2023* *Promotion:* - *Good examples are shown on a map which is generated from the EPC database*	*2022 on* *2023 on* *2024 on*

Budget (source of budgeting)	*Total investment costs for public buildings retrofits are 1800 MEur for the 2015- 2030 period. The financing scheme can build on the following elements:* *1. State budget: State allocate to the local government a yearly budget amount to fulfil their objectives. Except that local government by collecting a different kind of taxes define the objectives and targets and deliver/invest a part of their total budget for energy efficiency investments to the building renovation.* *2. Private sector contribution to the public sector* *3. Application of energy efficiency obligation schemes* *4. Combination of EE and RES investments in buildings benefiting from "green" funds related to energy consumption and GHG reduction* *5. Residential buildings credit line and grants* *6. Fiscal/taxes deductions, VAT reduction; carbon tax and creation a fund dedicated for financing EE investments promoting the EE investments* *7. International financing institutions/donors*
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Albanian Energy Efficiency Agency, Central and Local Government* *(Albanian Energy Efficiency Agency; Central and Local Government)*
Relation with other dimensions (if any)	*Decarbonisation* *Relation with the following PaM:* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024*

Energy Dimension	*3. Energy Efficiency*	
Sector	*Building Sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Financial; Fiscal*	
Title of PaM (Coding)	*Financial support schemes for improving energy efficiency in buildings (private sector) (EE-L6)*	
Timeframe	*2022 and ongoing*	
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended* *Guideline of Minister of Infrastructure and Energy No 22 of 27.10.2022 "On defining the rules, procedures and methodology for family customers benefiting from financing measures for energy saving from solar panels".*	
Actions taken to date	- *There is a legal framework (draft amendment of the EE law) referring to ESCOs that has started to be completed by secondary legislation.* - *Energy performance contract prepared according to targets.* - *Municipality of Tirana: Infrastructure and rehabilitation investment projects, in the framework of donor/private support have consisted of interventions carried out for school reconstructions.* - *Measures identified in the SEAP (Tirana municipality action plan) has included a target to provide insulation and high efficiency windows to 100 public buildings by 2020.* - *Support scheme based on the approved Guideline of the Minister of Infrastructure and Energy No 22 of 27.10.2022: 2,000 family customers have received subsidies from the government to cover up to 70% of the cost for the installation of solar panels that will supply their buildings with hot sanitary water.*	
Main Objective of PaM	*Combination of finance, fiscal incentives, ESCOs, Obligation Scheme with a regulatory framework could bring possibilities for financing investments in energy savings in the building stock.*	
Results to be achieved	- *Financial support schemes in place for improvement of the energy efficiency in buildings in Albania*	
Measures to be implemented	*Preparatory work for further developing the financial support schemes:* - *Research on total investment costs for building retrofits and other aspects, such as availability of energy auditors and training needs* *Implementation of financial support schemes:*	*2022 on* *2022 on*

	Free energy advice through one stop shops / energy audits for private building owners *Financial support for implementation of energy saving measures such as:* - *State budget: State allocate to the local government a yearly budget amount to fulfil their objectives. Except that local government by collecting a different kind of taxes define the objectives and targets and deliver/invest a part of their total budget for energy efficiency investments to the building renovation.* - *Private sector contribution to the public sector* - *Application of energy efficiency obligation schemes* - *Private investments through ESCOs* - *Combination of EE and RES investments in buildings benefiting from "green" funds related to energy consumption and GHG reduction* - *KfW programmes, soft loans schemes to public funding decreases the cost of loans, which are usually distributed by private banks.* - *Residential buildings credit line and grants* - *Fiscal/taxes deductions, VAT reduction; carbon tax and creation a fund dedicated for financing EE investments and promoting EE investments* *International financing institutions/donors* *Public subsidies constitute only a partial response to the needs of project developers, which range from technical assistance to the financial structuring of the project.*	
Budget (source of budgeting)	- *Administrative costs (staff cost from the state budget)* - *Budget for free energy advice / energy audits to be financed by technical assistance programmes (estimated at EUR 25,000 per year), or under the Energy Efficiency Obligation Scheme.* - *Support scheme based on the approved Guideline of the Minister of Infrastructure and Energy No 22 of 27.10.2022 "On defining the rules, procedures and methodology for family customers benefiting from financing measures for energy saving from solar panels".* - *Investments in energy efficiency are ongoing through the state budget and foreign financial aid projects. The state budget has raised the contribution in this field to finance projects foreseen until 2025 and managed by EEA.* - *Also, local banks continue to offer credit lines for energy efficiency measures, mainly for improving the thermal insulation of the building envelope for the private buildings with 50% of the cost financed from the Municipality of Tirana. The project on "Thermal insulation of the building envelope" financed by the Municipality of Tirana and the owners of private apartments (50%/50%) is under implementation.*	
Implem. Entity (Monitoring Entity)	*Ministry of Finance and Economy, Ministry of Infrastructure and Energy, Albanian Energy Efficiency Agency, Municipalities, building sector operators.* *(Albanian Energy Efficiency Agency; Ministry of Infrastructure and Energy; Local Government)*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Security* *Relation with the following PaMs:* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024* *EM-P1: Eradicate energy poverty*	

Energy Dimension	*4. Energy Efficiency*	
Sector	*Building Sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Financial*	
Title of PaM (Coding)	*Energy auditing of public buildings and retrofitting the public building stock (EE-L7)*	
Timeframe	*2024 – 2027*	
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended*	
Actions taken to date	*The project builds on the findings, assessments, recommendations, and action plans prepared the project "Smart Energy Municipalities Project in Albania (SEMP)" financed by the Embassy of Switzerland.*	
Main Objective of PaM	- *Create the inventory of public building stock* - *Showcase the benefits of energy auditing and retrofitting the public building stock*	
Results to be achieved	- *Increase energy efficiency* - *Increase indoor thermal comfort and indoor air quality: clean, healthy air* - *Implementation of Renewable Energy Sources (Increase self-production of energy from renewable sources)* - *Increase awareness by giving the exemplary role of public buildings*	
Measures to be implemented	*Inventory of public buildings:* - *Create the inventory of public building stock and to place data on the server of the Energy Efficiency Agency by naming and codifying them in the national electronic register, capable of integrating and allowing its own data to be integrated into the servers and databases of the Albanian Agency for Information Society;* - *Audit the entire stock of buildings for three years and to register it on the server with the data related to the cost's effective analysis of their renewal, according to the requirements of Law No 116/2016 of 10.11.2016 "On the energy performance in buildings".* *Pilot project:* - *Aims to perform energy audits for 50 public buildings, in accordance with respective Albanian and EU regulations for all buildings which have not been assessed so far;* - *Rehabilitation with Energy Efficiency measures of at least 15 public buildings and 2 nearly zero energy buildings (NzEB); Structural improvements; Energy Efficiency Measures; Comfort Measures; and Implementation of Renewable Energy sources.*	*2024 on* *2024 on*
Budget (source of budgeting)	*Inventory of public buildings: state budget* *Pilot project; 20 MEur, IPA III (2023 – 2027), Window 3: Green agenda and sustainable connectivity*	
Implem. Entity (Monitoring Entity)	*Ministry of Finance and Economy, Ministry of Infrastructure and Energy, Albanian Energy Efficiency Agency, Municipalities, building sector operators.* *(Albanian Energy Efficiency Agency; Ministry of Infrastructure and Energy; Local Government)*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Security* *Relation with the following PaMs:* *EE-L4: Retrofitting of the existing central governmental building (excluding other public buildings owned by municipalities, etc.)* *EE-L5: Retrofitting of the public building stock (all public buildings except central government buildings)*	

Energy Dimension	*5. Energy Efficiency*
Sector	*Building Sector*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Financial*
Title of PaM (Coding)	*Energy Efficiency Rehabilitation Programme Student City I - Tirana, Albania - pilot project (EE-L8)*
Timeframe	*2020– 2026*
Legal basis and planning documents	*Law No. 116/2016 of 10.11.2016 "on Energy Performance in Buildings"; Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended*
Actions taken to date	*Project preparation*
Main Objective of PaM	- *Showcase the benefits of building refurbishment: renovation of student dormitories with the aim of significant energy savings and guaranteeing adequate living and working conditions at reasonable costs.*
Results to be achieved	- *It is expected to save at least 20% of energy compared to consumption actual. The reduction of CO_2 by the same amount is predicted.* - *Dormitories must remain accommodation attractive and reasonably priced, especially for students with poor economic conditions. Like therefore, it was negotiated that at least 70% of future resident students belong to that category.* - *As a comprehensive development goal, employment opportunities will be created to reduce migration trends. Training and temporary employment is offered through the Program to strengthen local knowledge, to boot similar projects and to create qualified jobs.*
Measures to be implemented	- *Renovation of the dormitories of the Student City I, increase of structural integrity, energy efficiency and basic comfort.* — *by 2026*
Budget (source of budgeting)	*Overall cost EUR 42,480,015.67. EU contribution EUR 4,785,067.87, National co-financing VAT (EUR 7,080,002.61), Other Donors KfW (donation and loan) EUR 30,614,945.19*
Implem. Entity (Monitoring Entity)	*The project will be implemented under the coordination of the KfW, the Ministry of Infrastructure and Energy and Municipality of Tirana and SC 1 administration.* *(Ministry of Infrastructure and Energy)*
Relation with other dimensions (if any)	*Decarbonisation; Energy Security* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024* *EE-L4: Retrofitting of the existing central governmental building (excluding other public buildings owned by municipalities, etc.)* *EE-L5: Retrofitting of the public building stock (all public buildings except central government buildings)*

3.2.4 Uptake of energy performance contracting and other EE service models

Energy Dimension	*2. Energy Efficiency*
Sector	*Building sector*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Financial*
Title of PaM (Coding)	*Uptake of ESCO models* *(EE-S1)*
Timeframe	*2022 and ongoing*
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended*
Actions taken to date	– *There are existing ESCOs but not certified specifically for energy efficiency.*

	– *Article 18 of the Law No. 28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency" has created the basis for establishing ESCOs.* – *Guideline of Minister of Infrastructure and Energy No 23 of 17.10.2022 "On the contract model for energy performance contracting"*	
Main Objective of PaM	*The objective of this PaM is to promote investments in the EE in the public and private sector through ESCO mechanism. Under an energy performance contract, an ESCO (Energy Service Company) undertakes a project to deliver energy efficiency improvements in the premises of the client and uses the stream of income from the cost savings to repay the costs of the project. For economic reasons, it should be possible to combine EE measures with RES measures.*	
Results to be achieved	- *Introducing and establishment of ESCOs will enable the high-quality services for EE investments and may serve as financing, taking the risk bringing out the energy savings and energy cost and emission reduction*	
Measures to be implemented	*Preparation of Contract model:* - *Preparation of the Contract model by the Order of the Minister* - *Subject matter of the Contract is the implementation of Energy Conservation Measures (ECMs) for improving the efficient use of Energy and corresponding reduction of CO_2 emissions and reducing the Operating Costs in the Contracted Facility.* - *The Contractor takes upon itself to implement such ECMs, through which he will ensure Operational Cost Savings in the Contracted Facility during the Guarantee Period, in accordance with this Contract (including all the Appendices).* - *All ECMs applied under this Contract must be in accordance with applicable regulations and required standards in Republic of Albania.* *Support measures:* - *The Agency responsible for Energy Efficiency (AEE) publishes on its website: (i) best practices for energy performance contracting, guidelines, model contracts including provisions to be included in such contracts to guarantee energy savings and end-user rights; (ii) the list of qualified / registered energy service providers, which must be updated regularly; and (iii) information on any available financial instruments, incentives, grants, and loans to support energy efficiency service projects.*	*by 2025* *by 2025*
Budget (source of budgeting)	*For preparing the model contracts and supporting AEE in the initial phase, technical assistance is requested, estimated at EUR 20,000.* *No budget calculated for the moment but later on, AEE will run a process of monitoring and verification of the energy savings, costs, etc. which in the future could bring other extra budget needed for AEE due to the increase of the job and their duties (more employees, more technical and IT programs support will be needed).*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, ESCOs, energy consumption end users* *(Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation*	

3.2.5 Exemplary role of public buildings and energy-efficient public procurement

Energy Dimension	*2. Energy Efficiency*
Sector	*Public buildings including products and services*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Energy efficiency measures related to purchasing by public authorities (EE-P1)*
Timeframe	*2021 and on*

Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; Law No. 9463 of 20.11.2006 "on Public procurements", amended*	
Actions taken to date	*Article 9 of the Law No. 28/2021 "On some amendments and additions of Law No.124/2015 on energy efficiency" has created the basis for adoption of secondary legislation on public procurement.* *Draft Decision of Council of Ministers "On the approval of public procurement rules and procedures for the purchase of products, facilities and buildings with high performance and successful efficiency: in process of approval after being consulted with the Secretariat of Energy Community and confirmed by their side.*	
Main Objective of PaM	*The objective of this PaM is that public authorities should spend the public funds in a more efficient way by obtaining better energy performance of products and services, promoting a low-carbon and efficient energy consumption and competitive one.*	
Results to be achieved	- *DCM which will include in the public procurement rules provisions that oblige the public contracting authorities to give priority during the procurement, to those products and services that have a high energy efficiency.* - *Catalogue, book, or website for technical specifications/EE standards for commonly purchased products* - *Training and guidance for public authorities on EE Public Procurement*	
Measures to be implemented	- *Approval of the (draft) amended EE law and* - *Preparation of the secondary legislation* - *Development of information material* - *Organisation of trainings*	*by 2025* *by 2026* *2026 on* *2026 on*
Budget (source of budgeting)	*Catalogue, book, or website as well as training and guidance for public authorities to be financed by a Technical Assistance Program, approx. EUR 50,000.*	
Implem. Entity (Monitoring Entity)	*The responsible Ministries, Public Procurements Agency and related institutions (Albanian Energy Efficiency Agency; Public Procurements Agency)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy*	

Energy Dimension	*2. Energy Efficiency*	
Sector	*Public building sector*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Educational*	
Title of PaM (Coding)	*Municipalities Energy Efficiency Action Plans, implementation, and reporting (EE-P2)*	
Timeframe	*2022 and ongoing*	
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; DCM No. 709 of 1.12.2017 "on the Approval of the second and third Action Plan for the Energy Efficiency 2017 – 2020"* *Order of Minister of Infrastructure and Energy No 206 of 25.10.2022 "On the approval of the format of local action plans for energy efficiency and the progress report for the implementation of the plans"* *Decision of Council of Ministers No 189 of 5.04.2023 "On the approval of the monitoring and verification platform"*	
Actions taken to date	- *Pilot project: Smart Energy Municipalities Project (SEMP) is an ongoing project financed by the Switzerland Embassy. The objective of this bilateral Project is to support selected Albanian municipalities to manage energy in a sustainable manner and to implement the national energy policy at a local level. To this end, it will pilot and institutionalize an energy management system that is based on the European Energy Award (EEA) and incorporates the requirements of the national energy legislation.* - *Creation of legal framework*	

Main Objective of PaM	*Involvement of municipalities by establishment of their own EE action plans as a driving force, and by monitoring the implementation of measures to reduce energy consumption, reduce emissions and increasing the quality of life.*	
Results to be achieved	- *Increasing the capacity building to the employees of the municipalities in the EE field* - *Detailed plan on EE measures for municipalities in accordance with National EE action Plan different sectors* - *Providing EE investments financing sources* - *Monitoring the implementation of the EE measures* - *Collecting data on energy consumption and monitor the savings realized.*	
Measures to be implemented	*Setting up a monitoring and verification platform* - *Creating the legal framework* - *Setting up the operational framework* *Smart Energy Municipalities Project (SEMP)* - *Component 1: Implementation of energy management systems in 4 pilot municipalities: Berat, Korça, Përmet and Shkodra, resulting in Municipal Energy and Climate Plans (MECAP);* - *Component 2: Designing a national energy management framework;* - *Component 3. Support for the extension of the national energy management framework;* *Component 4. Strengthening capacities for project design and implementation through installations with significant benefits;* - *Component 5: Strengthening of key institutions at the local and national level related to energy management.* *Roll-out to another 4 municipalities*	*by 2024* *by 2024* *by 2028*
Budget (source of budgeting)	*SECO: 5,300,000 CHF* *Municipalities: 630,000 CHF* *(1 Swiss Franc equals 1,03 Euro, March 2024)*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Municipalities, ESCOs, energy managers, end-users (Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation*	

Energy Dimension	*3. Energy Efficiency*	
Sector	*Public building sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory and Technical*	
Title of PaM (Coding)	*Establishment of integrated municipal / regional development plans which are linked with the NECP* *(EE-P3)*	
Timeframe	*2023 – ongoing*	
Legal basis and planning documents	*Legislation on Spatial planning / Land use planning*	
Actions taken to date	*No actions taken to date, new activity*	
Main Objective of PaM	*To ensure alignment of municipal/regional development planning with the objectives of the NECP*	
Results to be achieved	*Existing legal framework and implementation procedures for municipal/regional development planning are extended/supplemented to take into account cross cutting energy and climate related aspects*	
Measures to be implemented	*<u>Regulatory:</u> Adaptation of legal framework conditions* - *Municipalities in cooperation with local associations to prepare /develop plans with a horizon of 10 years that cover all sectors.*	*2025 on*

	The plans show how the municipalities wants to develop in all aspects and specifies the necessary measures. - *Specification of indicators to be reported by municipalities as part of the NECP* - *Definition of procedural aspects (such as public consultation and trigger points for reviewing the plans, electronic system for documentation and reporting, etc.)* *<u>Technical:</u> Pilot implementation* - *Revision of existing municipal or regional development plans, preparation of local /regional NECP, beginning with a pilot project for 3 - 4 municipalities;* - *Extension of preparations of regional NECP to all municipalities* - *Capacity building for municipal staff through the formation of partnerships with experts and local associations for implementation of local NECPs.*	*2025 on*
Budget (source of budgeting)	*To be financed by Technical Assistance Programme, approx., 0.3 MEur*	
Implem. Entity (Monitoring Entity)	*Municipalities, regional associations, Ministry of Infrastructure and Energy* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Relation with the following PaMs:* *EE-P2 Municipalities Energy Efficiency Action Plans, implementation, and reporting* *G-W1 Emission reduction from waste (municipal Waste Integrated Management Plans)* *R-E3: Energy spatial planning for increasing the share of renewable energy and improve energy efficiency*	

3.2.6 Promoting energy audits and energy management systems

Energy Dimension	*2. Energy Efficiency*
Sector	*Industry Sector*
Modelling Scenario Considered	*WEM*
Type of Instrument	*Regulatory; Organizational*
Title of PaM (Coding)	*Energy audits for large energy consumers with focus on industrial activities (EE-E1)*
Timeframe	*2023 and ongoing*
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; DCM No. 407, of 19.6.2019 "On the approval of procedure, categories, conditions, qualifications and professional experience requirements for the person who will be the holder of the energy auditor certificate"* *Order of Minister of Infrastructure and Energy No 203 of 18.10.2022 "On the approval of the format of the action plans of large energy consumers and the annual progress report"*
Actions taken to date	*Legal framework: All steps foreseen for energy audits described in law and DCM.* *Some industries have started on voluntary base to do energy audits. However, no reports have been submitted.*
Main Objective of PaM	*Implementation of energy audits for industry operators to evaluate the energy consumption, losses, EE potentials, issue the energy certificates and the obligation of the industries to undertake EE measures and to fulfil energy savings targets.* *In accordance with the principle on "Energy audits for large energy consumers with focus on industrial activities" and the principle on "Energy management systems for SMEs": Through the implementation of these measures, it will be possible to guarantee the achievement of energy savings at the level of at least 4% of the total equivalent energy consumed by this category of consumers.*
Results to be achieved	- *Setting up by legal acts the obligation of energy audits in industry, aiming at using energy more efficiently.* - *Energy auditors will be engaged in industry activities related to 2 key elements: production processes and supporting processes (energy services) defining the*

	energy consumption, making reports and issue the proposals for industry what measures they need to undertake in the future for energy consumption reduction. - *Industry activities are obliged to prepare their EE action plans in order to invest for EE measures (in cases needed) within 2 months from energy audit.* - *Within 2 years based on energy audits reports they are obliged to make investments to reduce energy consumption and reporting to AEE.* - *Reducing high cost of energy services and energy production in cases they are not competitive.* - *Energy management system in industry is improved.* - *After energy audits submitted, large consumers should undertake investments to achieve 4% energy savings of the total equivalent energy consumed by them.*	
Measures to be implemented	*Organisational framework:* - *Identification of Industry activities (energy consumers with an annual energy consumption of more than 1 MWh will be subject to energy audit)* - *Establishment of a database for them by registering, etc.* *Industry activities* - *Based on audit reports, industries prepare their EE action plans and implement EE measures.*	*Done on annual basis by Agency for Energy Efficiency*
Budget (source of budgeting)	*Costs for Energy audits expected to be evaluated.*	
Implem. Entity (Monitoring Entity)	*Industry sector - large consumers; Albanian Energy Efficiency Agency* *(Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy; Research, Innovation & Competitiveness*	

Energy Dimension	*2. Energy Efficiency*
Sector	*Industry Sector-SMEs*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory; Organizational; Promotional*
Title of PaM (Coding)	*Energy management systems for SMEs* *(EE-E2)*
Timeframe	*2021 and ongoing*
Legal basis and planning documents	*Law No. 124/2015 of 12.11.2015 "on Energy Efficiency", amended; DCM No. 342, of 22.05.2019 "On the approval of categories, conditions and requirements of qualification for energy manager"*
Actions taken to date	*Started the process for the certification of energy auditors, certification of the energy managers and the process of energy audits for large consumers together with the appointments of energy managers.*
Main Objective of PaM	*The obligation of the large energy consumers according to EE law to appoint energy managers and promoting ISO 50001 will lead to a rational use of energy, avoiding losses and increasing the industry performance.* *In accordance with the principle on "Energy audits for large energy consumers with focus on industrial activities" and the principle on "Energy management systems for SMEs": Through the implementation of these measures, it will be possible to guarantee the achievement of energy savings at the level of at least 4% of the total equivalent energy consumed by this category of consumers.*
Results to be achieved	- *Enhanced policy, regulatory and institutional support for the introduction of Energy Managements Systems standards* - *Progressive increased penetration of energy efficiency and energy management systems standards in Albanian industrial SMEs* - *Establishment of trainings in energy management*

	- *Development of innovative financing mechanisms (including carbon financing) for investments in industrial energy efficient and low carbon technologies* - *Better application of revised Law 124/2015 in relation to the part of the Energy Auditing Schemes*	
Measures to be implemented	*Promote ISO 50001 as a national voluntary Energy Management System (EnMS) standard* - *Working manual for energy auditing application* - *Pilot industrial SMEs implement EnMS in compliance with ISO 50001* - *Promotion of Industrial Energy Efficiency (IEE) best-practice policies and promotion of sector specific energy efficient innovative technologies* - *National relevant institutions and the energy efficiency service sector provide the quality training and expert advisory services*	*2024 on*
	Establish a national program of IEE with quantified emission reduction - *Train local financing institutions about different IEE, and increase their capacity to appraise IEE investment proposals and to use the benefits from International Financial Institutions' credit programs.* - *Design of an innovative IEE financing mechanism, considering the role of ESCOs*	*2024 on*
Budget (source of budgeting)	*Indicative Budget: of 3 MEur (considering the multiannual support) has been calculated.*	
Implem. Entity (Monitoring Entity)	*Industry sector- large consumers; Albanian Energy Efficiency Agency (Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy; Research, Innovation & Competitiveness*	

3.2.7 Consumer information and training measures

Energy Dimension	*2. Energy Efficiency*	
Sector	*Industry Sector (Consumer information & training measures)*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Information*	
Title of PaM (Coding)	*Introducing the Energy labelling and Eco-design requirements (EE-C1)*	
Timeframe	*2022 - 2030*	
Legal basis and planning documents	*DCM No. 709 of 1.12.2017 "on the Approval of the second and third Action Plan for the Energy Efficiency 2017 – 2020"; DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"*	
Actions taken to date	*National Plan on European Integration 2023-2025: Preparation of the draft Law "On the labelling of products with energy impact". The draft Law is foreseen to be adopted aiming to transpose the Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU.*	
Main Objective of PaM	*Developing and implementation of the legislation on Energy labels and/or the eco-design for products: Informative labels affixed to manufactured products indicating energy performance that provides consumers with the necessary information to make informed purchase decisions at the point of sale.*	
Results to be achieved	- *It is expected that by 2030 the share of energy efficient technologies will be 5% in the overall stock.* - *Predicted by 2030 about 3 ktoe energy savings.*	
Measures to be implemented	*Transposition and adoption of the Energy labels and/or the eco-design for products* - *Adapting (and updating) the individual product related legislation, for example to follow the EU legislation and its changes, and introduction*	*2022 on*

	of energy labels for new product categories, or to reflect on market developments; check the technical documentation of regulated products *Timeline for products:* - *Refrigerators* - *Water heaters* - *Etc.* *Market surveillance:* - *Test products for compliance with regulations* - *Monitoring the use of energy labels within stores* - *Increasing the technical capacities of the staff dedicated to market surveillance of the energy label and eco-design related legislations* *Promotion and awareness creation:* - *Developing guides on requirements for professionals or guidelines for consumers, support in preparing internal guidelines and procedures* - *Increasing public awareness through information from government, municipalities for issues concern and from civil society* - *Release of print, video and audio advertisements for consumer campaigns including monitoring of activity related to campaign website and social media sites*	 *2025* *2025* *2025* *2022 on* *2022 on*
Budget (source of budgeting)	*70 MEur*	
Implem. Entity (Monitoring Entity)	*The responsible Ministries, Producers, Importers, Suppliers, local retailers and dealers of products* *(The structure responsible for market surveillance - State Market Inspectorate)*	
Relation with other dimensions (if any)	*Research, Innovation & Competitiveness*	

3.2.8 Energy Efficiency in transport

Energy Dimension	*2. Energy Efficiency*	
Sector	*Transport*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Information; Educational*	
Title of PaM (Coding)	*Energy labelling of new cars* *(EE-T1)*	
Timeframe	*2022 - ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 619 of 07.09.2011 "Approval of NEEAP 2011 – 2018 (Measure 4.4 – Measures for the improvement of Energy Efficiency in the Transport Sector / Measures for Personal Cars / Energy Labelling of new cars)*	
Actions taken to date	*So far there are two similar practices in place, but not directly related to the purpose of this directive: (i) a list of prices of new passenger cars according to fuel type, fuel economy, cylinder and CO_2 emissions is published to assist custom clearance procedures and calculation of financial obligations; and (ii) CO_2 emissions are part of the checklist for the annual technical control of each vehicle.*	
Main Objective of PaM	*Setting a regulatory framework ensuring transparent information relating to the fuel economy (efficiency) and CO_2 emissions of new passenger cars offered for sale or lease.*	
Results to be achieved	- *Make available to consumers to make their choice and having its impact on energy consumption reduction and less emissions.*	
Measures to be implemented	- *Transposition and adoption of the Directive 1999/94/EU, Directive 2003/73/EU, Commission Recommendation 2003/217/EC and Commission Recommendation (EU) 2017/948.*	*by 2026* *2026 on*

	- *Training will be provided to competent authorities and stakeholders for implementation of the requirements on ensuring availability of consumer information on fuel economy and CO_2 emissions.*	
Budget (source of budgeting)	*2 MEur* *Technical assistance to be provided for the transposition of the above-mentioned directives and recommendations.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Private (concessionaires as selling imported cars)* *(Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation; Research, Innovation & Competitiveness*	

Energy Dimension	*2. Energy Efficiency*	
Sector	*Transport*	
Modelling Scenario Considered **Type of Instrument**	*WAM* *Regulatory; Financial, Fiscal;*	
Title of PaM (Coding)	*Increase the share of Electrical Vehicles in the national car fleet* *(EE-T2)*	
Timeframe	*2023 - 2030*	
Legal basis and planning documents	*Law No.155/2020 of 17.12.2020 "on Climate Change"; DCM No. 466 of 3.7.2019 "On the Approval of the Strategic Document and National Plan for the Mitigation of Greenhouse Gas Effects and Adaptation from Climate Change", National Transport Strategy, NDC (2016-2030)*	
Actions taken to date	*On national level, to promote electric vehicle there are some incentives: (i) No "first-time registration fee" on new vehicles; (ii) No vehicle tax for the first 5 years; (iii) VAT exemption (20%) for Electric Vehicles; (iv) Exemption from VAT of new vehicles only with electric motor, in order to encourage individuals and businesses to orient towards the purchase of these vehicles; and (v) Free travel on toll roads*	
Main Objective of PaM	*Establishing the electrical charging stations to improve overall sustainability of the Road and Urban Mobility System and reduction of GHG emissions coming from the transport sector through deploying charging infrastructure.*	
Results to be achieved	- *Reduce fossil-based energy consumption and establishment of the sustainable public/ private transport, through development of the electric car charging towers infrastructures* - *Establishment of 200-300 electric car charging towers throughout Albania by 2025* - *Meeting Albania's commitments under the Sustainable Mobility Directive* - *Reducing air pollution by promoting electric cars to European standards* - *In terms of expected impact on transport CO_2 emission, an overall reduction of about 2.5-3% of total CO_2 emission by 2025 (given the target 5% share in total energy use, and the expected reduction of 50-60% in CO_2 emission per vehicle*km compared to fossil fuels) and up to 5-6% in 2030 (given the target 10% share in total energy use) as corresponds to NDC proposal.*	
Measures to be implemented	- *Development of the electric car charging towers infrastructures* - *Upgrade to taxi fleet with hybrid or electric models*	*by 2025* *by 2025*
Budget (source of budgeting)	*Approx. 5 MEur CAPEX (capital expenses) of charging towers infrastructures;* *Upgrade to taxi fleet with hybrid or electric models with a capital cost approx. 0.5 MEur*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Municipality of Tirana, Albanian Energy Efficiency Agency* *(Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Albanian Energy Efficiency Agency)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy*	

Energy Dimension	*2. Energy Efficiency*	
Sector	*Transport*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial; Fiscal*	
Title of PaM (Coding)	*Support mechanisms for EE and clean vehicles (EE-T3)*	
Timeframe	*2023 – ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 580 of 28.8.2019 "On approval of the consolidated national action plan for renewable energy sources, 2019–2020"*	
Actions taken to date	*Applying the Instruction No. 6527 of 24.12.2004 "Permissible values of air pollutants in the environment from gas emissions and noise caused by road vehicles, and ways to control them", amended. Carbon tax is set at 1.5 lek per liter for gasoline, 3 lek per liter for oil (Law No.9975, dated 28.7.2008 "For national taxes", (changed)).* *DCM No. 633 of 26.10.2018 "On measures against air pollution from emissions of motor vehicles and reduction of emissions into the air of gaseous pollutants and suspended solids from engines with positive ignition and those with compression ignition that burn natural gas or liquid for use in vehicles" (for new vehicles to meet at least the EURO 5 engine standard, and for used vehicles to meet at least the EURO 4 engine standard, and they must have been produced not more than 10 years before the date of first registration in Albania).* *Imported vehicles are subject to the customs rate of 0%. However, the imported vehicle owners are obliged to pay VAT of 20%, while the supply of new vehicles with zero-km electric engine, not previously registered in any other country, is entirely exempted from VAT.* *Excise is reimbursed for biofuels used in the transport by the customs authority, up to 5%.* *Railway: There are a number of projects under development which envisage rehabilitation including electrification and connection with neighbouring countries.* *EV and EV charging points have been introduced to the market in Tirana.* *Electric and low emissions buses have been introduced in Tirana.*	
Main Objective of PaM	*The promotion and supporting the use of alternative/clean fuels and energy efficiency vehicle as the ways to produce the most significant effects by reducing energy consumption and mainly the reduction of GHG emission through supporting schemes of efficient vehicles and green ones.*	
Results to be achieved	- *Share of renewable energy sources in transport was planned to be 10% in 2020 and 10% in every year afterwards until 2030* - *Target for renewables in transport to be achieved by 2030* - *No "first-time registration fee" on new vehicles* - *No vehicle tax for the first 5 years* - *VAT exemption (20%) for Electric Vehicles* - *Exemption from VAT of new vehicles only with electric motor, in order to encourage individuals and businesses to orient towards the purchase of these vehicles* - *Free travel on toll roads* - *Replacement of buses with low emission buses (Municipality of Tirana)*	
Measures to be implemented	- *Legal framework to impose the objectives, targets, obligations, deadlines, stakeholders, etc.* o *Set up by legal framework the targets of RES for biofuel and hydrogen which are to be used in transport sector as well as the including of the provision for electricity used specifically for transport.* o *Set up by legal framework the obligation of producers/importers/retailers regarding the quantities and qualities (Certification) of RES specific for transport market and for importers/retailers and users of vehicle concern to the energy efficiency.* o *Updating action plan related to the EE in transport sector defining targets including the ways to increase the market of EE and clean vehicles.*	*by 2027*

	○ *Green procurement to be addressed for public sector in favour of increasing the fleet of clean vehicles except energy efficiency criteria (established by amended EE law) due to increase the number of green vehicles vs conventional fuels.* - *Financial supports/incentives for manufactures of vehicles, for retailers and for consumers* ○ *Grants, soft loans for the purchase of green vehicles* ○ *Rebates/vehicle purchase price subsidy: financial benefit received when purchasing a qualifying vehicle* ○ *Feebate: financial measure where a qualifying vehicle receive a purchase rebate, while a surcharge or fee is placed on certain vehicle types linked to the CO_2 emissions of vehicles* ○ *Scrappage scheme: measure which promotes the replacement of older vehicles with newer, less polluting models and higher efficiency* ○ *Charges, penalties or bans for most pollutant vehicles* ○ *Exemption from or reduction of annual vehicle taxes (for some years)* ○ *Exemption from or reduction of motor fuel taxes* ○ *Reduced roadway taxes* ○ *Discounted or free parking* ○ *Tax exemptions and deductions for import vehicle, purchase or registration tax* ○ *There is a planned incentive ranging from 5% to 10% of the purchasing cost for a new electric car; free maintenance and ancillary services for electric car owners; and incentives and discounts offered also to hybrid car owners.* ○ *Free parking on all public parking spaces.* - *Technical measures* ○ *Upgrade to taxi fleet with hybrid or electric models*	*2027 on* *2022 on*
Budget (source of budgeting)	*To achieve the target of 15.5% for EE by 2030 (460 ktoe compared with BaU scenario-Fig 4, NSE) there is an estimation about 228 MEur to be invested.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Municipalities; Albanian Energy Efficiency Agency; General Directorate of Customs; Private Sector* *(Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Albanian Energy Efficiency Agency; National Agency of Natural Resources)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy*	

Energy Dimension	*2. Energy Efficiency*	
Sector	*Transport*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Increasing the share of public transport for passengers and freight (roads, railways and waterways)* *(EE-T4)*	
Timeframe	*2021 – ongoing*	
Legal basis and planning documents	*DCM No. 811 of 16.11.2016, "The approval of the Transport Strategy and Action Plan 2016-2020"; Sectoral strategy of transport & action plan 2016 – 2020 (2019 Monitoring report)*	
Actions taken to date	*Revision of the current PT fare structure (tickets/card types and pricing) short term.* *Tirana – Elbasan road segment planned in the strategy completed in June 2019.* *Construction of Fier by-pass completed June 2020.* *The project for the Traffic Management Centre for the primary road network of Albania is being prepared and implemented with the World Bank.* *New Bus Terminal completed.* *There are identified the railway development projects and included these in the Single Sector Project Pipeline (SSPP) for transport sector.* *Ongoing effort for Establish and implement the Albanian Vessel Traffic Monitoring and Information System.* *Develop quantified and integrated operational and strategic action plan for port growth and modernization.*	
Main Objective of PaM	*Supporting by regulatory framework, technical, financial mechanisms the increase of the share of public transportation due to environmentally and economically issues.*	
Results to be achieved	- *Increasing the number of busses, frequency, road qualities and access, dedicated lanes, transport intelligent system, railway infrastructure, transit interchanges, increasing the load factor, competitive prices vs private transport, improving coordination between modes of transport - buses, trains, ships.* - *Increase shift to public and active transport: Achieve 70% mode split for public and active transport modes for Tirana municipality.* - *Reform the rail system setting up an open market for public and private investors in terms of market regulation, infrastructure management or rail operations.* - *Modernization of port infrastructure through investments.* - *Strengthening the Maritime Administration in line with EU standards.* - *An increase in the specialization of port functions in order to increase their intermodally, especially for port-rail connection.*	
Measures to be implemented	- *Improving public transport infrastructure across the city by upgrading the local public transport network, providing dedicated bus lanes, etc.* - *Reconstruction of roads that has already begun on a large scale and has already improved the image of public transport via increase in density and frequency of electric buses in the network.* - *Construction of the Tirana Public Transport Terminal, and the Bus Rapid Transport system (BRT) Tirana – Rinas* - *Tirana Ring (2016 – 2018) (South – West side to be completed - delayed)* - *Improve public transportation (new fleet (electric and labelled included)) and construction of dedicated 10km cycling lanes* - *Finalizing the electrified railway Durrës -Tirana- Rinas*	*by 2030*
Budget (source of budgeting)	*Durrës -Tirana- Rinas 129 MEur* *Not a single value because there are several projects related to several interventions for the transport system*	

Implem. Entity (Monitoring Entity)	*MIE, MFE, Municipalities; Energy Efficiency Agency; National Road Authority, General Directorate of Road Transport Services, General Maritime Directorate, Port Authority Durrës. (Ministry of Infrastructure and Energy, Ministry of Finance and Economy, Albanian Energy Efficiency Agency; Donors)*
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy*

Energy Dimension	*2. Energy efficiency*	
Sector	*Transport*	
Modelling Scenario Considered	*WEM and WAM*	
Type of Instrument	*Regulatory; Fiscal*	
Title of PaM (Coding)	*Improvement of railway transport network, linking Albania with the international railway transport network (EE-T5)*	
Timeframe	*2020 – ongoing*	
Legal basis and planning documents	*Second Review of the Albanian National Transport Plan (ANTP3), approved by the Order of Minister No. 40 of 21.01.2020; law 90/2021 "On the division of the company HSH sh.a., law 88/2021 "On the establishment of the railway safety authority"; Law no. 89/2021 "On the establishment of the Railway Regulatory Authority";*	
Actions taken to date	- *Reformation of railway system in Albania and Albanian Railway SA) - ongoing* - *Feasibility study for construction of the Tiranë – Durrës railway and the link with international airport "Madre Teresa";*	
Main Objective of PaM	*The main objectives are: (i) rehabilitation and improving the railway infrastructure and passenger terminals; (ii) linking Albanian railway system with the regional and the EU railway network; (iii) reduce CO_2 emissions caused by existing railway network; (iv) implementing legislation for unbundling train operations from infrastructure management.*	
Results to be achieved	- *Increasing the economic-financial effectiveness of Albanian Railway Company;* - *Optimal and effective use of the available railway infrastructure capacity;* - *Removed administrative barriers and a non-discriminatory access to the railway infrastructure;* - *Reduced fuel consumption of vehicles by shifting the road traffic towards a more efficient mode of transportation;* - *Increased reliability and the use of the railway transport mode;* - *Travel speed increased from the current 40 km per hour to 100 km per hour;* - *Increased rail transport of passengers up to 1,4 mil per year in the segment Tiranë – Durrës where is concentrated most of economic activity; freight transport increased;* - *Increased cross-border rail transport of goods;* - *Increased the safety and quality of service on railway transport lines;*	
Measures to be implemented	*Drafting and approval of New National Transport Strategy and its Action Plan 2021 – 2026* *Extension of the TEN-T Comprehensive Network* - *Construction of new line Pogradec - Korça - border with Greece (CBC railway), 151.3 MEur, deadline 2029, feasibility study from WBIF; Completed pre-feasibility (IPA CBC Greece - Albania). Feasibility and Detailed Design will be provided in the CBC program 2021 - 2027.* - *Rehabilitation of Durrës-Pogradec-Lini and construction of new line up to the North Macedonian border (Corridor VIII) (existing 151 km Durrës-Elbasan-Pogradec and 2.8 km for Lin - North Macedonia border), estimated cost 206.7 MEur.* - *Rrogozhine - Pogradec segment, detailed design supported by EIB technical assistance. The project as part of the TEN-T network bridges 2 EU Countries (Italia and Bulgaria), with intermodal transport maritime and railways and enhance connectivity by rail of*	*by 2021* *by 2029*

	Albania and North Macedonia in Western Balkan region and linking with Turkey by maritime /rail. It enhances connectivity to Serbia, Kosovo and Greece by rail. *Extention of the TEN-T core network* - *Rehabilitation of the line Durrës-Tirane and Public transport terminal of Tirana (34.1km) and construction of new Tirana-Rinas branch, 5km including signaling / telecommunication systems and the new train station (Corridor VIII), estimated cost 90.45 MEur; implementation 2025;* - *Replacement and modernization of railway vehicles with a more advanced and ecological technology;* - *Rehabilitation of Durrës - Vora - Shkodra - Hani Hotit, Montenegro border (140 km), (Mediterranean Rail Corridor R2 ROUTE 2), estimated cost 267 MEur, expected implementation 2027;* *Electrification of the Tirane – Durres line and the connection with airport "Mother Teresa", estimated cost 100 MEur, to be considered after 2030.*	*by 2025* *by 2027* *2030 on*
Budget (source of budgeting)	*The budget foreseen for extension of the comprehensive and core TEN-T network will be financed from IFI-s and financial instruments and by the state budget; cost estimations see section above.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Energy Efficiency; Decarbonisation*	

3.3 Energy Security

3.3.1 Overarching legal framework

The main legal acts (including strategies and plans) related to this dimension are listed below:

1. **Law No. 102/2015 of 23.9.2015 "On the natural gas sector", amended**
2. **Law No. 43/2015 of 30.4.2015 "on Power Sector", amended**
3. **Law No.7746 of 28.7.1993 "on Hydrocarbons", amended**
4. **DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"**
5. **DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects"**
6. **DCM No. 417 of 10.5.2017 "Natural gas emergency plan, in compliance with minimum supply security standards, as well as rules to guarantee safe and effective supply of natural gas"**
7. **Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products"** (draft version)

In the Tables below are the Policies and Measures divided by the sectors they are related to.

3.3.2 Power sector

Energy Dimension	*3. Energy Security*
Sector	*Power*
Modelling Scenario Considered	*WEM*
Type of Instrument	*Regulatory; Financial; Technical*

Title of PaM (Coding)	*Gas supply for Vlora Thermal Power Plant (ES-P1)*	
Timeframe	*2021 – ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects"*	
Actions taken to date	*Preparation and approval of the process.*	
Main Objective of PaM	*Restart operation of Vlora thermal power plant with the supply of natural gas via Trans Adriatic Pipeline (TAP) and Vlora pipeline branch of it.*	
Results to be achieved	- *Reduction of electrical energy imports* - *TPP Vlora could cover 20 % of Albanian electricity deficit*	
Measures to be implemented	- *Public procurement for placing the Vlora TPP in operation.* *TPP Vlora is assumed to be operational in 2026.*	*by 2025*
Budget (source of budgeting)	*Approx. 58 MEur, to be financed with KESH sh.a. own funds*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Energy Regulator Entity, Albanian Power Corporation (KESH)* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Decarbonisation*	

Energy Dimension	*3. Energy Security*	
Sector	*Power*	
Modelling Scenario Considered	*WEM and WAM (see results section)*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Construction of new state owned power plants Skavica, Vau Dejës, Belsh PV (ES-P2)*	
Timeframe	*2021 – ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030";* *The Law No. 38/2021 "On Skavica HPP";* *DCM no. 485, dated 30.07.2021 For the approval of the contract of the first phase "Contract for technical services Skavica hydropower project"* *DCM 822 "On the construction of new generation capacities that are not object of concession".*	
Actions taken to date	- *Total electricity production capacity installed in our country until December 31st 2023 is about 2,675 MW. This capacity has had an increase in 2023 of about 26 MW.* - *Total electricity generation capacity of the public company KESH sh.a. is 1,453 MW and it accounts for about 54.2% of the total installed capacity in our country.* - *The total installed capacity of other electricity producers is 1,222 MW and it is estimated 45.8% of the total installed capacity in our country.*	
Main Objective of PaM	*Taking all the necessary measures for the implementation of the project Skavica hydro power plant, PV Floating Vau I Dejes, Belshi 50 MW PV.*	
Results to be achieved	*Increase energetic independence, increased capacity production in other plants of cascade, 50% reduction of annual imports of electricity*	
Measures to be implemented	*For the WEM:* - *floating PV plant in Vau Dejës (12.9MW in 2022)* *For the WAM:* - *Approval of the second phase of Skavica Hydro Power Plant (assumed to be operational 2028)* - *Belshi 50 MW solar photovoltaic (PV) plant and the associated electrical infrastructure and 5 km 110 kV overhead line connection ("the Project") in an existing substation in Kajan.*	*2022* *by 2025* *by 2026*

	(assumed to be operational in 2026)	
Budget (source of budgeting)	*Skavica Hydro Power Plant (308 – 510 MEur), floating PV plant Vau Dejës 13,9 MEur (12.9MW) Belshi 50 MW PV- not defined*	
Implem. Entity (Monitoring Entity)	*KESH Sha, Council of Ministers; Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy*	

3.3.3 Oil & Gas Sector

Energy Dimension	*3. Energy Security*	
Sector	*Oil and Gas Sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Fully functional legal framework for a reliable and safe gas supply to customers (ES-O1)*	
Timeframe	*2018 - 2040*	
Legal basis and planning documents	*Law No. 102/2015 of 23.9.2015 "On the natural gas sector", amended; DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects"*	
Actions taken to date	*The regulatory framework established so far in Albania is at a much higher level than its infrastructure development progress. However, there is a group of bylaws to be approved which are legal, technical and regulatory.* *Two transmission system operators were unbundled and certified. The Trans Adriatic Pipeline (TAP) is operational.* *Albgaz and TAP adopted network codes, which were approved by ERE. ERE transposed the Gas Network Codes in Albania. Third party access to the transmission system is regulated by tariffs adopted in line with an entry/exit methodology. All customers are eligible. Supply and customer protection legislation is developed. The gas emergency rules are in place.*	
Main Objective of PaM	*A reliable and stable natural gas supply to customers, through the creation of a market that is competitive and integrated with regional and European markets, and offering a high-quality service, reasonable costs, in compliance with environmental protection requirements.*	
Results to be achieved	- *Through approval of a group of sub-laws for implementation of legal and technical requirements of the law to create a functional legal framework for a reliable and safe gas supply, creation of natural gas wholesale market.* - *The sub-laws are identified and submitted.*	
Measures to be implemented	- *Revision of the Gas Master Plan https://www.infrastruktura.gov.al/wp-content/uploads/2017/12/WB11-ALB-ENE-01_final_GMP_2016_11_24.pdf* - *Approval of legal framework, regulatory rules and technical, transmission, distribution codes.*	*by 2026* *by 2028*
Budget (source of budgeting)	*Revision of the Gas Master Plan: technical assistance to update the study, e.g. to be financed under the Western Balkans Investment Framework (WBIF), cost estimation is 1 MEur. The current master plan foresees three development terms: short, medium, long. No specific budget foreseen for the implementation of these measures, apart from specific projects listed in PaM ES-O2 Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, ALBGAZ*	

Relation with other dimensions (if any)	*Internal energy market* *Relation with the following PaM:* *ES-O2 Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan*

Energy Dimension	*3. Energy Security*	
Sector	*Oil and Gas Sector*	
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan* *(ES-O2)*	
Timeframe	*2018 - ongoing*	
Legal basis and planning documents	*Law No. 102/2015 of 23.9.2015 "On the natural gas sector", amended; DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects"*	
Actions taken to date	*The Steering Committee of WBIF in its meeting of 6 December 2018 approved a grant of 1.1 MEur for the preparation of the "Fieri – Vlora gas pipeline: Detailed Design and Tender documents". The consultant Hill International – IPF 7 Consortium, in January 2020 delivered for comments the document "Methodology for Fieri – Vlora gas pipeline: Detailed Design and Tender documents".* *"Pre-feasibility Study for Albania to Kosovo Gas Pipeline" (ALKOGAP project), implemented by IPF4 TA, financed by the WBIF with a grant 0.3 MEur. The prefeasibility Study was completed at the end of 2018, under the WB15-REG-ENE-01.* *Preliminary project for Ionian Adriatic Pipeline (Albania and Montenegro track) – WBIF has given a grant of 2.5 MEur.*	
Main Objective of PaM	*A new and functional gas transmission and distribution system in Albania.* *To supply TPP Vlora with gas.*	
Results to be achieved	- *Penetration of the natural gas (ktoe) vs. total primary energy sources supply 0,37% in 2020, 5.1% in 2025 and 8.5% in 2030, as targeted from National Strategy for Energy.* - *In 2040, the potential consumption of natural gas for electricity generation could be around 770 million m³, while the projected consumption at the country's refineries could be around 89.2 million m³.* - *85 out of 376 local administrative units have been selected for having sufficient potential for development of the gas distribution network.*	
Measures to be implemented	- *Implementation of TAP branch CP1 - Fier – Vlora. Transmission line approx. 40 km, cost about 15 M Eur, to be built within 3 years. Distribution network in the city of Vlora, about 230 km, cost approx. 32 MEur. Full feasibility study through the assistance provided by SECO. (medium term priority)* - *Implementation of branch TAP CP1-Fier-Ballsh, complementing gas supply of the industrial triangle Fier-Vlora-Ballsh. Transmission line about 39 km long, the cost about 11 MEur, to be built within 3 years. The distribution network in the urban areas of this branch is estimated 69 MEur (medium term priority).* - *Implementation of branch for Tirana - Durrës. Approx. cost of this transmission network is about 11 MEur, for a length of about 35 km.*	*2026 on*
Budget (source of budgeting)	*Cost estimation for branches see above; financing sources and the modalities to be determined.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, ALBGAZ* *(Ministry of Infrastructure and Energy, ALBGAZ; Energy Regulator Entity)*	

Relation with other dimensions (if any)	*Internal energy market*

Energy Dimension	*3. Energy Security*	
Sector	*Oil and Gas Sector*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory*	
Title of PaM (Coding)	*Linking Albania with the international gas network (ES-O3)*	
Timeframe	*2018 - ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects".*	
Actions taken to date	- *Approval of necessary legal framework. Albania has been developing natural gas by-laws since the adoption of the Gas Law in 2015. The regulatory framework established so far in Albania is at a much higher level than its infrastructure development progress.* - *Albgaz network code for future transmission system and the adoption of the TAP network code, the latter in line with the exemption decision of ERE and Italian and Greek national authorities.* - *The regulatory authority ERE transposed the Network Codes for gas in Albania.* - *Approval of Gas Sector Development Plan* - *Identification and approval of priority projects* - *Preliminary project for Ionian Adriatic Pipeline (Albania and Montenegro track) – WBIF* - *Pre-feasibility Study for Albania to Kosovo Gas Pipeline (ALKOGAP) project*	
Main Objective of PaM	*Linking Albania with the international gas network according to the best option (Eurasia Gas Corridor and Energy Community Gas Ring, TAP, IAP, Albania Kosovo Gas Pipeline" (ALKOGAP project)).*	
Results to be achieved	*Albania linked with the international gas network according to the best option for the development of a regional gas market and increase of gas supply security.*	
Measures to be implemented	- *Through approval of legal framework, regulatory rules and technical and transmission codes* - *Regional and international agreements* - *Financing and implementation of approved priority projects*	*by 2035*
Budget (source of budgeting)	*"Pre-feasibility Study for Albania to Kosovo Gas Pipeline" (ALKOGAP project), implemented by IPF4 TA, financed by the WBIF with a grant 0.3 MEur (was completed at the end of 2018): Approx.150 MEur for Albania - Kosovo Gas Pipeline (ALKOGAP project, Albanian section). 67 MEur for 168km are for Ionian Adriatic Pipeline (IAP).*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, ALBGAZ (Ministry of Infrastructure and Energy, ALBGAZ; Energy Regulator Entity)*	
Relation with other dimensions (if any)	*Internal energy market*	

Energy Dimension	*3. Energy Security*	
Sector	*Oil and Gas Sector*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Hydrocarbons exploration, production and processing (ES-O4)*	
Timeframe	*2018 -ongoing*	
Legal basis and planning documents	*Law No.7746 of 28.7.1993 "on Hydrocarbons", amended and law No. 8450, dated 24.2.1999 "On processing, transportation and trading of oil, gas and their by-products", amended.*	
Actions taken to date	*Revision of the legal framework that regulates the activity of exploration, production and refining and transportation of hydrocarbon substances*	
Main Objective of PaM	*Rehabilitation of exploration and refineries to European norms and standards, including adoption of environmental norms for refinery products and technology, at the existing capacities.*	
Results to be achieved	- *A system for fuel quality control is in place and specified in legislation.* - *Fuel quality monitoring is ensured through Annual Monitoring Programmes.*	
Measures to be implemented	- *Through approval of legal framework, regulatory rules and technical and codes* - *Studies for rehabilitation and modernization of exploration and refinery plants*	*by 2026*
Budget (source of budgeting)	*No budget assessed since investment costs depend directly on the actual situation of installations, equipment and environment pollution level; to be determined by study, financed by a Technical Assistance Program, estimated at 0.5 Meur.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, ALBPETROL (Ministry of Infrastructure and Energy, ALBPETROL; Energy Regulator Entity)*	
Relation with other dimensions (if any)	*Decarbonisation*	

Energy Dimension	*3. Energy Security*
Sector	*Oil and Gas Sector*
Modelling Scenario Considered	*WEM*
Type of Instrument	*Regulatory; Financial*
Title of PaM (Coding)	*Emergency plan for natural gas (ES-O5)*
Timeframe	*2017 - ongoing*
Legal basis and planning documents	*Law No.102/2015 of 23.9.2015 "On the natural gas sector", amended; DCM No. 417 of 10.5.2017 "Natural gas emergency plan, in compliance with minimum supply security standards, as well as rules to guarantee safe and effective supply of natural gas"*
Actions taken to date	*Albgaz, has been unbundled and certified under the ownership model.* *Albgaz network code for its future transmission system and the adoption of the TAP network code, the latter in line with the exemption decision of ERE and Italian and Greek national authorities.* *The regulatory authority ERE transposed the Network Codes for gas in Albania.* *Albania has two coastal oil and gas terminals: Porto Romano in Durres, and Petrolifera in Vlora.* *The project "Underground Gas Storage Dumrea (UGS Dumrea)" enables decreasing the overall cost of gas supply to end consumers through providing additional services to gas markets such as supply and demand flexibility and creating related trading opportunities. Gas storage can also increase the security of supply.*

	The introduction of LNG, in any form in the Vlora area, and the construction of the Fieri – Vlora gas pipeline will serve for the development of the gas sector in Albania. This will increase the feasibility of the gas transmission and distribution system by using the bidirectional connection of the exit point of the TAP. *For the gasification of Albania, it was signed the MoU for cooperation between the Ministry of Infrastructure and Energy and the American companies Exxon Mobil and Excelerate Energy on 12.03.2021. This MoU is essentially related to the evaluation of the technical and commercial regulatory framework for the introduction of liquefied natural gas (LNG) in Albania. It includes the complete chain of using LNG in Albania.* *Albanian gas company, Albgaz, the US Excelerate Energy L.P. (Excelerate) and the Italian company Snam S.p.A (Snam) signed in Tirana the Memorandum of Understanding, on the possibilities of cooperation for the construction of a gas pipeline from the Vlora Terminal to the other possible natural gas infrastructures in Albania.*	
Main Objective of PaM	*The definition of the standards related to the minimum requirements suitable for the security of natural gas supply in the Republic of Albania, the mandatory criteria for ensuring reliable and efficient supply of natural gas as well as the duties and responsibilities of institutions for managing emergency situations in gas supply to customers.*	
Results to be achieved	- *Determine standards for minimal requirements for safety supply.* - *Instruments and measures to guarantee an adequate and clearly defined supply of gas for protected customers, in accordance with supply safety standards.* - *Instruments for prediction and assessment of potential risks, which clearly set out actions to prevent these risks and measures to mitigate possible damages related to them.* - *A program to reduce or stop the supply of natural gas to specific categories of customers in the event of a crisis situation.* - *Definitions of the role and responsibilities of gas provider companies and non-household consumers, taking into account the various impact measures in case of a crisis in the natural gas sector.* - *Criteria regarding storage plants, in order to meet supply safety standards, as well as possible contributions for storage plants located either in the Republic of Albania or in another contracting party in the Energy Community, or member country of the Union European.* - *Important measures and actions to be taken to eliminate or mitigate the impact of a natural gas supply outage, in accordance with different levels of crisis.*	
Measures to be implemented	- *Through approval of legal framework, regulatory rules and technical codes* - *Interconnection in regional and international gas pipelines* - *Financing gas storage projects*	*by 2035*
Budget (source of budgeting)	*No budget assessed*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, Albgaz, Energy Regulator Entity* *(Ministry of Infrastructure and Energy, Energy Regulator Entity)*	
Relation with other dimensions (if any)	*Internal energy market*	

Energy Dimension	*3. Energy Security*	
Sector	*Oil and Gas Sector*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Approval of Law "On the establishment, maintenance and management of the minimum reserves of crude oil security and its products" (ES-O6)*	
Timeframe	*2010 - ongoing*	
Legal basis and planning documents	*New draft Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products" transposing Council Directive 2009/119 in Albanian Legislation*	
Actions taken to date	*The representatives of the ministries are discussing the final draft of Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products", which is submitted to the Council of Ministers for approval.*	
Main Objective of PaM	*The representatives of the ministries are discussing the final draft of Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products", which will be submitted to the Council of Ministers for approval after reviewing once again the model that will be used for the maintenance and management of the security reserves, in accordance with the consultative meetings being held in the Secretariat of Energy Community in Vienna..*	
Results to be achieved	- *New Law "On the establishment, maintenance and management of security minimum stocks of crude oil and petroleum products" transposing Council Directive 2009/119 in Albanian Legislation.* - *Approximation of the Council Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products.* - *Establishment of stockholding body plans to release stocks in the case of an emergency, definition of storage capacity and purchase of stocks depend on the approval and provisions of the draft Law.*	
Measures to be implemented	*Through approval by Albanian government and Albanian Parliament of the new law.*	*by 2025*
Budget (source of budgeting)	*No specific budget foreseen for this measure*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy* *(Ministry of Infrastructure and Energy, State Technical and Industrial Inspectorate)*	
Relation with other dimensions (if any)	*Internal energy market*	

3.3.4 Regional Cooperation

Energy Dimension	*3. Energy Security*	
Sector	*Regional Cooperation*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Ionian Adriatic Pipeline & Albania Kosovo Gas Pipeline (ES-R1)*	
Timeframe	*2018 - ongoing*	
Legal basis and planning documents	*DCM No. 480 of 31.7.2018 "on the Approval of the National Energy Strategy 2018 – 2030"; DCM No. 87 of 14.2.2018 "Natural gas sector development master plan in Albania and identification of priority projects".* *DCM No. 685 of 14.11.2018 "On the approval of practices for the promotion of joint, regional investment in the infrastructure of the energy sector".*	
Actions taken to date	- *Approval of necessary legal framework. Albania has been developing natural gas by-laws since the adoption of the Gas Law in 2015. The regulatory framework established so far in Albania is at a much higher level than its infrastructure development progress.* - *Albgaz network code for future transmission system and the adoption of the TAP network code, the latter in line with the exemption decision of ERE and Italian and Greek national authorities. The regulatory authority ERE transposed the Network Codes for gas in Albania.* - *Approval of Gas Sector Development Plan* - *Identification and approval of priority projects* - *Preliminary project for Ionian Adriatic Pipeline (Albania and Montenegro track) – WBIF* - *Pre-feasibility Study for Albania to Kosovo Gas Pipeline (ALKOGAP) project*	
Main Objective of PaM	*Contributing to regional energy security by linking Albania new transmission pipelines with the regional gas network according to the best option of IAP and Albania Kosovo Gas Pipeline" (ALKOGAP project).*	
Results to be achieved	- *The preparation of the necessary legal frame for open market and liberalization technical codes and regulatory rules* - *Completion of the Ionian Adriatic Pipeline (Albanian part)* - *Completion of the Albania - Kosovo Gas Pipeline" (ALKOGAP project).*	
Measures to be implemented	- *Through approval of legal framework, regulatory rules and technical and transmission codes* - *Regional and international agreements* - *Financing and implementation of approved priority projects*	*by 2035*
Budget (source of budgeting)	*67 MEur for 168km are for Ionian Adriatic Pipeline* *Approx.180 MEur for Albania - Kosovo Gas Pipeline (ALKOGAP project, Albanian section)*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy*	
Relation with other dimensions (if any)	*Internal energy market, Decarbonisation* *Relation with the following PaM:* *ES-O3 Linking Albania with the international gas network*	

3.4 Internal Energy Market

3.4.1 Overarching legal framework

The main legal acts (including strategies and plans) related to this dimension are listed below:

1. Law no. 43/2015, dated 30.04.2015, "On Electricity Sector" (as amended)

2. Law no. 24/2023, "On Promotion of use of energy from renewable sources

3. CoM Decision no. 480, dated 31.07.2018, "On the approval of the National Energy Strategy 2018–2030"

4. CoM Decision no. 519, dated 13.07.2016, "On the approval of the Electricity Market Model" (as amended)

5. CoM Decision no. 449, dated 15.06.2016, "On the approval of the Terms and Procedures for Designation of the Electricity Supplier of Last Resort"

6. CoM Decision no. 456, dated 29.06.2022, "On the approval of Conditions for Establishing Public Service Obligation Imposed on Licensees in the Electricity Sector Carrying Out the Activity of Production, Transmission, Distribution, and Supply of Electricity"

7. MIE Order no. 28, dated 18.01.2021, "On the approval of the Roadmap for Electricity Market Opening and Price Deregulation" (as amended)

8. ERE Board Decision no. 347, dated 27.12.2022, "On the approval of the Electricity Market Rules"

9. ERE Board Decision no. 106, dated 02.07.2020, "On the approval of the Electricity Balancing Market Rules" (as amended)

10. ERE Board Decision no. 126, dated 17.05.2021, "On the approval of the Regulation on Wholesale Energy Market Integrity and Transparency"

11. ERE Board Decision no. 40, dated 06.03.2020, "On the approval of the Regulation for the Requirements and Procedures for Designation of the Nominated Electricity Market Operator (NEMO) and the Roles and Responsibilities of NEMO and of the Transmission System Operator in the Energy Market Coupling"

12. ERE Board Decision no. 118, dated 27.07.2017, "On the approval of the Rules on Publication of the General Data of the Electricity Market"

13. ERE Board Decision no. 154, dated 11.12.2015, "On the approval of the Rules on Certification of the Electricity Transmission System Operator"

14. ERE Board Decision no. 113, dated 08.07.2016, "On approval of the Regulation on Electricity Supplier Switching" (as amended)

15. ERE Board Decision no. 112, dated 09.07.2020, "On the approval of the Regulation for Standard Load Profiles for Certain Categories of Customers in Case the Metering Data for Calculation of Electricity Imbalances is Unavailable"

16. ERE Board Decision no. 63, dated 11.04.2022, "On the approval of the Transmission Code"

17. ERE Board Decision no. 100, dated 26.08.2008, "On the approval of the Distribution Code" (as amended)

18. ERE Board Decision no. 101, dated 26.08.2008, "On the approval of the Metering Code"

19. ERE Board Decision no. 127, dated 04.06.2018, "On the approval of the Network Code on Requirements for Grid Connection of High Voltage Direct Current Systems and Direct Current-Connected Power Park Modules"

20. ERE Board Decision no. 128, dated 04.06.2018, "On the approval of the Network Code on Requirements for Grid Connection of Demand"

21. ERE Board Decision no. 129, dated 04.06.2018, "On the approval of the Network Code on Requirements for Grid Connection of Generators"

In the Tables below are the Policies and Measures divided by the sectors they are related to.

3.4.2 Electricity Infrastructure

Energy Dimension	*4. Energy Market*	
Sector	*Electricity Infrastructure*	
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Financial*	
Title of PaM (Coding)	*Electricity interconnectors (EM-I1)*	
Timeframe	*2017 - ongoing*	
Legal basis and planning documents	*Law no. 43/2015, dated 30.04.2015, "On Electricity Sector" (as amended)* *DCM No.16 of 11.01.2017 "On the approval of requirements and procedures for authorization of construction of new interconnectors"* *ERE Decision No 135 of 06.09.2017 "Rules of Procedure for submission and approval of development plans (DSO, TSO)"* *The 10 year investment plan, masterplan of TSO*	
Actions taken to date	*The DCM No.16 of 11.01.2017 is part of group of PaMs connected with the development of electricity market: (i) DCM No. 718 of 12.10.2016 "Rules and procedures for the construction of new generating capacities"; (ii) ERE Decision No. 186 of 10.11.2017 "Transmission Network Code"; (iii) ERE Decision No 180 of 08.11.2017 "Methodology for transmission network tariffs"; (iv) ERE Decision "Regulation on the certification of the transmission system operator for electricity"; and (v) ERE Decision No 135 of 06.09.2017 "Rules of Procedure for submission and approval of development plans (DSO, TSO)"*	
Main Objective of PaM	*Increase the interconnection and transmission capacity of Albanian Transmission Grid in accordance with the masterplan, 10 year investment plan of TSO.* *Define the requirements and procedures needed to obtain the permission for construction of new high voltage (110 kV and up) interconnection lines from Albanian Transmission System Operator or private investors.*	
Results to be achieved	- *Develop the network to respond to increases in demand for transmission capacity* - *Supporting market transactions in the territory of the state and the region so that the transmission network does not represent a constraint on competitiveness* - *Timely realization of investment plan of TSO, in particular capital investments* - *Accelerated integration of variable RES into the power system, and increased availability to balance their production*	
Measures to be implemented	*Through approval of legal framework, regulatory rules and technical and energy efficiency codes.* *Approval of the 10 year investment plan and masterplan of TSO.* *Implementation of the 400 kV Interconnection line Elbasan (Albania) – Bitola (Republic of North Macedonia).* *Implementation of 400 kV interconnection line Albania (Fieri) – Greece (Arachtos)* *Reconfiguration of 400 kV grid and new 400 kV interconnection Albania-Kosovo* *Closing the 400 kV Albanian internal ring* *Implementation of investment in the Transmission Grid.*	*2017 on*

Budget (source of budgeting)	*N/A*
Implem. Entity (Monitoring Entity)	*Transmission System Operator; ERE; Ministry of Infrastructure and Energy*
Relation with other dimensions (if any)	*Energy Security; Decarbonization*

Energy Dimension	*4. Energy Market*
Sector	*Electricity Infrastructure*
Modelling Scenario Considered	*WEM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Electricity Sector Reform (EM-I2)*
Timeframe	*2018 - ongoing*
Legal basis and planning documents	*Law No. 43/2015 of 30.4.2015 "On power sector", amended* *Law No. 24/2023 "For promoting the use of energy from renewable sources"* *CoM Decision no. 480, dated 31.07.2018, "On the approval of the National Energy Strategy 2018–2030"* *CoM Decision no. 519, dated 13.07.2016, "On the approval of the Electricity Market Model" (as amended)* *CoM Decision no. 449, dated 15.06.2016, "On the approval of the Terms and Procedures for Designation of the Electricity Supplier of Last Resort"* *CoM Decision no. 456, dated 29.06.2022, "On the approval of Conditions for Establishing Public Service Obligation Imposed on Licensees in the Electricity Sector Carrying Out the Activity of Production, Transmission, Distribution, and Supply of Electricity"* *ERE Board Decision no. 347, dated 27.12.2022, "On the approval of the Electricity Market Rules"* *ERE Board Decision no. 106, dated 02.07.2020, "On the approval of the Electricity Balancing Market Rules" (as amended)* *ERE Board Decision no. 126, dated 17.05.2021, "On the approval of the Regulation on Wholesale Energy Market Integrity and Transparency"* *ERE Board Decision no. 40, dated 06.03.2020, "On the approval of the Regulation for the Requirements and Procedures for Designation of the Nominated Electricity Market Operator (NEMO) and the Roles and Responsibilities of NEMO and of the Transmission System Operator in the Energy Market Coupling"* *ERE Board Decision no. 118, dated 27.07.2017, "On the approval of the Rules on Publication of the General Data of the Electricity Market"* *ERE Board Decision no. 154, dated 11.12.2015, "On the approval of the Rules on Certification of the Electricity Transmission System Operator"* *ERE Board Decision no. 113, dated 08.07.2016, "On approval of the Regulation on Electricity Supplier Switching" (as amended)*
Actions taken to date	*Albania has already fully transposed electricity market rules stemming from the EU Third Energy Package and has reached a good progress in their practical implementation through legislative developments, sectoral reforms, and gradual opening of the electricity market.* *Transmission and distribution system operators are fully unbundled and act independently from any market interests in electricity production and/or supply.* *Competitive balancing and ancillary services market is already in operation as organised by the transmission system operator OST sh.a pursuant to ERE's adopted market rules. Extending the scale of market-based electricity trading is expected to increase the so far limited liquidity thereof.* *All electricity consumers in Albania are elgibile to choose and switch their supplier.* *The power exchange ALPEX was established by the transmission system operators of Albania OST and Kosovo KOSTT to become the day-ahead and intraday market operator for Albania and Kosovo. The day-ahead market was launched on 12 April 2023. On 1 February*

	2024, the Albanian Power Exchange (ALPEX) held its first day - ahead auction for electricity delivery in Kosovo. The competitive balancing and ancillary services market is established, but still operates with limited liquidity. *With the approval of the law No. 24/2023, dated 14.04.2023, "For promoting the use of energy from renewable sources", support for renewable energy electricity generation is now provided only through a competitive process in the form of contract for support in accordance with the provisions of this law.* *Albania is working for transposition and implementation of the new electricity market design elaborated under the EU Clean Energy Package and electricity network codes, where the main document is the revision of the Power Sector Law 43/2015.*
Main Objective of PaM	*Align with electricity integration package to enable electricity market coupling of the EU and Albania, establish the intraday electricity market, operationalise the package in line with the market coupling operator integration plan. Approximations of the Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity* *The objective of this PAM is to create an electricity market that is organized according to the EU model, and led by the principles of transparency, non-discrimination and sustainability in the long term, based also on the formation of a competitive and free energy price formation.*
Results to be achieved	- *Adopt legal amendments to align with the electricity integration package in line with the Energy Community requirements and start implementation.* - *Continue implementation of the electricity integration package by making operational the intra-day electricity market, in line with Energy Community requirements.Continue implementation of the electricity integration package by the Transmission System Operator (TSO) and the Nominated Electricity Market Operator (NEMO) by taking the necessary national actions to join day ahead market coupling with the EU in line with Energy Community requirements (December 2025).*
Measures to be implemented	*Through technical assistance from different sources, legal and regulatory changes will be approved and implemented to implement the reform and achieve the results.* — *by 2025*
Budget (source of budgeting)	*The following information can be used for orientation: Technical assistance project carried out to support Albanian authorities developing a modern regulatory framework in the energy sector, with a specific focus on electricity; started 15/10/2020, duration 24 months, budget 1 Meur (https://expertisefrance.fr/en/fiche-projet?id=869338)*
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy, OST, ERE, OSHEE, KESH* *EBRD, KfW and AFD (for technical assistance)*
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy; Energy Security* *Relation with the following PaM:* *EM-I3 Establish RES operator and transform Feed-in-Tariffs*

Energy Dimension	*4. Energy Market*
Sector	*Electricity Infrastructure*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Establish RES operator and transform Feed-in-Tariffs (EM-I3)*
Timeframe	*2021 - ongoing*
Legal basis and planning documents	*Law No. 43/2015 of 30.4.2015 "On the electric energy sector", amended; Law No. 24/2023 "On promoting the use of energy from renewable sources"; DCM No. 742 of 12.12.2018 "On the approval of the strategic plan for the reform of the energy sector in Albania"; Order of the Minister of Infrastructure and Energy No. 27 of 18.01.2021 "For the approval of the strategy of transformation of Feed-In tariff support to Contract for Difference"*

Actions taken to date	- *Approval of the Order of the Minister of Infrastructure and Energy No. 27 of 18.01.2021 "For the approval of the strategy of transformation of Feed-In tariff support to Contract for Difference"* - *Decision of Council of Ministers No 198 of 3.03.2021 "On determining the operator that carries the functions of the renewable energy operator" was approved. According to this Decision, the Renewable Energy Operator (REO) will act as another body for the Contracts for Difference (CfD) for all priority producers of electricity from renewable sources and producers benefiting from feed in support tariff (FIT).* - *Creation of ALPEX* - *Technical assistance project carried out to support Albanian authorities developing a modern regulatory framework in the energy sector, with a specific focus on electricity; started 15/10/2020, duration 24 months, budget 1 Meur: https://expertisefrance.fr/en/fiche-projet?id=869338*
Main Objective of PaM	- *To achieve a more transparent support scheme for RES producers* - *Increase ALPEX liquidity* - *Reduce the FiT scheme impact on the actual purchaser of the electricity (OSHEE, FTL)*
Results to be achieved	- *Establishment of REO, the structure, hire staff, set up technical capacities* - *Implement the strategy of switching from FiT to CfD* - *Calculate RES obligation for the first 3 years of the functioning of the REO* - *Approving a model of operation, trading strategy for REO*
Measures to be implemented	*Through technical assistance from different sources, legal and regulatory changes will be approved and implemented to implement the reform and achieve the results.* — *2021 on*
Budget (source of budgeting)	*Policy-Based Loan to support the reform of the electricity sector in Albania, started 12/11/2021, 51.4 MEur, duration 12 years: https://www.afd.fr/en/carte-des-projets/policy-based-loan-support-reform-electricity-sector-albania*
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; KfW and AFD (for technical assistance)*
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy* *Relation with the following PaM:* *EM-I2 Electricity Sector Reform*

3.4.3 Energy Poverty

Energy Dimension	*4. Energy Market*
Sector	*Electricity Infrastructure*
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Eradicate energy poverty (EM-P1)*
Timeframe	*2021 - 2035*
Legal basis and planning documents	*Law No. 43/2015 of 30.4.2015 "On the electric energy sector", amended; Law No. 116/2016 of 10.11.2016 "On energy performance of buildings"*
Actions taken to date	- *A compensation scheme for electricity consumers is in place since 2006 in the form of cash benefit of 640 ALL (EUR 5,2) for those recognised as consumers in need who reach a monthly threshold of 200 kWh (in force).* - *In 2015 it is approved an additional subsidized cash benefit of 648 ALL (EUR 5,23) per month to protect temporarily vulnerable households which consume up to 300 kWh per month.* - *ERE Decision No. 246, date 11.12.2018 on approving "Regulation on specific conditions for termination of supply with electricity for the customers in need". Based on this regulation, the Distribution System Operator and Universal Service Provider create and maintain a register with the data of the clients in need.*

Main Objective of PaM	*The objective is to adapt the definition of energy poverty according to the findings of the EnCS study published in December 2021, to establish a national system for systematically monitoring it and to implement measures to eradicate energy poverty by 2035.*	
Results to be achieved	*Develop methodology to define energy poor groups and monitoring tools, as well as energy efficiency measures targeting energy vulnerable households by approving the action plan for addressing energy poverty by 2026*	
Measures to be implemented	*Short-term measures:* - *Update the legal framework the compensation scheme based on the requirements of the law No.43/2015 "On the electric energy sector", as amended, for the clients in need.* - *To adapt the definition of energy poverty according to the results of the EnCS study December 2021 and to define measurable indicators that allow for the tracking of progress.* *Medium-term measures:* - *Develop methodology to define energy poor groups and monitoring tools, as well as energy efficiency measures targeting energy vulnerable households, by approving the action plan for addressing energy poverty.* - *To develop an action plan based on EU countries experience how to achieve improvements in terms of reducing energy poverty, including annual targets and measures such as: grants for renovating the worst buildings, grants for exchanging old refrigerators, etc.* - *To establish a national system for systematically planning and monitoring and implementing measures for eradicating energy poverty.*	*by 2026* *by 2028*
Budget (source of budgeting)	*Total cash benefit for both measures applied (compensation scheme and subsidized cash benefit) is 1,288 ALL (EUR 10.4) per month. This measure provided support for 213,000 households with a cost for state budget at 1.76 billion ALL (14.22 MEur) a year as of 2019/2020. Numbers serve as orientation for annual budget needs.*	
Implem. Entity (Monitoring Entity)	*Ministry of Infrastructure and Energy; Ministry of Health and Social Protection, Ministry of Finance, local government units* *(Ministry of Infrastructure and Energy)*	
Relation with other dimensions (if any)	*Decarbonisation/Renewable Energy; Energy Efficiency; Research, Innovation & Competitiveness* *EE-L6 Financial support schemes for improving energy efficiency in buildings (private sector)* *EE-L2: Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024*	

3.5 Research, Innovation and Competitiveness

3.5.1 Overarching legal framework

The main legal acts (including strategies and plans) related to this dimension are listed below:

1. **Law No. 80/2015 of 22.7.2015 "On the Higher Education and Scientific Research in the Higher Education Institutions in the Republic of Albania"**
2. **DCM No. 710 of 1.12.2017 "on the Approval of National Strategy for Science, Technology and Innovation (NSSTI) for the period 2017–2022"**
3. **DCM No. 607 of 31.08.2016, "On establishment, structure, organization and performing of the National Agency of Scientific Research and Innovation" (NASRI)**

In the Tables below are the Policies and Measures divided by the sectors they are related to.

3.5.2 Research

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Regulatory; Informational; Educational; Financial*	
Title of PaM (Coding)	*Improvement of the regional and international collaboration in the scientific research related to the energy sector* *(RIC-E1)*	
Timeframe	*2018 - ongoing*	
Legal basis and planning documents	*DCM No. 710 of 1.12.2017 "on the Approval of National Strategy for Science, Technology and Innovation (NSSTI) for the period 2017–2022"; Law No. 80/2015 of 22.7.2015 "On the Higher Education and Scientific Research in the Higher Education Institutions in the Republic of Albania"* *The new "National Strategy for Science, Technology and Innovation 2023-2030 has been adopted by the government in 2023.*	
Actions taken to date	*Report available on the impact assessment of NSSTI 2017-2022; see also ERA assessment https://www.westernbalkans-infohub.eu/wp-content/uploads/2024/05/ERA-Country-Report-2023-Albania_FINAL.pdf*	
Main Objective of PaM	• *Improvement of the cooperation at Regional, European and global level in the energy sector.* • *To participate in the SET Plan* • *To involve all government entities (ministries and other authorities) active in industrial policy in Albania in the actions related to research and innovation and the SET Plan.* *Among others, participation of Albanian researchers and innovators in the SET plan will increase their chances in European programs addressing research organisations and SME: The ETIPs and fora constitute the 'industry/innovation' community of the SET-Plan, while the European Energy Research Alliance (EERA) represents the 'research' community.*	
Results to be achieved	- *Increase the number of bilateral and multilateral scientific cooperation agreements (e.g. EERA participation and ETIP participation)* - *20% increase (compared to 2018) of the financing for the regional and international collaboration projects* - *Establishment of a Coordination Committee for Horizon Europe, Erasmus plus, EISMEA programs* - *20% Increase in the winning projects of these initiatives by 2027* - *Implementation of activities related to Open Science: publication of all publicly funded national research projects (free access to projects results)*	
Measures to be implemented	*Financial support for the initiatives:* - *Grants for research and innovation actors to participate in Forums such as EERA and ETIP* - *Grants to research and innovation actors for project preparation / proposal submission* - *Financing the enabling environment (database, meetings, trainings, etc.)* - *Improvement of the legislative framework related to business climate* - *Facilitating the creation of a start-up company from a university spin-off* - *Promoting the innovation and scientific research at national and regional level* - *Publication of opportunities, good examples and success stories on Social Media and relevant Websites and Portals*	*Annual*
Budget (source of budgeting)	*Budget forecast is approx. 8.24 MEur*	

Implem. Entity (Monitoring Entity)	*Ministry of Education, Sports and Youth; National Agency for Scientific Research and Innovation*
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency* *The planned budget is additional to the budget of RIC-E2.*

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered	*WEM*	
Type of Instrument	*Financial*	
Title of PaM (Coding)	*National program of R&D (RIC-E2)*	
Timeframe	*2017 ongoing*	
Legal basis and planning documents	*DCM No. 607 of 31.08.2016, "On establishment, structure, organization and performing of the National Agency of Scientific Research and Innovation" (NASRI)*	
Actions taken to date	*Compared with 2018 the yearly budget of 2020 is increased with 60%.*	
Main Objective of PaM	*Increase year by year the public expenditures for scientific research delivered to Higher Education Institutions.* *This PaM addresses (1) the shortages in budget, staff and working conditions and (2) the need for strengthening research and innovation actions in 6 priority areas including Agriculture, Environment, Water and Energy, IT.*	
Results to be achieved	*The final goal is that annual expenditures for scientific research and innovation reach 2% of GDP by 2022 and after.*	
Measures to be implemented	- *Financial support for dedicated research and innovation initiatives related with energy and climate:* ○ *Applied research (TRL 6-7)* ○ *Demonstration projects (TRL 8-9)* ○ *Market introduction activities* ○ *Awareness creation campaigns Business to Business and Business to Consumer*	*Annual*
Budget (source of budgeting)	*Annual budget should be 2% of GDP.*	
Implem. Entity (Monitoring Entity)	*National Agency for Scientific Research and Innovation; Universities;* *Ministry of Finance; Ministry of Education, Sports and Youth*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency*	

3.5.3 Innovation and Competitiveness

Energy Dimension	*5. Research, Innovation and Competitiveness*
Sector	
Modelling Scenario Considered	*WAM*
Type of Instrument	*Regulatory*
Title of PaM (Coding)	*Business Investment Development Strategy (BIDS) (RIC-E3)*
Timeframe	*2021 - 2027*
Legal basis and planning documents	*National Strategy on Development and Integration, Pillar 2: Economic growth through the increased competitiveness and innovation.* *In process of drafting the templates according to IPSIS formats.*
Actions taken to date	*The Ministry of Finance and Economy designed the new Business and Investment Development Strategy (BIDS) and Action Plan 2021 –2027 with the support of GIZ and*

	presented it 2021 (https://www.investment.com.al/wp-content/uploads/2021/07/EN_Draft-BIDS-Presentation.pdf). The policy was officially adopted on 30.07.2021. It envisages periodic 6-month and 1-year reports by the Ministry of Finance as well as an interim evaluation in the fourth year (https://www.clustercollaboration.eu/sites/default/files/2023-04/ECCPfactsheet_Albania_2022.pdf).	
Main Objective of PaM	*A competitive, more innovation-driven and knowledge-based Albanian economy that creates new and higher-quality jobs tapping the potentials of the digital transition and the transformation of international value chains and emphasising sustainable development, EU and regional integration.* *The BIDS addresses five main challenges: a) an incomplete institutional framework for SME policy; b) limited access to finance for SMEs; c) a skills mismatch in the labour market and low job creation; d) limited export activity by Albanian SMEs; and e) limited innovation activities and research and development expenditure. BIDS is supposed to:* - *outline the desired structural transformation and economic development trajectory;* - *be aligned to relevant development strategies and programmes at the national and international level;* - *form a central link unlocking potential at the interfaces within the strategic framework;* - *provide guidance for future regional/sectorial strategies initiating exemplary priority actions with a high impact that can be taken up by complementary measures.*	
Results to be achieved	- *Targeted training programs available by 2026* - *One-stop-shop for SMEs fully functional by 2026*	
Measures to be implemented	- *Complete the institutional framework for SME policy* - *Improve access to finance for SMEs* o *One-stop-shop for SMEs* - *Match the skills in the labour market and address low job creation* o *Needs assessment to identify focal aeras of intervention, such as building renovation* o *Development of curricula for all educational levels, including skilled and unskilled labour* o *Institutional anchoring of the training programs, including the necessary training infrastructure*	*by 2026* *by 2026* *by 2026*
Budget (source of budgeting)	*Responsibilities, time frames, funding needs and sources are outlined in the BIDS 2021-2027 document. (https://www.investment.com.al/wp-content/uploads/2021/07/EN_Draft-BIDS-Presentation.pdf)*	
Implem. Entity (Monitoring Entity)	*Ministry of Finance; Albanian Investment Development Agency*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency* *Relation with the following PaMs:* *Improvement of innovation activities and research and development expenditure is addressed by RIC-E1 and RIC-E2.*	

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Financial*	
Title of PaM (Coding)	*Demonstrating Innovation and Competitiveness (RIC-E4)*	
Timeframe	*2021-2030*	
Legal basis and planning documents	*Smart specialisation Strategy Albania (policy concept for priority-setting where a region can benefit from specialising in a particular area of science and technology)*	
Actions taken to date	*A Smart Specialisation Strategy was initiated supported by Fraunhofer ISI. Priority areas identified for Albania which are relevant for the NECP: Water & energy, Agriculture, food & biotechnology, Biodiversity & Environment, ICT.*	
Main Objective of PaM	*Overall objective: To achieve growth and employment by enabling Albanian regions to identify and develop their specific competitive advantages in the areas of Water & energy, Agriculture, food & biotechnology, Biodiversity & Environment, ICT.* *Specific Objective: Demonstrate how local authorities, universities, businesses and civil society in a specific region work together to develop their specific competitive advantage in a priority area and the benefits this brings.*	

Results to be achieved	- *In a bottom-up approach, local authorities, universities, businesses and civil society work in partnership to implement long-term growth strategies.*
	  o *Needs assessment: Identification of the region and the focal topic for the intervention*
	  o *Feasibility study: ToR, Procurement, Implementation*
	  o *Implementation of Demonstration project*	

Measures to be implemented	- *Feasibility study for demonstration project available* - *Demonstration project including setting up the regional innovation and training infrastructure (shared workshops, test labs, maker spaces, etc.) carried out*	*by 2026* *by 2030*
Budget (source of budgeting)	*Feasibility study: cost estimation EUR 150 000; suggestion for donor funded project.* *Cost and financing of demonstration project to be determined by feasibility study.*	
Implem. Entity (Monitoring Entity)	*Ministry of Education, Sports and Youth, Ministry for Entrepreneurship, Ministry of Finance and Economy, Business Community* *(Ministry of Education, Sports and Youth; National Agency for Scientific Research and Innovation)*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency* *Relation with the following PaMs:* *RIC-E1 and RIC-E2 address targeted research as such, while RIC-E4 focuses on the collaboration of the actors of the value chain and the enabling environment.* *RIC-E3 addresses regulatory aspects with regard to the institutional framework, access to finance, and skills.*	

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Fiscal*	
Title of PaM (Coding)	*Supporting innovative SMEs by means of tax relief (RIC-E5)*	
Timeframe	*2025 ongoing*	
Legal basis and planning documents	*To be established*	
Actions taken to date	*No actions taken to date*	
Main Objective of PaM	*To support the establishment of innovative SMEs that take up research results that contribute to solving challenges in the thematic fields of the Energy Union*	
Results to be achieved	- *A growing number of innovative SMEs working in the thematic fields of the Energy Union* - *Solutions for technology-related challenges and the need to find new solutions in other sectors such as in electricity* - *A growing number of patents*	
Measures to be implemented	- *Establishment of legal basis, including definition of criteria regarding eligibility of companies* - *Setting up the process in practice including a monitoring scheme*	*by 2026* *by 2027*
Budget (source of budgeting)	*Tax relief for innovation-related investments; estimated at 0.5 MEur per year.*	
Implem. Entity (Monitoring Entity)	*Ministry of Education Sports and Youth, Ministry of Entrepreneurship and Business Climate, Ministry of Finance, Business Community*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency* *Relation with the following PaMs:* *RIC-E1 and RIC-E2 address targeted research as such, while RIC-E4 focuses on the collaboration of the actors of the value chain and the enabling environment.* *RIC-E3 addresses regulatory aspects with regard to the institutional framework, access to finance, and skills. RIC-E5 is a targeted fiscal measure for innovative SMEs that take up research results that contribute to solving challenges, particularly in the dimensions of decarbonisation and energy efficiency.*	

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered	*WAM*	
Type of Instrument	*Financial*	
Title of PaM (Coding)	*Formation of clusters to support innovation and competitiveness (RIC-E6)*	
Timeframe	*2025 - ongoing*	
Legal basis and planning documents	*To be established*	
Actions taken to date	*A Smart Specialisation Strategy was initiated supported by Fraunhofer ISI. Priority areas identified for Albania which are relevant for the NECP: Water & energy, Agriculture, food & biotechnology, Biodiversity & Environment, ICT.*	
Main Objective of PaM	- *To define a process for the identification of the need for a certain thematic cluster* - *Based on the needs assessment, to form thematic clusters of research organisations and innovative companies in the thematic fields of the Energy Union, to foster knowledge transfer by connecting players along the value chain (Austrian Example: https://www.ecoplus.at/interested-in/clusters-technopols/clusters-platforms-in-lower-austria/green-building-cluster-of-lower-austria/)* - *To form those clusters for a defined period of time (e.g. 5 years), based on a work programme, and equipped with a cluster manager* - *To evaluate the outcome, to be able to consider the results in the design of the successor clusters to be formed*	
Results to be achieved	- *A growing number of clusters* - *Solutions for technology-related challenges and the need to find new solutions in other sectors such as in electricity* - *A growing number of patents*	
Measures to be implemented	- *Establishment of the legal basis, including definition of processes, positions and roles, and financing* - *Setting up the process in practice including a monitoring scheme*	*by 2026* *by 2027*
Budget (source of budgeting)	*Capacity development to be financed by a Technical Assistance Program, approx. 0.2 Meur.*	
Implem. Entity (Monitoring Entity)	*Ministry of Education Sports and Youth, Ministry of Entrepreneurship and Business Climate, Business Community*	
Relation with other dimensions (if any)	*Decarbonisation; Energy Efficiency* *Relation with the following PaMs:* *RIC-E1 and RIC-E2 address targeted research as such, while RIC-E4 focuses on the collaboration of the actors of the value chain and the enabling environment.* *RIC-E6 addresses a specific aspect, namely the formation of clusters.*	

Energy Dimension	*5. Research, Innovation and Competitiveness*	
Sector		
Modelling Scenario Considered **Type of Instrument**	*WAM* *Financial*	
Title of PaM (Coding)	*Innovation and excellence in the public administration (RIC-E7)*	
Timeframe	*2025 - ongoing*	
Legal basis and planning documents	*DCM no. 620 date 1.11.2023 For the establishment, organization and functioning of the agency for innovation and excellence, as amended.* *DCM no 30. date 17.01.2024 For determining the area of responsibility for the ministry of economy, culture and innovation.*	
Actions taken to date	*The agency responsible for innovation and excellence has been established and is currently resourcing for the specialized staff to perform its responsibilities appointed by DCM. A department for innovation is established in the responsible ministry for innovation.*	
Main Objective of PaM	• *Foster a culture of innovation and excellence within central government institutions by creating a conducive environment for policy implementation, building capacity and establishing structures that support continuous improvement and innovation.*	
Results to be achieved	• *Development of action plan for policy implementation in the area of innovation and excellence* • *Involvement of innovation experts in the drafting of strategic documents, action plans and policies in all central government institutions* • *Establishment of innovation centres in the central government institutions.*	
Measures to be implemented	• *Perform a legal gap analysis to identify bottlenecks and promotion obstacles on innovation and excellence* • *Capacity building of newly employees of the agency for innovation and excellence* • *Drafting of the action plan for policy implementation in the area of innovation and excellence* • *Roadmap on establishment of innovation centres* • *Establishment of a working plan for daily tasks of the newly established agency highlighting, milestones for 5 years* • *Setting up the process in practice to follow and implement the action plan.*	*by 2026* *by 2027*
Budget (source of budgeting)	*Capacity development to be financed by a Technical Assistance Program, approx. 0.3 Meur.*	
Implem. Entity (Monitoring Entity)	*Ministry of Economy, Culture and Innovation, Agency for Innovation and Excellence*	
Relation with other dimensions (if any)		

SECTION B: ANALYTICAL BASIS

4 CURRENT SITUATION AND PROJECTIONS WITH EXISTING POLICIES AND MEASURES

4.1 Projected evolution of main exogenous factors influencing energy system and GHG emission developments

This chapter presents a projection of the evolution of the energy system of Albania under the existing policies and measures, also referred to as the With Existing Measures (WEM) scenario.

4.1.1 Macroeconomic forecasts (GDP and population growth)

The macroeconomic drivers underlying this analysis are based on the most up-to-date available projections. GDP projection is based on calculations of the International Monetary Fund (IMF 2021). This includes impacts of the COVID-19 pandemic on economic development starting in 2020 with a decrease of 3.3% in GDP. The recovery starts in 2021 with 4.85% of GDP growth, which then continues maintaining the same annual growth until 2050. Figure 19 shows the real GDP development (monetary value of 2015).

The population development is aligned with the official data of the Albanian statistics office INSTAT in the medium scenario (INSTAT 2021). Population will decrease slightly from 2.87 Million in 2018 to 2.76 Million in 2030 and 2.35 Million in 2050. Figure 20 shows the population development.

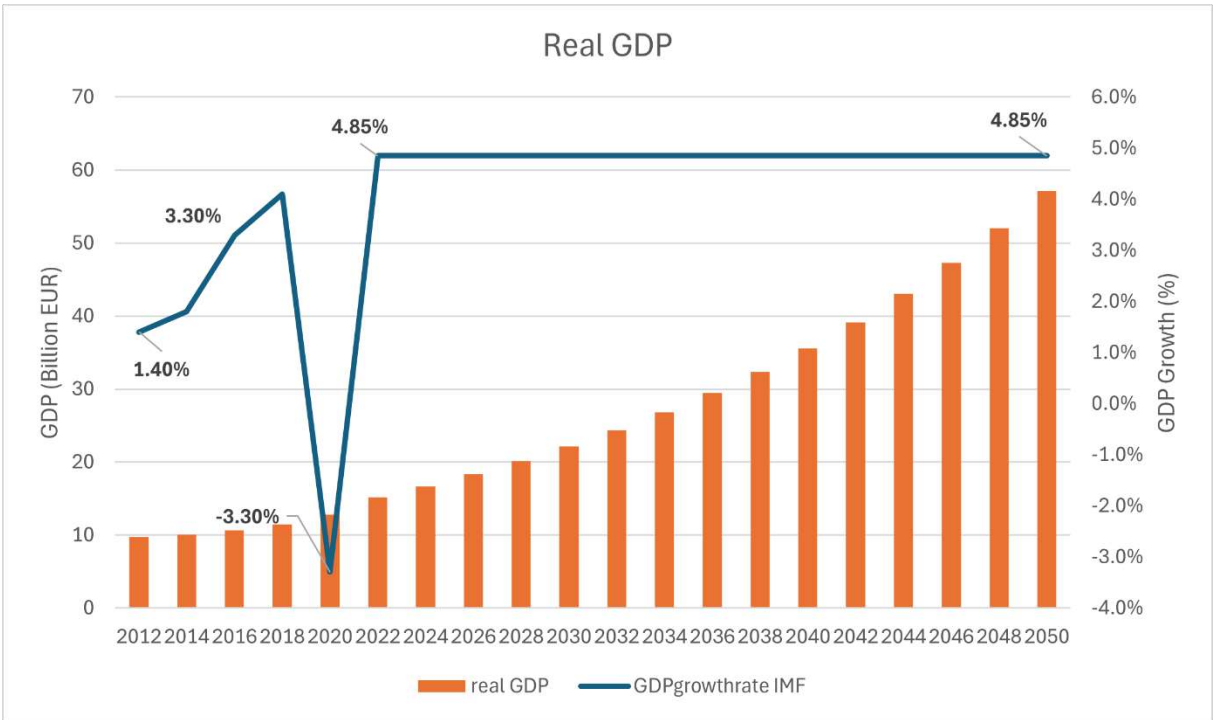

Figure 19: Real GDP development 2012 - 2050

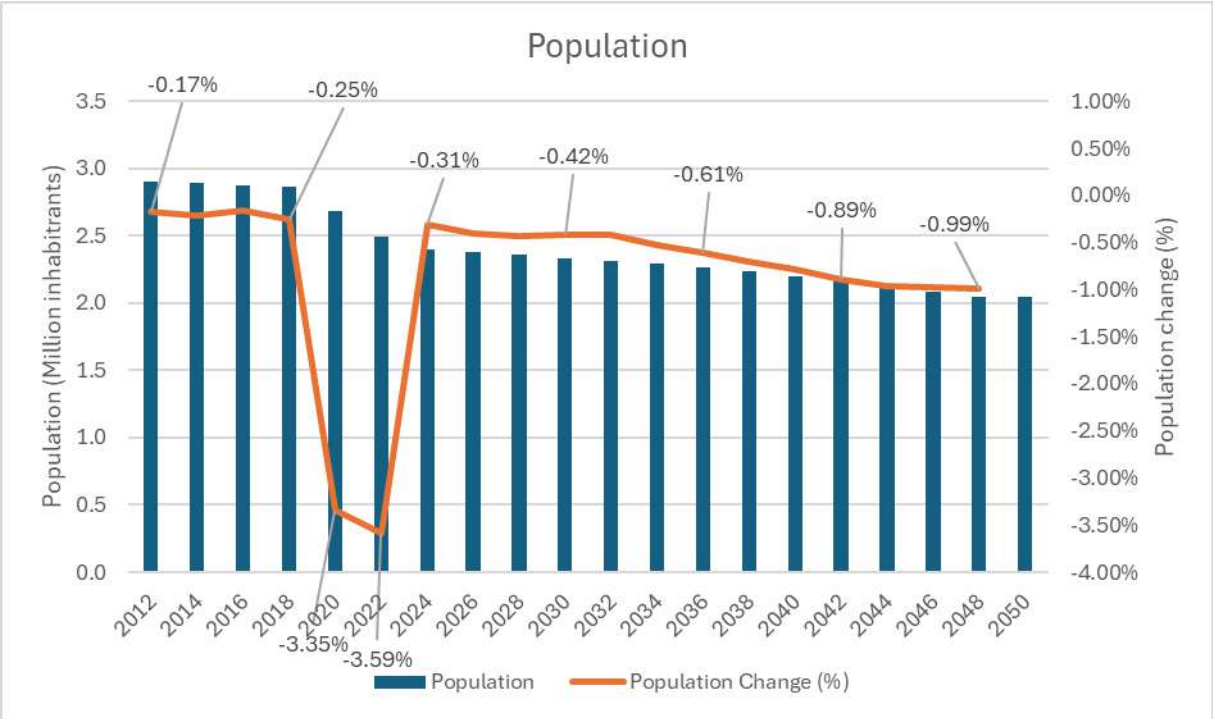

Figure 20: Population development 2012-2050

4.1.2 Sectoral changes expected to impact the energy system and GHG emissions

Apart from GDP and Population, the distribution of value added among energy demand sectors plays an important role in energy consumption. Figure 21 shows the share of the industrial, services and agricultural sector using historical data. The value-added shares between sectors are assumed to continue existing trends. The growth dynamic of the services sector is expected to continue increasing its relative value-added share.

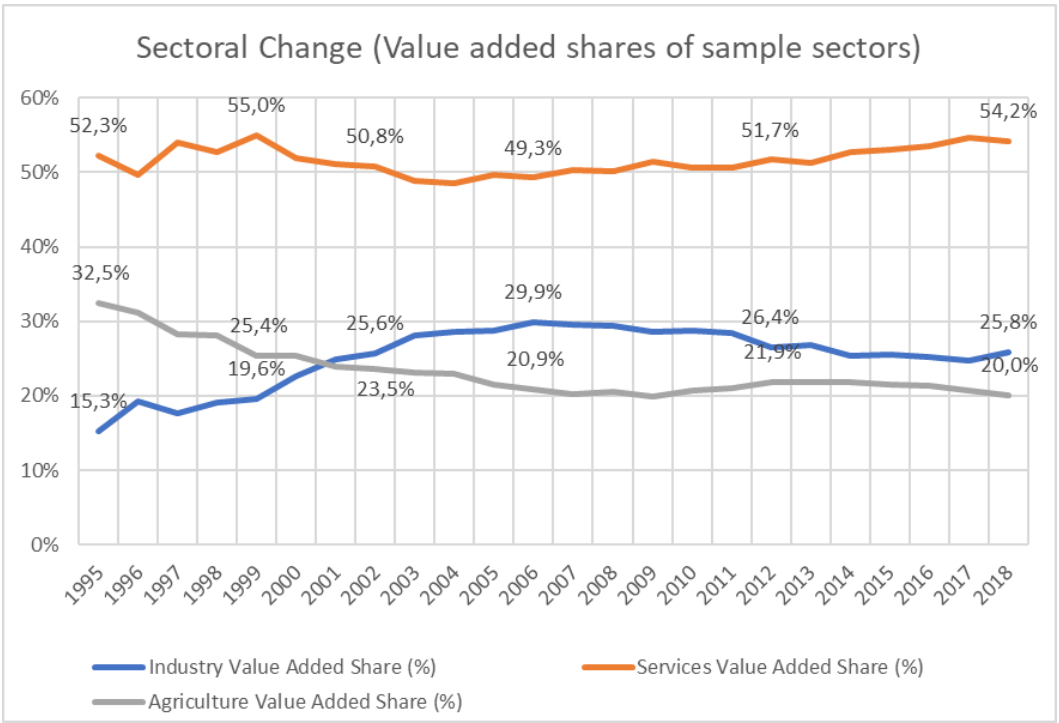

Figure 21: Value added share of energy demand sectors explicitly analysed in the model from 1995 to 2018

Apart from macroeconomic impacts, different structural changes affect energy consumption on sectoral level. The most important effects are presented subsequently ordered by sector.

Residential sector

The household size is decreasing from on average 3.9 persons per household in 2012 to 3.1 persons per household in 2030 and then decreasing further to 2.9 in 2040 and 2.6 by 2050. Figure 22 shows the development of building age classes starting from the Census of 2023 and extending the projection towards 2050. The reconstruction rate is high, leading to a share of 26% of floor area by 2050 that is built or refurbished after 2015. The strongest deconstruction is seen in buildings built between 1961 and 1990.

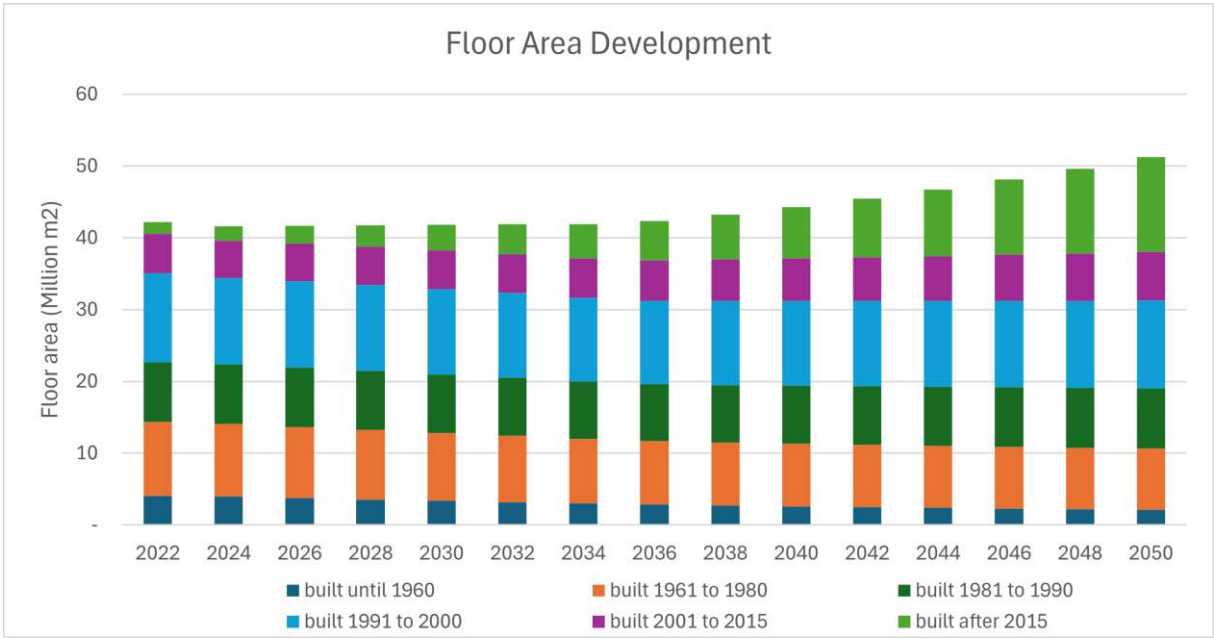

Figure 22: Floor area development by year of construction. Source: Census 2023, own representation

Notable as well is the change in distribution of floor area over different building types. Table 26 defines the building classes used in the analysis.

Building type	Number of dwellings per building
Detached houses	1
Semidetached houses	2
Row houses	3
Apartment buildings	>4

Table 26: Definition of building types

With the share of detached houses in terms of floor area decreasing from 51% in 2023 to 46.0% in 2050, semidetached houses and row houses see an increase in share, dropping from 9% to 7% and 5% to 4%, respectively. The strongest increase is seen in apartment buildings, rising from 35% in 2023 to 43% in 2050.

The impact of the change in housing composition decreases energy intensity due to lower energy consumption per floor area in apartment buildings than in smaller building types. Figure 23 shows the development of floor area by building type. Furthermore, newer and larger buildings tend to use a lower share of fuel wood for space heating and water heating, giving way for electric heating and increasingly heat pumps. A rebound effect depending on building type for higher usage of space heating due to the improved energy performance is expected. Equally, the prevalence of space cooling devices in households is expected to increase strongly from 45% in 2012 in climate Zones A and B to 71% in Zone A and 74% in Zone B in 2040. In Zone C, the prevalence is expected to increase from 15% in 2012 to 37% in 2040. This leads to an increase in energy consumption for space cooling that is not offset by the improved energy performance. The reconstruction rate of buildings therefore has the largest share in decreasing energy intensity and a changing fuel split in the residential sector. Wood usage in space heating decreases from 33.2% in 2012 to 26.7% in 2040 when not accounting for any policies and measures. In the same timeframe the use of electricity rises from 41.4% to 45.5%. The rest is covered by LPG.

Energy Intensity for space heating and space cooling is determined by heating degree days (HDD) and cooling degree days (CDD). Values are taken for three climate zones. Zone A being the coastal region with the mildest climate including the capital Tirana, Zone B the central area with intermediate climate and Zone C being the mountainous part of the country with the coolest climate.

Degree Days	Zone A	Zone B	Zone C
HDD (17.5°C)	<1300	1300-2010	>2300
CDD (18.5°C)	870	760	350

Table 27: Heating and Cooling degree days (HDD base temperature: 17.5°C, CDD base temperature 18.5°C)

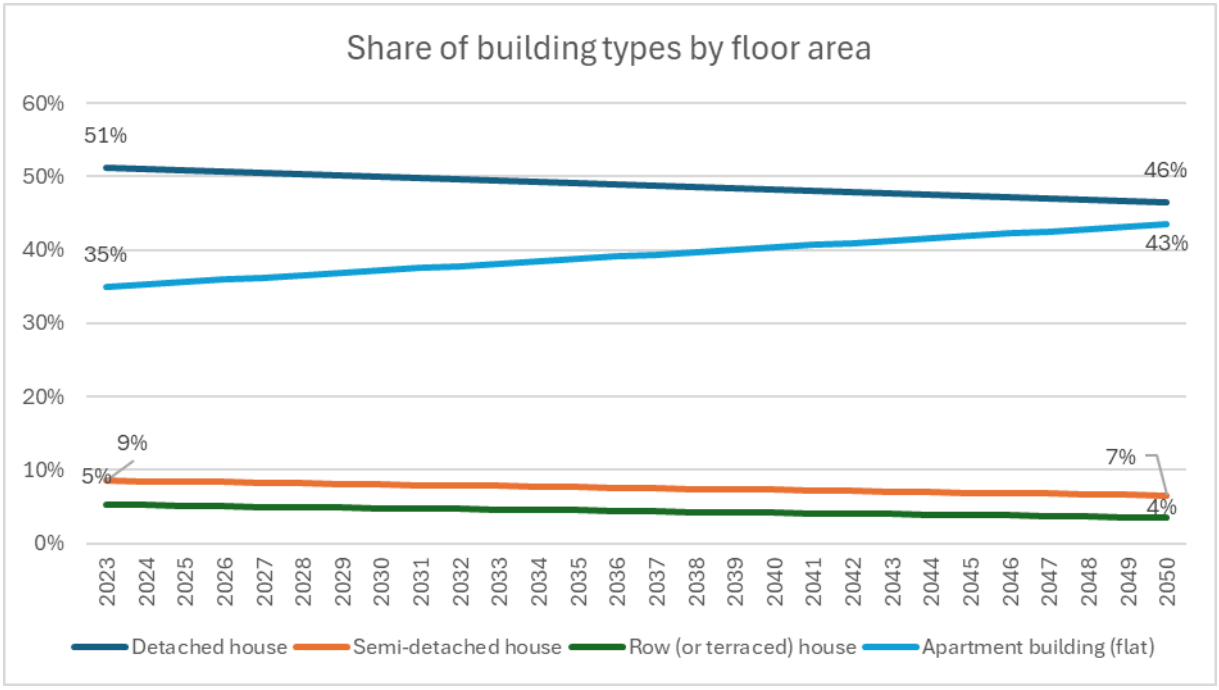

Figure 23: Share of building types by floor area. Source: SLED 2015, own representation

Services Sector

In the services sector, the most important driver is the strong growth performance in value added as was shown in the sectoral development of the economy in Figure 21. In 2040, the sector reaches a value added of 2.2 times that of the 2012-base value (in constant Euros). The strongest growth performance originates from the other services, increasing 4-fold between 2012 and 2040.

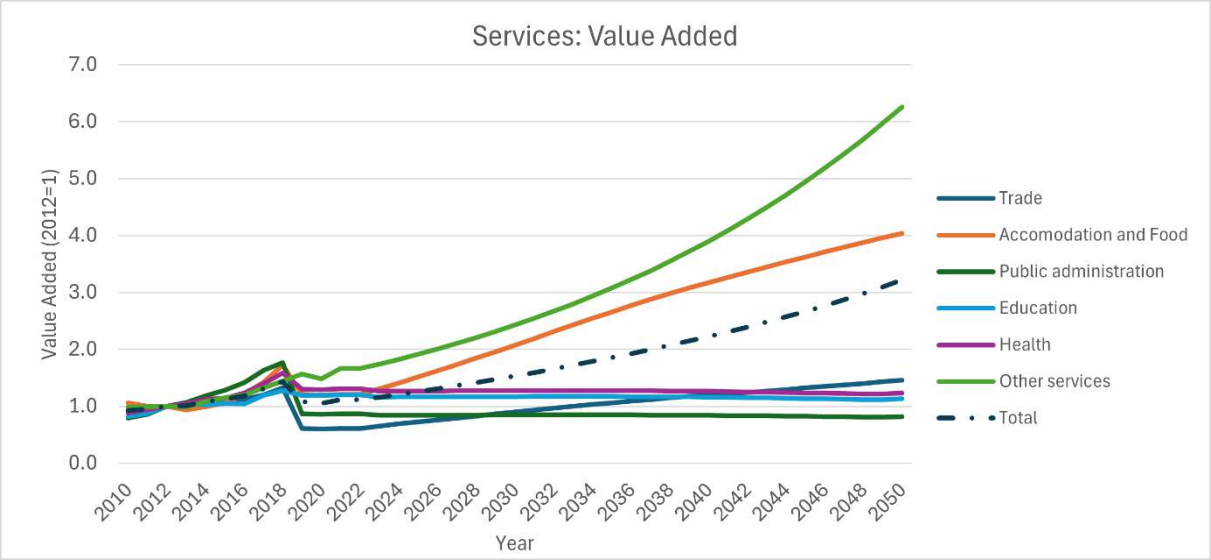

Figure 24: Value added of subsectors to the Services sector, normalized to the year 2012

Industry

In industry, the energy demand is determined by production volumes, which in turn are projected to increase with GDP growth. The value-added split between subsectors is projected to remain constant. The most important sector in terms of energy demand is the Minerals sector, which is dominated by cement production. There is also some production of ferro-chromium in the country and limited production of recycled aluminium and lead. Processing of food, drink and tobacco plays only a minor role in terms of energy consumption. The demand for energy increases in all sectors with production volumes, which grow according to GDP growth projections. This is in part compensated by an efficiency gain of 0.1% p.a.

Transport

The main driver of the transport sector is the demand for mobility, seen in a rising annual demand for person km, as given in Figure 25. This variable has seen a strong growth in the past and is projected to continue to grow with historic growth rate. Transport of freight is projected to undergo growth with GDP.

In addition to total demand for transport, the share between transport modes is an important factor to consider. Figure 26 presents the modal shares of passenger transport. The largest share of passenger transport happens by passenger cars, with motorcycles and navigation taking small shares. Shared and public transport is an important factor. Rail transport is negligible, so transport by busses is the only shared road transport mode. This has seen a decrease from 15.4% in 2015 to just below 11% in 2018. This share is projected to recover to 12% by 2030 and remain stable after. This still corresponds to an increase in total bus km even after 2030 due to the overall increase in transportation activity. Another important factor to regulate energy demand in passenger transport is the load of vehicles, but this is not projected to change with existing measures.

Freight transport is delivered by trucks and to a small share by rail and through navigation. Freight transport is projected to increase with GDP. The shares between these modes do not see a change until 2040.

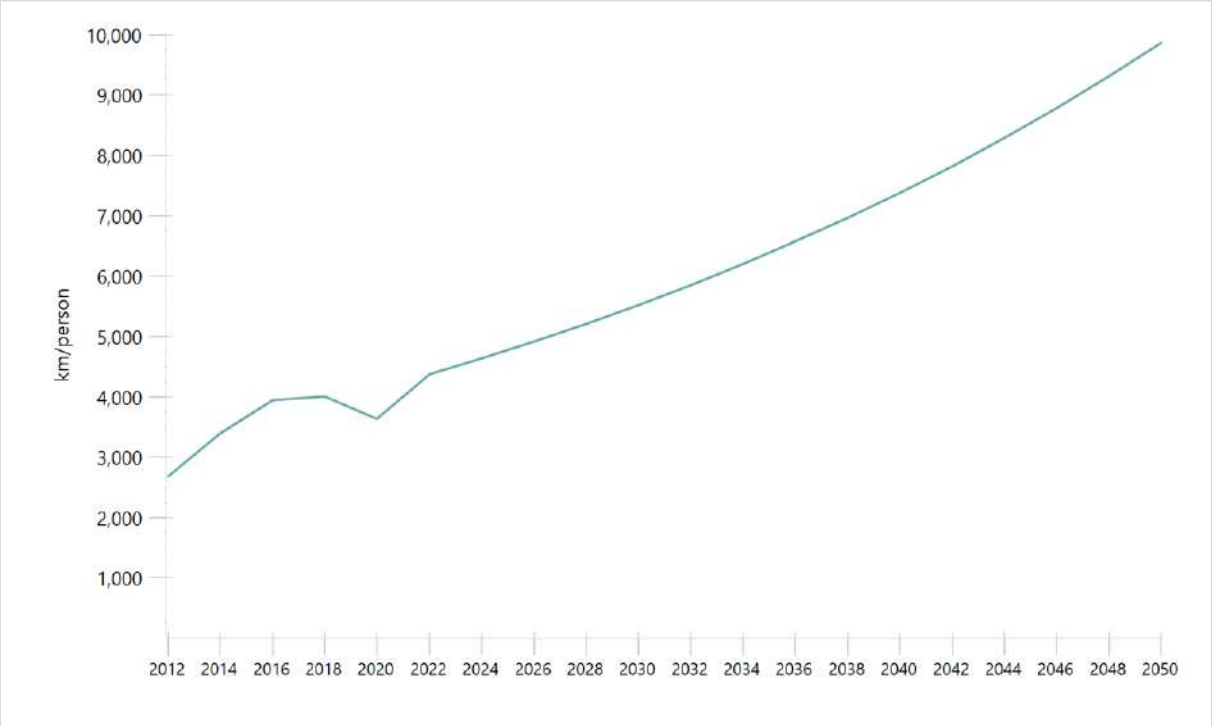

Figure 25: Annual demand for passenger transport in Albania, giving historic values and the future growth

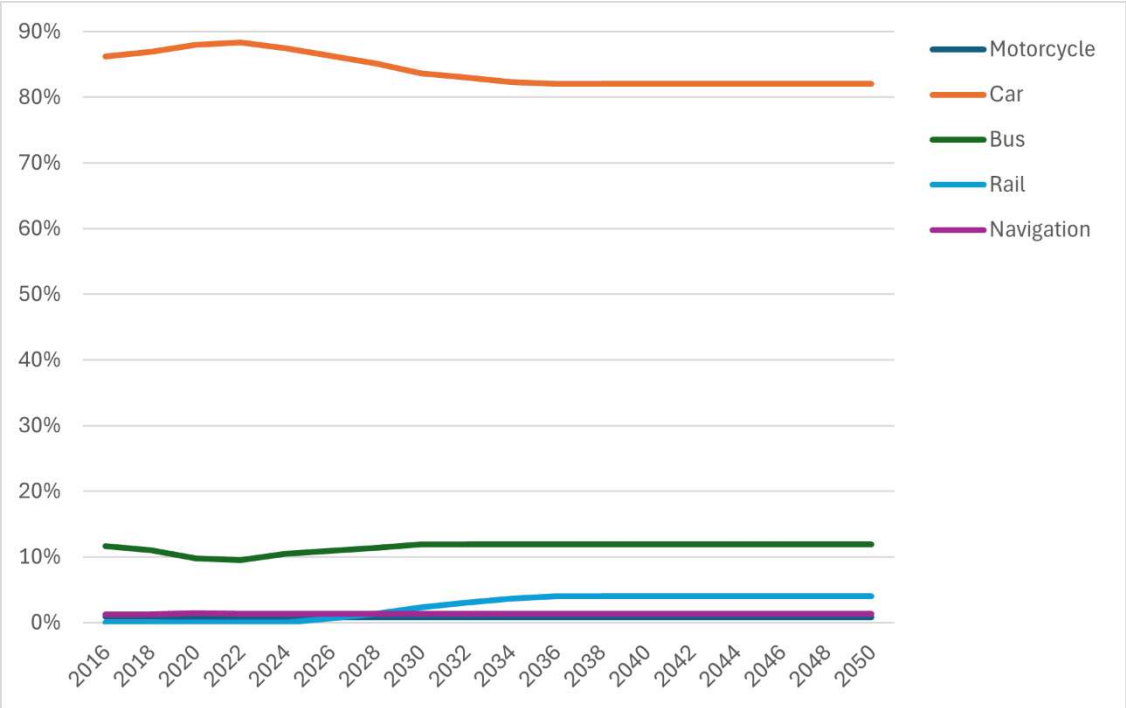

Figure 26: Shares of transport modes in passenger transport in Albania projected with existing measures until the year 2050

The energy demand in the transport sector is also determined by the technology used and respective fuels. As has been discussed above, passenger transport and notably by car is the main driver of energy demand. Figure 27 shows how new technologies are projected to penetrate the vehicle stock of passenger cars in Albania. A notable increase of electric vehicles is projected to start and continue towards 2050. As the vehicle market is dominated by used cars and the average age of cars is around 14 years, the penetration with novel technologies like electric vehicles limited even until 2050.

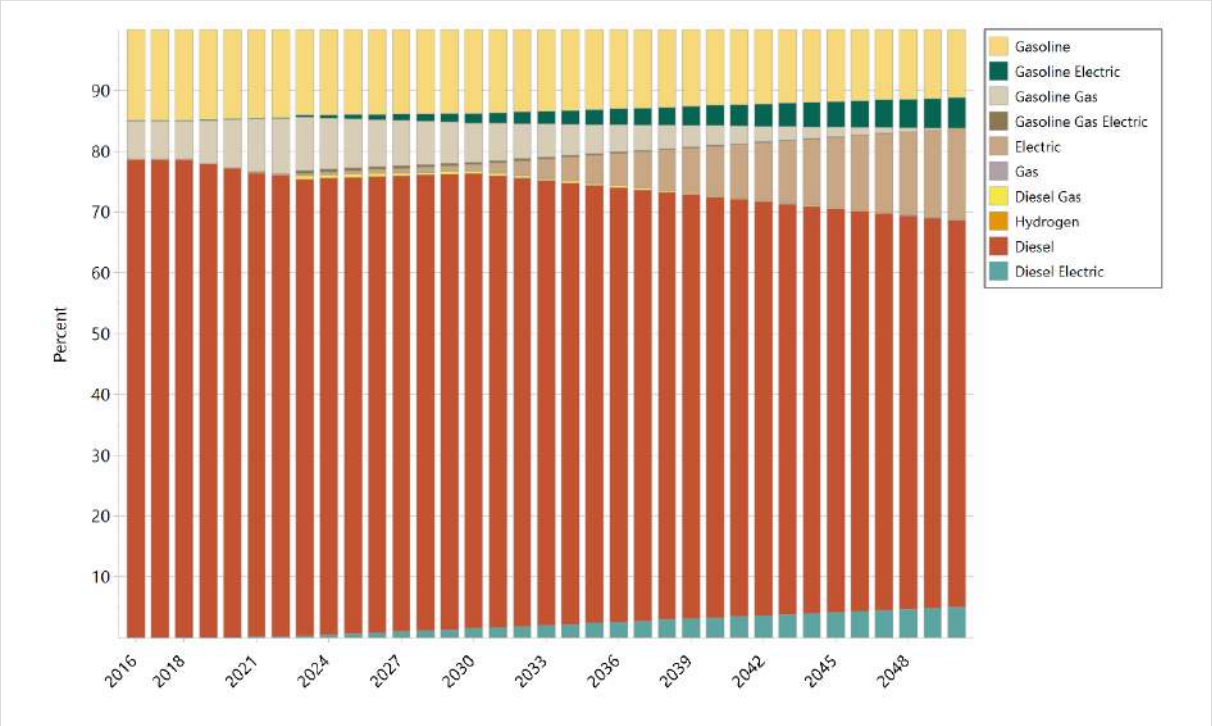

Figure 27: Technology shares in passenger transport by cars as given for historic vehicle statistics in 2016 to 2023 and as projected under consideration of existing measures until the year 2050

	2020	2021	2022	2023	2025	2030	2035	2040	2045	2050
Motorcycles										
Gasoline	16.0 %	15.9 %	15.9 %	15.8 %	15.6 %	15.1 %	14.2 %	13.2 %	12.2 %	11.2 %
Gasoline Electric	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	2.3%	3.2%	4.1%	5.0%
Gasoline Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gasoline Gas Electric	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electric	0.2%	0.4%	0.4%	0.4%	0.5%	1.0%	4.5%	8.0%	11.5 %	15.0 %
Gas	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	2.3%	3.2%	4.1%	5.0%
Diesel Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Diesel	83.8 %	83.7 %	83.6 %	83.2 %	82.2 %	79.6 %	74.4 %	69.2 %	64.0 %	58.8 %
Diesel Electric	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	2.3%	3.2%	4.1%	5.0%

	2020	2021	2022	2023	2025	2030	2035	2040	2045	2050
Cars										
Gasoline	14.7 %	14.5 %	14.5 %	14.0 %	13.8 %	13.3 %	12.6 %	11.9 %	11.2 %	10.5 %
Gasoline Electric	0.1%	0.2%	0.2%	0.7%	1.9%	5.0%	6.3%	7.5%	8.8%	10.0 %
Gasoline Gas	7.9%	8.7%	9.0%	8.7%	8.0%	6.4%	4.8%	3.2%	1.6%	0.0%
Gasoline Gas Electric	0.0%	0.0%	0.0%	0.5%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%
Electric	0.1%	0.1%	0.2%	0.3%	0.5%	1.0%	4.5%	8.0%	11.5 %	15.0 %
Gas	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Diesel Gas	0.0%	0.0%	0.0%	0.5%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Diesel	77.2 %	76.4 %	76.0 %	74.9 %	74.0 %	71.9 %	68.8 %	65.6 %	62.5 %	59.4 %
Diesel Electric	0.0%	0.0%	0.1%	0.2%	0.6%	1.5%	2.4%	3.2%	4.1%	5.0%
Buses										
Gasoline	16.0 %	15.9 %	15.9 %	15.7 %	15.4 %	14.6 %	11.3 %	8.0%	4.7%	1.4%
Gasoline Electric	0.0%	0.0%	0.0%	0.6%	1.9%	5.0%	11.3 %	17.5 %	23.8 %	30.0 %
Gasoline Gas	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Gasoline Gas Electric	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electric	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	11.1 %	20.7 %	30.4 %	40.0 %
Gas	0.1%	0.1%	0.1%	0.2%	0.2%	0.4%	0.5%	0.7%	0.8%	1.0%
Diesel Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	7.5%	11.3 %	15.0 %
Diesel	83.8 %	83.5 %	83.4 %	82.6 %	80.9 %	76.7 %	59.4 %	42.1 %	24.7 %	7.4%
Diesel Electric	0.0%	0.3%	0.4%	0.5%	0.9%	1.7%	2.5%	3.3%	4.2%	5.0%
Trucks										
Gasoline	15.8 %	15.7 %	15.7 %	15.4 %	15.0 %	14.0 %	12.6 %	11.1 %	9.7%	8.3%
Gasoline Electric	0.0%	0.0%	0.0%	0.5%	1.5%	4.0%	5.5%	7.0%	8.5%	10.0 %

	2020	2021	2022	2023	2025	2030	2035	2040	2045	2050
Gasoline Gas	1.5%	1.6%	1.7%	1.7%	1.8%	2.1%	2.3%	2.5%	2.8%	3.0%
Gasoline Gas Electric	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electric	0.0%	0.1%	0.1%	0.4%	1.2%	2.9%	4.7%	6.5%	8.2%	10.0 %
Gas	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	2.3%	3.2%	4.1%	5.0%
Diesel Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	3.8%	7.6%	11.3 %	15.0 %
Diesel	82.7 %	82.6 %	82.5 %	81.5 %	79.4 %	74.0 %	66.4 %	58.8 %	51.3 %	43.7 %
Diesel Electric	0.0%	0.0%	0.0%	0.2%	0.5%	1.4%	2.3%	3.2%	4.1%	5.0%

Table 28: Technology shares in passenger transport as given for historic vehicle statistics in 2020 to 2023 and as projected under consideration of existing measures until the year 2050

Other energy demand

Other energy demand sectors are distinguished as in the energy balance of Albania, splitting along the agriculture and fisheries sectors. Energy demand in the agricultural sector is driven by the production volume, which has been increasing over the past years and is seen to continue to increase (39% increase in 2030, 83% increase in 2040, relative to 2018). Fisheries production is driven by GDP growth (40% increase in 2030, 95% increase in 2040, relative to 2018). The efficiency gain is projected at 0.1% p.a. for fisheries and agriculture.

Non-energy use of energy carriers is associated with production in the chemical sector (growing with GDP, less than 1% of non-energy demand) and with the total demand for transport.

Energy transformation

The energy transformation sector includes oil extraction, refinery, electricity production and transmission and distribution.

Albania had proven oil reserves of about 220 million Barrels in 2018. It is extracted in one main site and refined by three refineries (in Fier with a refining capacity of 500kt, Elbasani with 250kt and Lushnja with 250kt) Due to the limited refining capacity, a large part of the crude oil is exported, and oil products are imported.

Electricity production is almost exclusively based on hydropower and is therefore renewable. Aspects of energy security play an increasing role with changing climate conditions and diminishing rainfall. Dry years with low hydroelectric output can currently not be compensated by other production technologies. Possible solutions are to increase electricity interconnections with neighbouring countries, in combination with the expansion of other renewable sources like solar or wind, that are subject to different temporal variations than hydropower. Solar PV sees an increase in power generation with existing measures. Further, considerations are made to refurbish the Vlora thermal power plant to be fuelled with natural gas. The Transadriatic Pipeline (TAP) entered into operation in late 2020 , bringing gas from Azerbaijan. Gas plants provide flexibility in energy generation but increase the GHG emissions of the electricity production sector. Relying on imported gas does not necessarily improve the situation of energy security.

Finally, while transmission network is rather solid and does not incur very high losses, distribution network incurs high losses, of almost 20%. These losses are projected to be reduced by existing measures in the coming years.

Industrial processes and product use

The largest share of IPPU emissions (10.9% of total emissions in 2018 in terms of CO2eq) stem from cement production (85.6% of IPPU emissions) and these will continue to rise as cement production continues to grow. This growth is projected to continue until the full production capacity of the cement plants. The production of ferro-chromium (growing with GDP) also leads to a small share of emissions (4.7% of IPPU emissions), as do the production of steel (1.8%) and lime (1.1%). The emission trends of refrigerating agents used in place of ozone depleting substances are projected to continue to rise until the year 2024 with historic trends (HFC 134a reaching 60 tonnes p.a., HFC 227ea reaching 15 tonnes p.a. as the by far dominant substances). After 2024, emissions of these substances see no further increase in line with the Kigali amendment of the Montreal protocol.

Agriculture

The development of non-energy emissions in the agricultural sector (28.4% of total emissions) is determined by the livestock population and agricultural practices. The population of all livestock species has been relatively constant over the past years, except for poultry and pigs. The number of the respective species is therefore seen to continue in this increasing trend. Manure management practices are not projected to change.

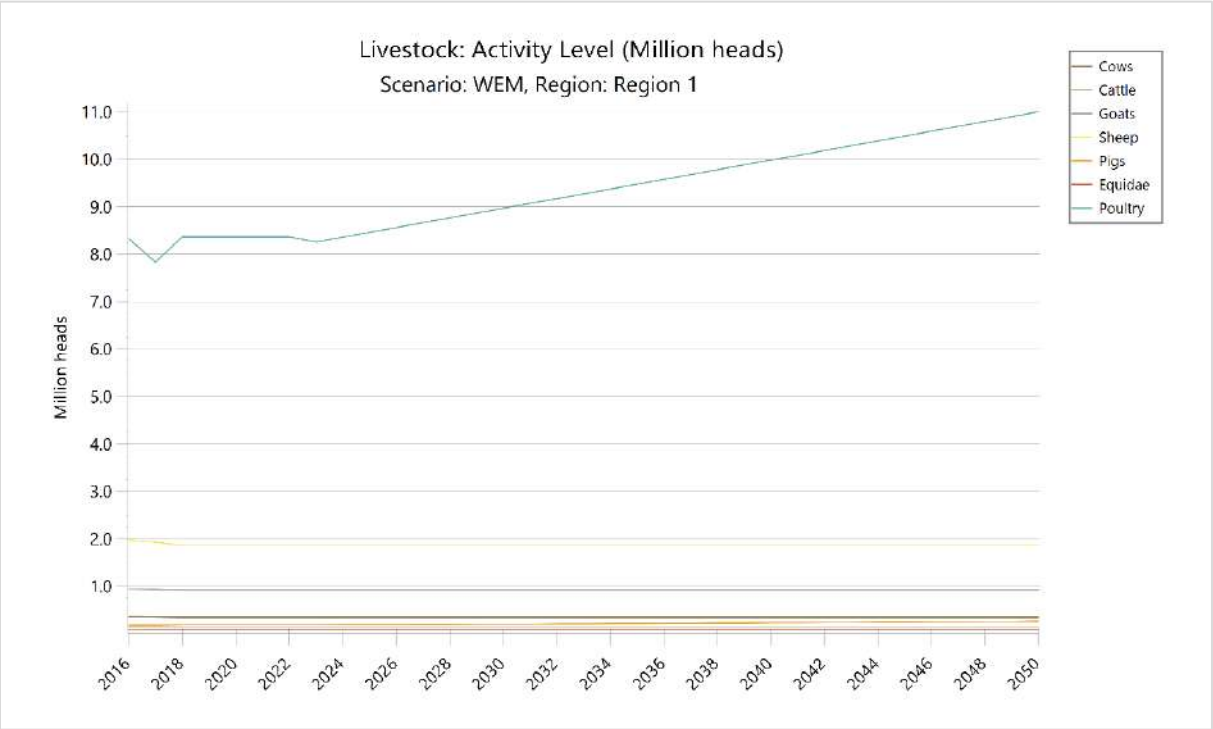

Figure 28: Livestock historically and until the year 2050

In addition to livestock, agricultural emissions stem from field management practices. The share of organic farming is projected to increase to 10% in 2030, from 1% in 2018, but a further increase is not projected to happen after 2030. The practice of residue burning is projected to stop by 2025. The application of urea will be cut in half by 2030, with no further decline afterwards.

LULUCF

Currently, the LULUCF sector is a source of emissions (12.1% of total emissions), as the natural sink capacity cannot compensate for emissions from forest management. This is not projected to change with existing measures. Forest fires are another source of emissions, which can become a dominant factor in the overall GHG balance. Improved forest management can also help to reduce the impact and spread of forest fires, however, an increase to median fire area (4.8kha) is still projected (increase of 50% until 2050), with no large fire episodes considered.

Waste

Emissions from the waste sector (10.8% of total emissions, considering solid waste and wastewater treatment) are projected to continue to increase.

The emissions of solid waste management are driven by the overall generation of waste per capita, which is projected to increase from 584 kg/cap in 2018 with an annual growth rate of 1.5% to close to 700 kg/cap in 2030 and 811 kg/cap in 2040. Waste management then determines the amount of emissions generated. Currently, solid waste remains largely unmanaged, disposed of in open, unmanaged dumpsites. By determined policies already adopted by way of the Integrated Waste Management Strategy, this practice is overturned until the year 2030. Full management of solid waste disposal is achieved by 2030. In addition, the share of waste going to landfills is reduced to 45% in 2030 and 24% in 2035 (from 81% in 2018), with an increasing share of recycling (increased from 14% in 2018 to 38% in 2030 and 46% in 2035) and an increase in combustion in waste incineration plants with energy recovery (2.2% in 2018, 4.4% in 2025, 17% in 2030 and 30% in 2035). There is currently a small share of uncontrolled incineration (1.8% in 2018); the practice is projected to be reduced in the coming years and ultimately stopped in 2035.

Wastewater is currently mainly untreated in Albania, but an existing policy set also considered in modelling aims to achieve a connection rate to wastewater treatment plants of 39% by 2027. The model projects full connection in 2050.

Policies reflected in the model

The following tables provides an overview of those policies listed as relevant for the WEM scenario. It shows how the policies have been reflected in the modelling activity underlying this document. Main effects have been described in the previous paragraphs.

Abbr	Name	Effect on variable
EE-E1	Energy audits for large energy consumers with focus on industrial activities	EE gain in industry for an additional 0.2% in 2023 to 0.4% in 2025
EE-P2	Municipalities Energy Efficiency Action Plans, implementation, and reporting	Not explicitly represented in the model (part of the public sector EE improvement measures in the model)
EE-T4	Increasing the share of public transport for passengers and freight (roads, railways and waterways)	Share of bus transport in person km increases (approx. 10% in 2018) by 25% in 2030 starting in 2019 (corresp. 12,5% in total share, which is the 2012 value). Share of rail passenger rail transport increases after 2024, reaching 2% in 2030. It remains diesel powered.

Abbr	Name	Effect on variable
EM-I1	Electricity interconnectors	Not modelled explicitly
EM-I2	Electric Energy Sector Reform	Not modelled explicitly
ES-O3	Linking Albania with the international gas network	Not modelled explicitly
ES-O4	Hydrocarbons exploration, production and processing	Reduction of NOx, SO_2 and dust emissions to the levels of the EU industrial emissions directive from 2025
ES-O5	Emergency plan for natural gas	Not modelled explicitly
ES-O6	Approval of Law "On the establishment, maintenance and management of the minimum reserves of crude oil security and its products"	Not modelled explicitly
ES-P1	Gas supply for Vlora Thermal Power Plant	The needed gas will be available through the expansion of the network.
ES-R1	Ionian Adriatic Pipeline & Albania Kosovo Gas Pipeline	Not modelled explicitly
G-A1	Promotion of organic agriculture	Increase the share in organic farming, which affects N2O emissions from managed soils. Increases organic farming share from 1% in 2012 to 4% in 2020, trend continues as PaM continues until 2030, reaching 8%. Urea application reduced by 50% between 2019 and 2030. Specific emissions of non-organic fields are reduced by 10% between 2019 and 2030 to reflect better fertilization.
G-A2	Improve the Agricultural Monitoring in Albania	Not modelled explicitly
G-A3	Regulating the Agricultural burning practices	The area of agricultural burning is reduced to 0 in 2025, starting in 2022.
G-B1	Policies to support RES in Heating and Cooling Sector	Solar thermal share in water heating increase by 12%-age points until 2030 and by 20%-age points by 2050. Heat pumps substituting 50% of electric space heating until 2050 lowering energy intensity of space heating.
G-I2	Establishment of a mechanism for implementation of MMR	Not modelled explicitly.
G-I4	Reduction of Fluorinated Gases (F-Gases) Emissions	Reduction by 10% in 2030 and 80% by 2045
G-T3	Efficiency-based car fees and incentives for fleet renewal	Not explicitly implemented. Autonomous WEM sees a considerable increase in hybrid cars.
G-W1	Emission reduction from waste	Recycling share increased to 40% in 2035 (14,6% in 2018), reducing the total going to landfills, retaining

Abbr	Name	Effect on variable
		composition. Closing all uncategorized and unmanaged landfills by 2035 (linear decline), replaced by managed landfills. Methane recovery is implemented starting in 2025, recovering 10% of CH4 emissions (1.34milltons CH4) from landfills in 2030
G-W2	Use of Waste Incineration Plants for the waste integrated management process in Albania	The share of waste going to incineration is doubled by 2025 from 2.2% today. Incineration reaches 30% in 2035, which corresponds to 55% of the sum going to landfills and incineration.
G-W3	Increase of Wastewater Treatment Plants and their related coverage	The objective of Wastewater Treatment Coverage from WWTP is as follows: Year Percentage 2021 14 2022 17 2023 20 2024 24 2025 28 2026 32 2027 39
G-W4	Waste and wastewater related capacity building and organisational development for municipalities	Not modelled explicitly. Assuming that the needed gas will be available through the expansion of the interconnections
R-E1	Mechanism of Feed-in-Tariff for small renewable capacity	40 MW HPP (run-of-river) added from 2021 each year until reaching 320 MW in 2028. 100 MW of additional PV would be added by 2030. No substantial increase for other technologies.
R-E2	Auctions for new renewable capacity (wind and solar) and storage; Approval of the 3 year auction plan	SPP Spitalla 100 MW from 2025, SPP Karavasta 140 MW operational, WPP Lezhë: 150MW connected in 2024 and additional 220MW of wind capacity added by 2030.
R-E4	Mechanism of net metering for installations up to 500 kW	The increase of renewable capacity, mostly PV, is not presented separately for this measure but the total capacity is supposed to be reflected in the R-E1.
R-E5	Robust power grid to accommodate increased renewable energy capacity, investment in renewable energy capacity in the free market	Gradual decrease of distribution losses from 23.7% in 2014 to 12% in 2030.
R-E6	Facilitate regulatory and physical connection to the electricity grid	Not modelled explicitly.
R-E8	Metering strategy and digitalization of the power sector	Not modelled explicitly.
RIC-E1	Improvement of the regional and international collaboration in the	Not modelled explicitly.

Abbr	Name	Effect on variable
	scientific research related to the energy sector	
RIC-E2	National program of R&D	Not modelled explicitly.

Table 29: The implementation in modelling of policies and measures listed in Chapter 3 as relevant to the scenario with existing measures

4.1.3 Global energy trends, international fossil fuel prices, EU ETS carbon price

Figure 29 displays the historic and projected trend of international price of (crude) oil.

EU ETS Carbon prices are not considered in the WEM scenario up to 2040. An introduction of carbon pricing is considered as part of an additional policy, the effect of which is described in Chapter 5. A carbon border adjustment mechanism is under development in the EU, but this is not modelled to affect the development.

Finally, the progression of climate change leads to changes in availability of renewable energy. With Albania producing almost 100% of electric energy from hydroelectric sources, related changes in the water cycle are of crucial impact. According to a study by the World Bank (World Bank ESMAP 2009), output from reservoir hydroelectric plants is expected to decrease by 15% until 2050. Run-of-river hydroelectric plants are expected to see a 20% drop in output. Photovoltaics output is expected to increase by 5% until 2050. To study the effect of years with low hydro availability, the modelling exercise underlying this document considers years with reduced hydro availability every five years (starting in 2022). In these years, the availability of hydro power plants is considered to be only 60% that of other years. The effects of this exercise are visible in some of the figures shown in the following chapters.

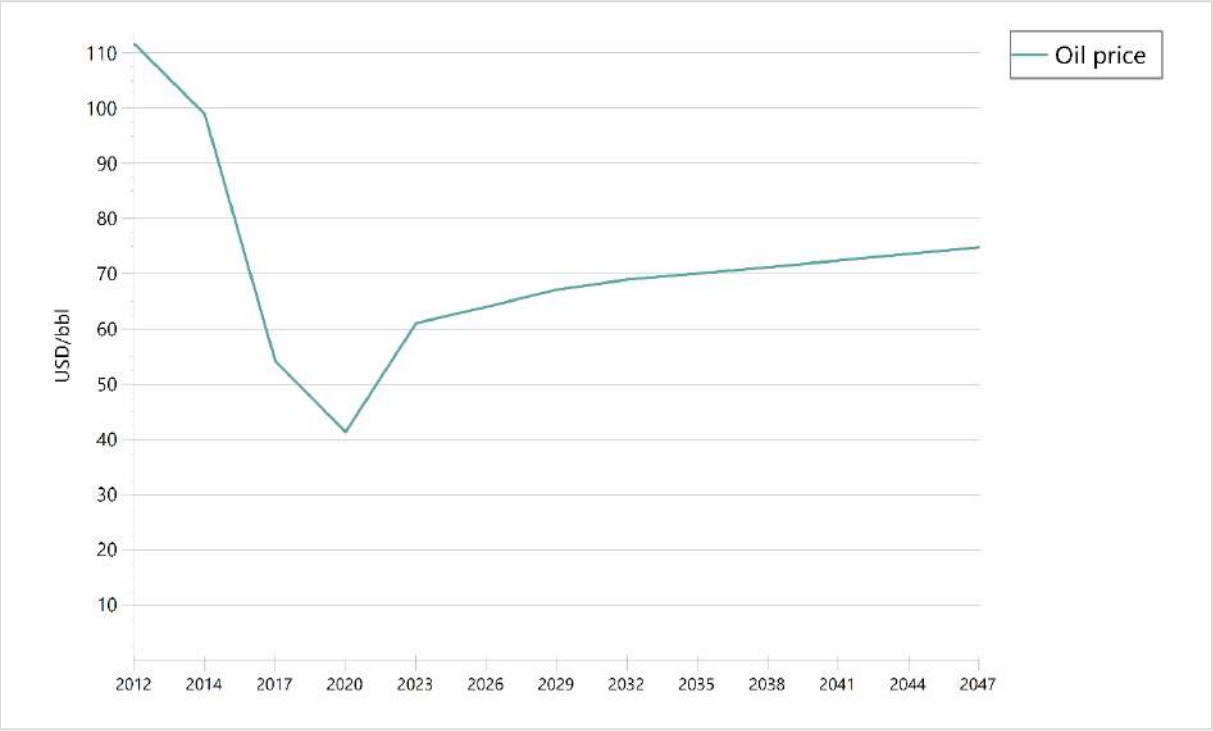

Figure 29: Oil Price (USD/bbl). Historical data Brent Source: Enerdata; Projection data world average. Source: World Bank 2021

4.1.4 Technology cost developments

In electricity production, the most important technologies used are reservoir hydro plants, followed by run-of-river hydro plants and, in a growing manner, photovoltaics. The thermal power plant Vlora was completed in 2011 but has never been operational. Originally powered by oil, a revitalisation of the plant using natural gas is planned with the completion of the Trans-Adriatic Pipeline (TAP) for natural gas.

Assumptions about electricity generation cost are given in Table 30. To obtain total electricity costs one should also add the capital costs of investments (generation, transmission, distribution). While conventional power generating technologies are not expected to see a decrease in investment costs, wind and solar power plants will continue to be subject to a substantial decrease in investment costs.

Electricity Production Technology	2019	2040
Hydroelectric Fixed O&M Cost (USD/MW_{el} per year)	60000	60000
Photovoltaic power Variable O&M Cost (USD/MWh_{el} Output)	10	10
Wind power Onshore Variable O&M Cost (USD/MWh_{el} Output)	15	15
Thermal power Oil Variable O&M Cost (USD/MWh_{el} Output)*	89	113
Thermal power Natural Gas Variable O&M Cost (USD/MWh_{el} Output)*	60	85

Table 30: Electricity Production Costs by technology. Source: IEA Global Energy Outlook 2020, IRENA Cost analysis for Hydropower. Note that the TPP considers a process efficiency of 48.06%

4.2 Dimension Decarbonisation

4.2.1 GHG emissions and removals

Trends in current GHG emissions and removals in the EU ETS, effort sharing and LULUCF sectors and different energy sectors

Long time trends in GHG emissions are difficult to assess for Albania, due to limited statistics available, particularly in the non-energy sectors. Several, in part contrasting, data sources have been assessed and compiled to best of knowledge, mostly building on INSTAT (2021), complemented by data provided by local experts, the Biennial Update Report (Ministria e Turizmit dhe Mjedisit 2021). The detailed documentation of the model can be made available. The energy balance by subsector is only available since 2016.

For these reasons, historic trends are only shown here starting from the year 2016. Current trends are given until and including the year 2022. The modelling activity underlying this document starts the projection in 2023. For a better overview of historic developments and future projections considering existing measures, figures and tables are given here only once, in the following section.

Projections of sectoral developments with existing national and Union policies and measures at least until 2040 (including for the year 2030)

Considering the measures classified as WEM in Chapter 3 and summarized in Table 29, the following figures and tables show GHG emissions for different sectors. Where appropriate, the emissions are broken down to subsectors, showing an increasing level of sectoral detail.

For better readability, these figures show values for historic trends from the year 2016 to 2022, followed by projections for the years up to 2050. Table 31 lists the historic values shown in the figures as well as projections for 2020, 2025, 2030, 2040 and 2050.

The overall trend in emissions is increasing (Figure 30), with limited emissions coming from the transformation sector. In dry years (every five years after 2022), the emissions increase as the use of the thermal power plant increases. Figure 31 shows the direct emissions from energy demand sectors. The highest share of emissions come from the transport sector, followed by industry. Note that these industry emissions are only the energy related emissions.

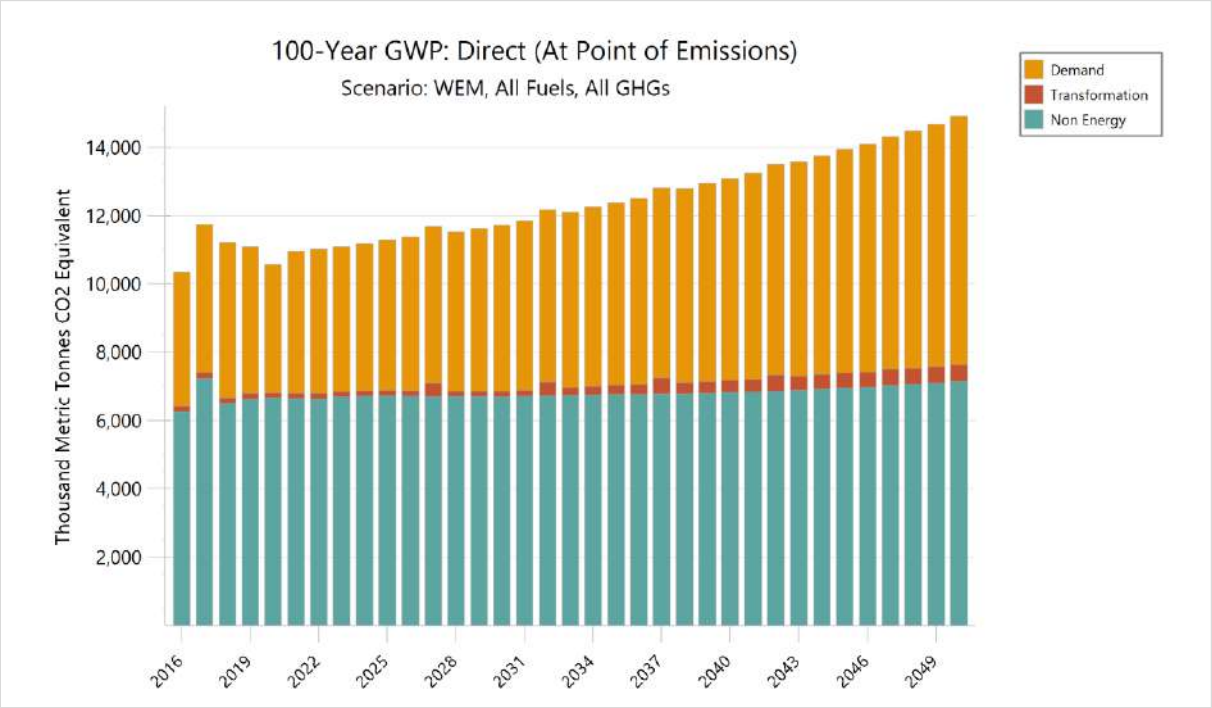

Figure 30: GHG emissions (CO2eq) for the whole economy for years 2016-2023 and projections for 2024 to 2050

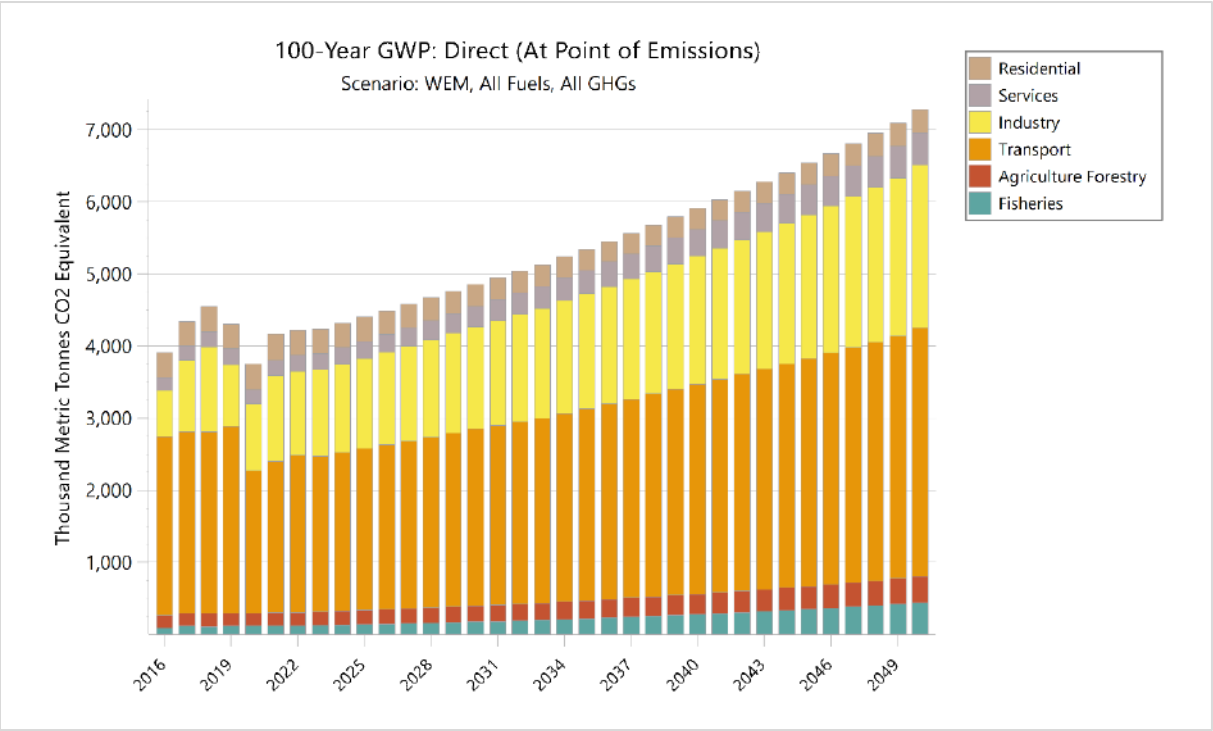

Figure 31: Direct GHG emissions (CO_2eq) for energy demand sectors for the years 2016-2023 and as projected for 2024-2050

The following figures (Figure 32-36) show the emissions from the different subsectors. In the residential sector, a change in the housing structure and technology switch in heating and hot water leads to a modest reduction of emissions. In the services sector, the total emissions increase considerably, following the increased economic activity in the sector. As the energy demand in industry (driven by an increase in production) sees an increase with GDP, the emissions rise considerably, with the Minerals sector, mainly cement production, remaining by far the largest source of emissions. Note that this subsector is particularly hard to decarbonise and sees little electrification, different to other subsectors such as the production of ferro-alloys which happens in electric arc furnaces without local energy related emissions. Emissions from the transport sector continue to rise, as the electrification of road transport cannot offset the growth in demand for mobility.

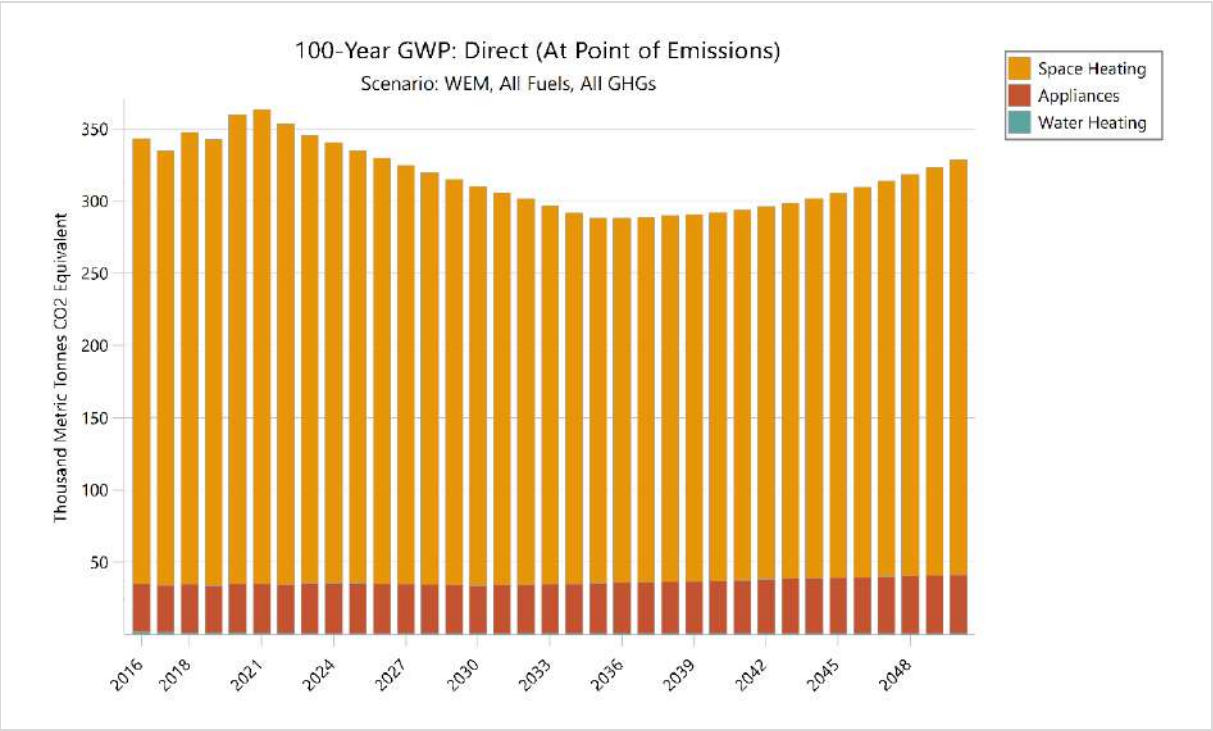

Figure 32: Direct GHG emissions (CO_2eq) for the residential sector for years 2016-2023 and as projected for 2024-2050

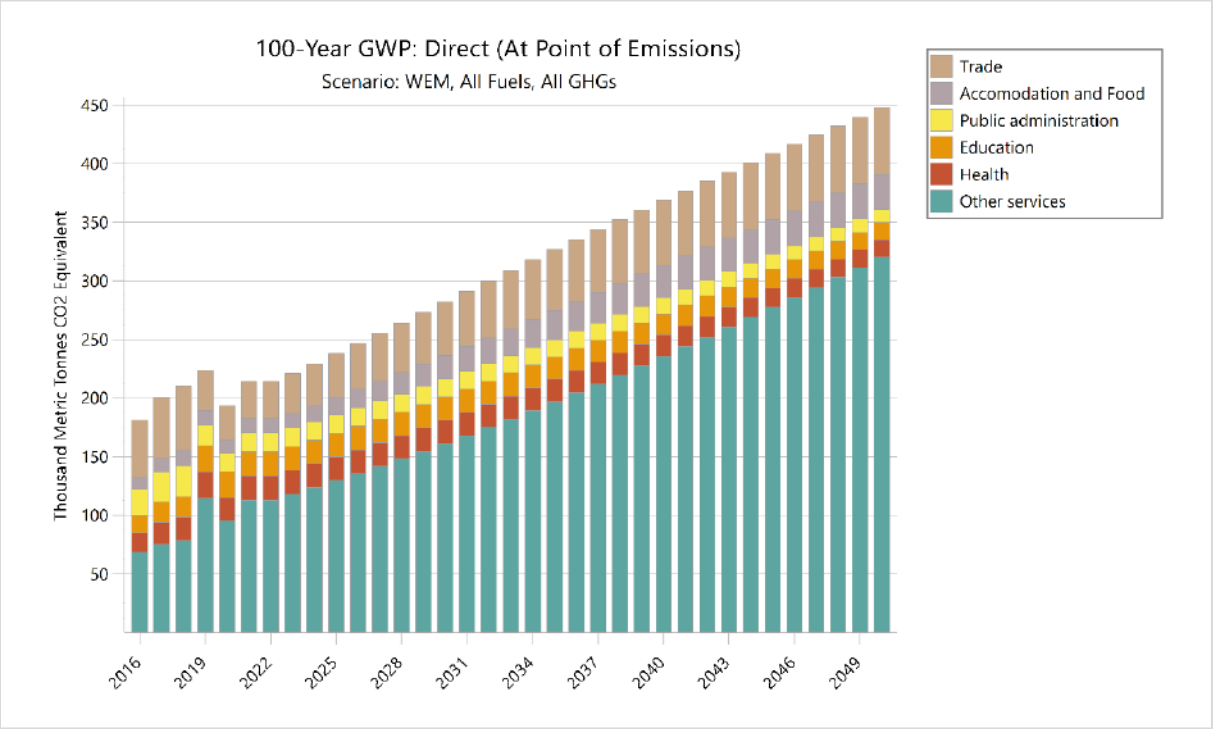

Figure 33: Direct GHG emissions (CO_2eq) for the services sector for years 2016-2023 and as projected for 2024-2050

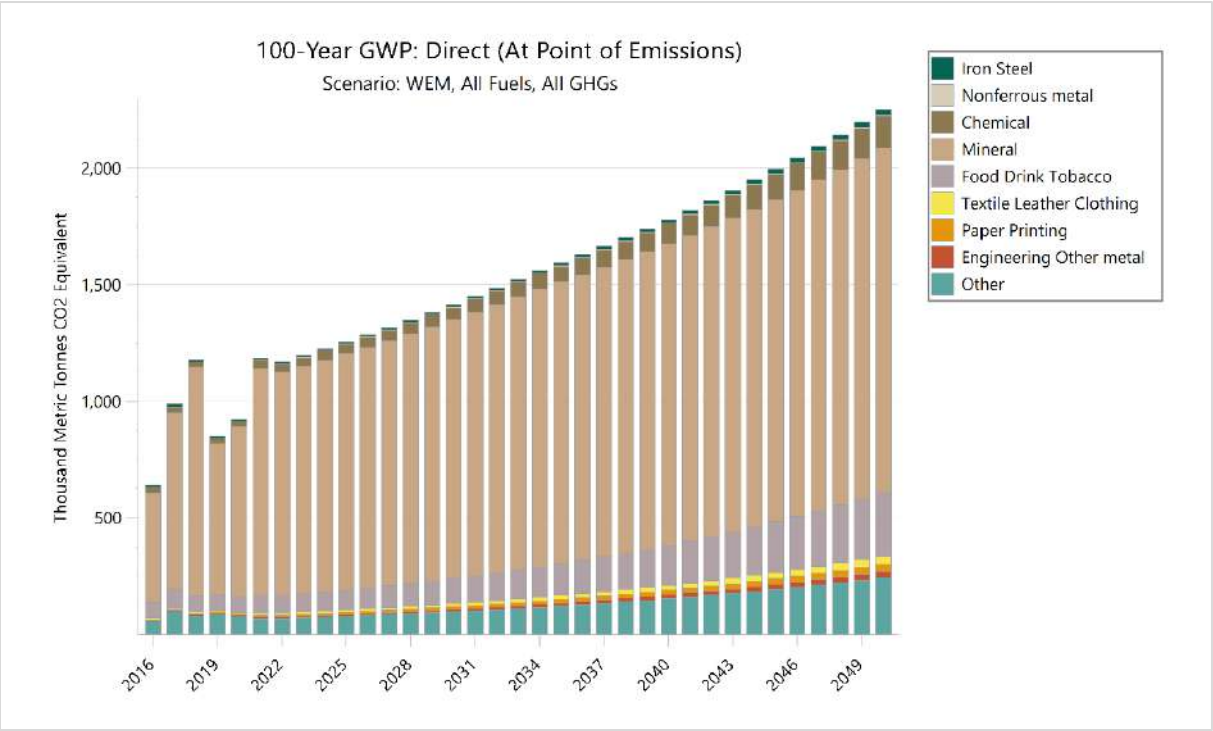

Figure 34: Direct GHG emissions (CO2eq) for industry (energy demand) for years 2016-2023 and as projected for 2024-2050

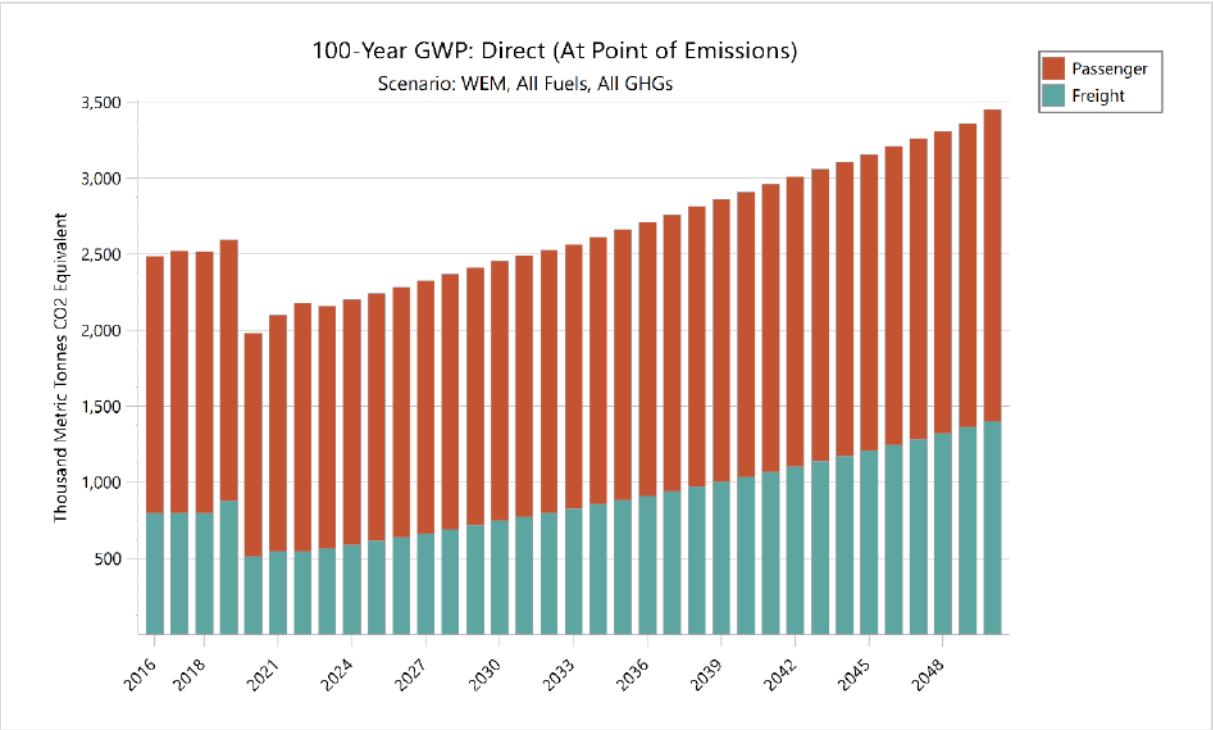

Figure 35: Direct GHG emissions (CO_2eq) for the transport sector for years 2016-2023 and as projected for 2024-2050

Emissions from the transformation sector are partially determined by emissions from electricity production in the thermal power plant (TPP) Vlora, which sees a repowering with natural gas. However, with the existing hydro power plants and respective plans, the use of this power plant is limited initially to dry years with limited hydro availability. Only after 2032 the electricity demand rises to such levels that the power plant is used every year.

In addition to power generation, the emissions from the transformation sector are determined by the oil extraction and refinery activity, which is constant in the WEM scenario.

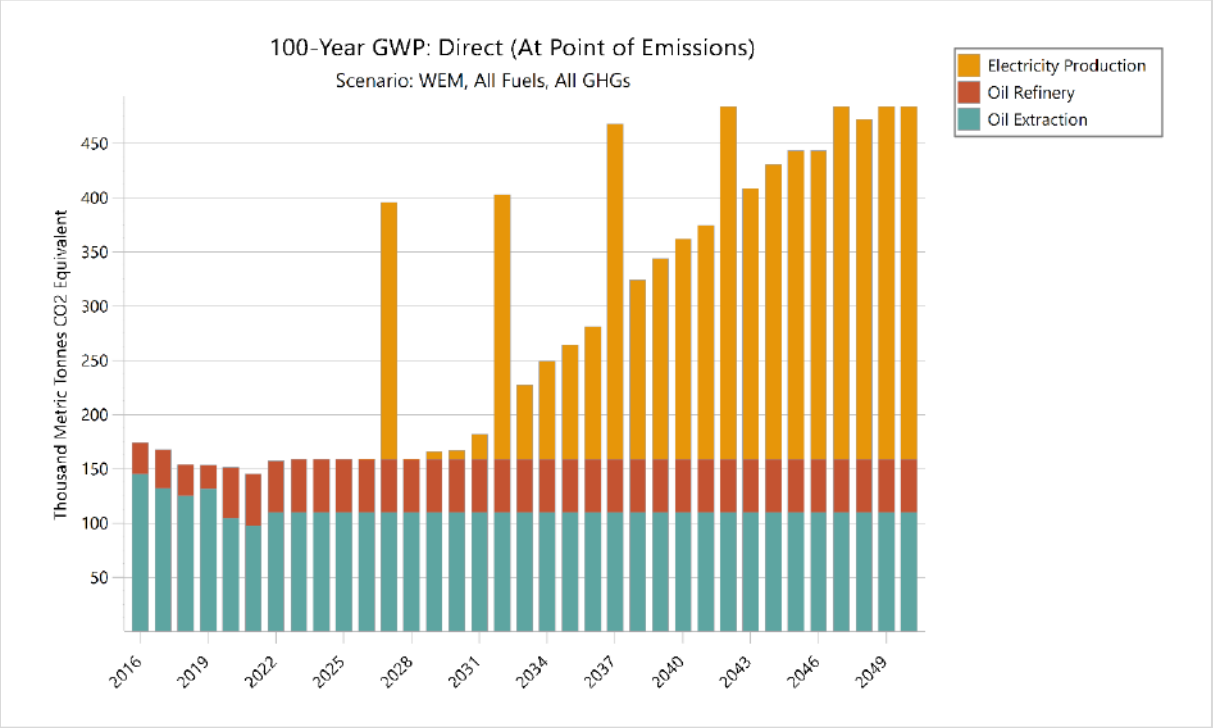

Figure 36: Direct GHG emissions (CO_2eq) for the transformation sector for years 2016-2023 and as projected for 2024-2050

The following Figure 37 shows non-energy emissions. While agriculture emissions remain constant, the LULUCF sector remains a source of emissions. Waste sector emissions decline after 2025 while IPPU emissions continue to rise even after 2030. These sectors are discussed in more detail in the following paragraphs.

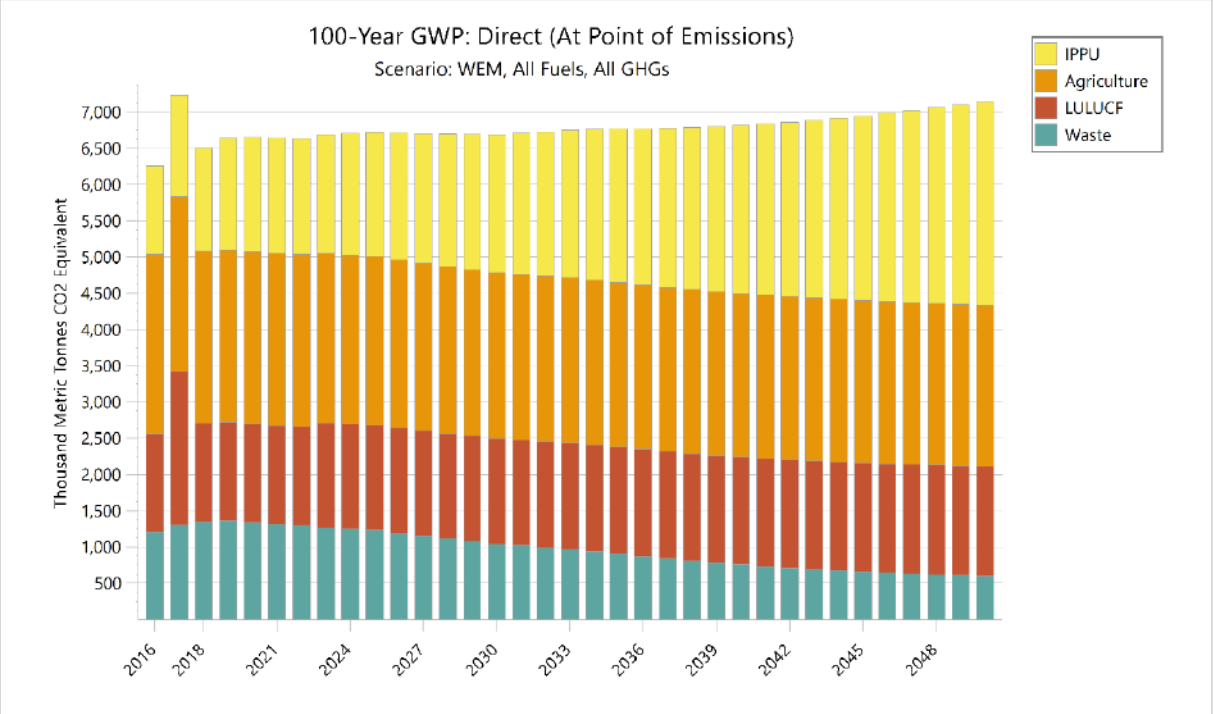

Figure 37: Non-energy related GHG emissions (CO_2eq) for years 2016-2023 and as projected for 2024 - 2050

From Figure 38, it is clear that the cement production is the main contributor to IPPU emissions, as well as energy related emissions. While the other industrial sectors play only a minor role, it is necessary to regulate emissions of refrigerants used in place of ozone depleting substances, the second largest source of emissions in the IPPU sector. Main share of agriculture emissions (Figure 39) is taken by enteric fermentation, which is not projected to change as livestock numbers stay close to constant. A small reduction in the sector is achieved by a reduction of urea application. LULUCF emissions (Figure 40) are projected to remain net positive. The natural sink capacity of the forest cannot outweigh the emissions due to forest management. Large episodes of forest fires are not considered in the model, but the median area affected by forest fires is projected to increase. Waste sector emissions (Figure 41) see a decline due to a change in management practices of solid waste disposal, changing recycling shares and disposal site management. This does not lead to a complete drop in emissions, as existing waste disposal sites continue to emit. Emission reductions are also achieved by a change in wastewater management practices, essentially moving away from direct river discharge to well managed sites without methane emissions.

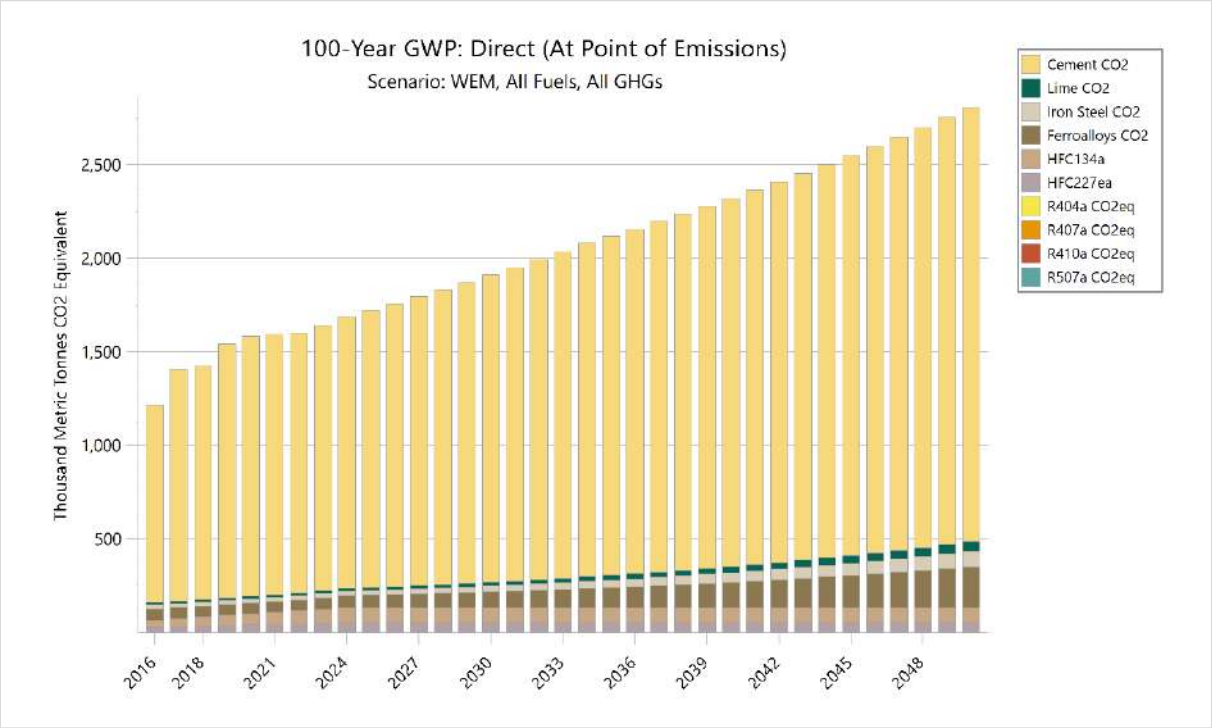

Figure 38: GHG emissions (CO_2eq) from industrial processes and product use for years 2016-2023 and as projected for 2024-2050

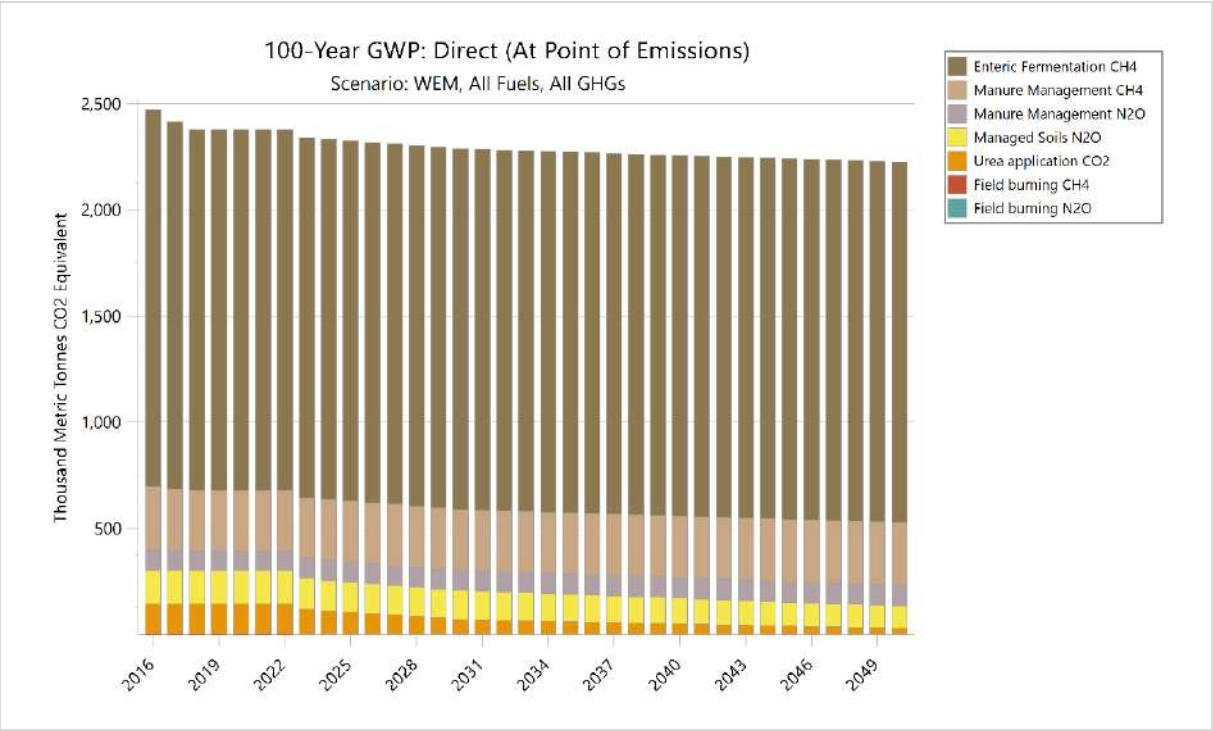

Figure 39: Non-energy related GHG emissions (CO_2eq) from agricultural activities for years 2016-2023 and as projected for 2024 - 2050

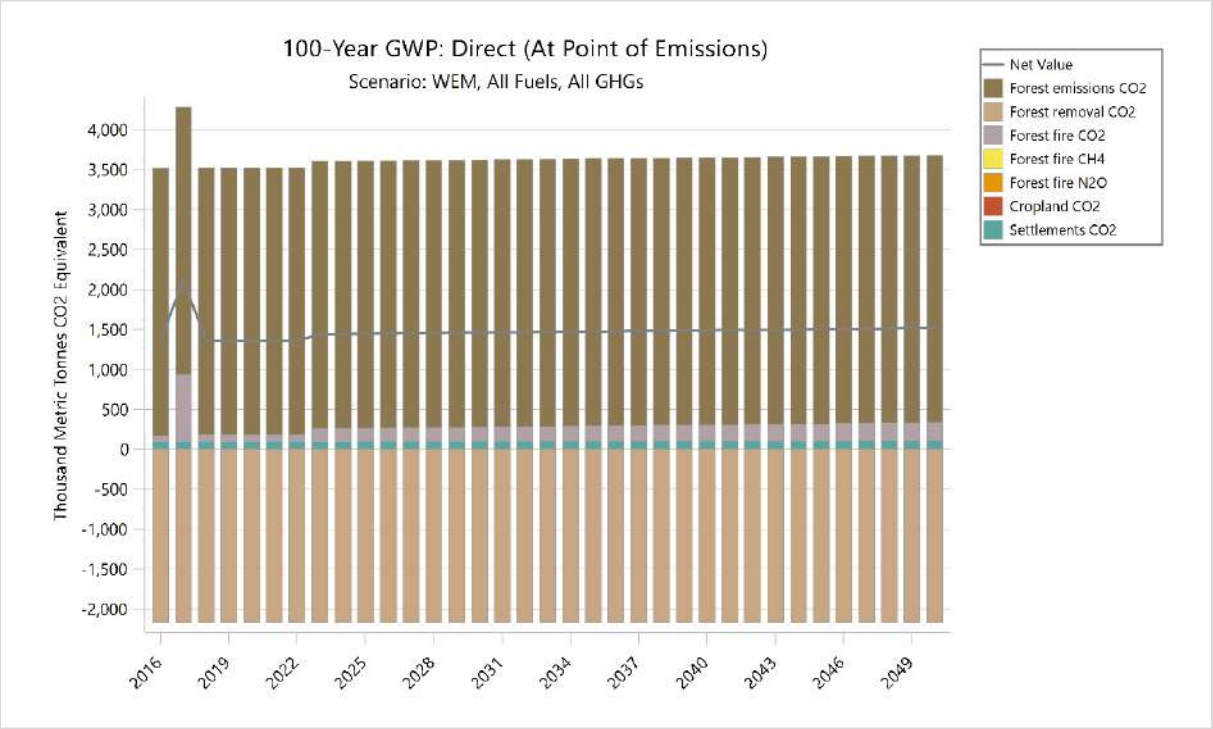

Figure 40: Non-energy GHG emissions (CO_2eq) from land-use, land-use change and forestry (LULUCF) for years 2016-2023 and as projected for 2024-2050

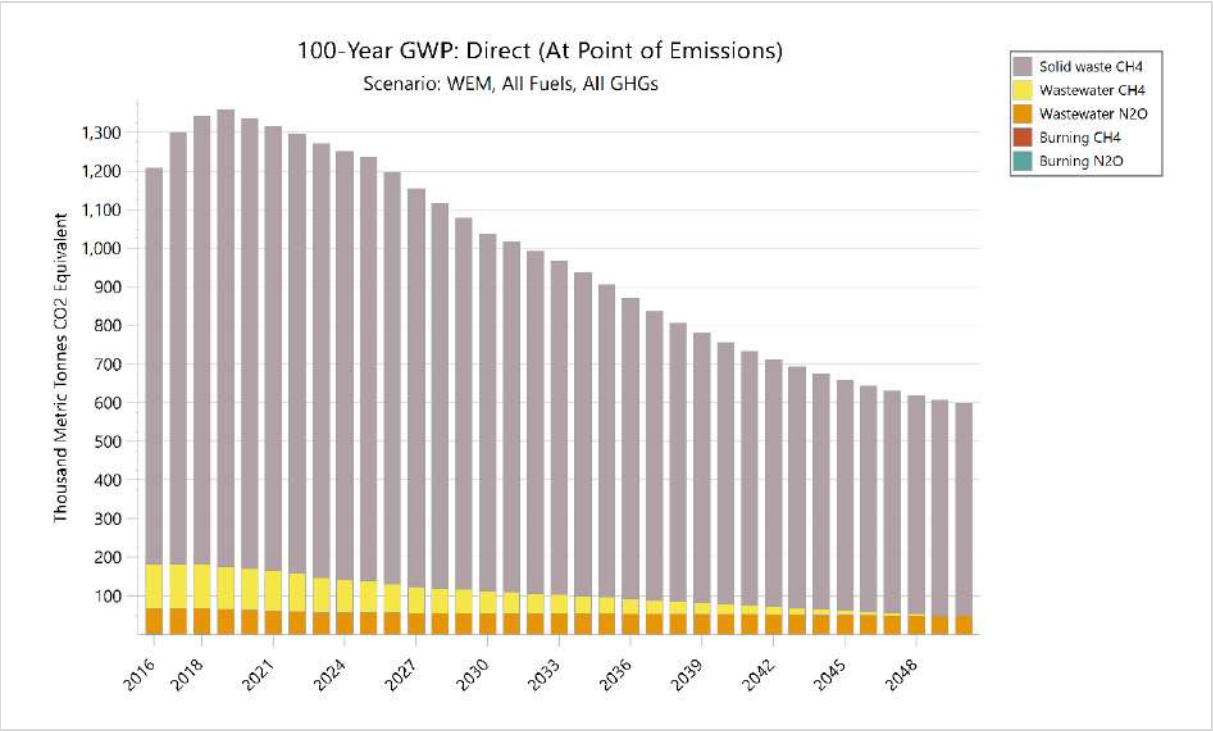

Figure 41: Non-energy GHG emissions (CO_2eq) from the waste sector for years 2016-2023 and as projected for 2024-2050

The following table gives the emissions of different sectors, subsectors and branches of the Albanian energy system as projected with existing measures, in terms of kt CO2eq (100 year global warming potential).

Branch [ktCO_2eq]	2020	2021	2022	2023	2025	2030	2040	2050
Demand	3,751.7	4,165.1	4,220.2	4,235.6	4,404.4	4,860.2	5,911.8	7,284.6
Transformation	151.4	145.1	157.2	159.0	159.0	167.1	361.7	484.1
Non Energy	6,658.6	6,645.3	6,633.3	6,691.0	6,725.9	6,692.5	6,817.6	7,145.5
Total	10,561.8	10,955.6	11,010.7	11,085.6	11,289.2	11,719.8	13,091.1	14,914.1
Demand								
Residential	359.9	363.5	353.5	345.7	334.9	310.2	292.1	328.6
Services	193.3	213.9	213.9	220.6	237.9	281.9	368.7	447.9
Industry	923.3	1,186.1	1,169.8	1,197.4	1,255.1	1,415.0	1,779.7	2,253.0
Transport	1,979.4	2,099.3	2,180.7	2,159.3	2,242.4	2,457.4	2,911.5	3,453.4
Agriculture Forestry	173.6	181.9	181.9	186.4	195.7	221.1	282.4	360.6
Fisheries	122.3	120.4	120.4	126.2	138.4	174.5	277.4	441.1
Total	3,751.7	4,165.1	4,220.2	4,235.6	4,404.4	4,860.2	5,911.8	7,284.6
Demand - Residential								
Space Heating	324.6	328.4	319.1	310.2	299.2	276.4	254.9	287.5
Appliances	34.2	34.2	33.6	34.8	35.1	33.3	36.8	40.7
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Heating	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4

Branch [ktCO₂eq]	2020	2021	2022	2023	2025	2030	2040	2050
Total	359.9	363.5	353.5	345.7	334.9	310.2	292.1	328.6
Demand - Services								
Trade	29.5	31.5	31.5	33.7	37.4	45.6	55.3	56.9
Accommodation and Food	11.1	11.9	11.9	12.9	14.8	20.0	27.8	29.9
Public administration	15.1	16.2	16.2	15.6	15.7	15.4	13.9	11.5
Education	22.6	20.8	20.8	20.1	20.2	19.9	18.0	14.8
Health	19.8	20.9	20.9	20.2	20.2	19.9	18.0	14.8
Other services	95.1	112.6	112.6	118.1	129.5	161.1	235.7	320.0
Total	193.3	213.9	213.9	220.6	237.9	281.9	368.7	447.9
Demand - Industry								
Iron Steel	9.5	6.6	6.6	6.9	7.6	9.6	15.3	24.3
Nonferrous metal	-	0.9	0.9	1.0	1.1	1.3	2.1	3.4
Chemical	22.2	37.6	37.6	39.4	43.2	54.5	86.6	137.7
Mineral	728.8	974.7	958.3	975.9	1,012.1	1,108.6	1,292.6	1,478.6
Food Drink Tobacco	68.8	75.0	75.0	78.5	86.1	108.6	172.7	274.5
Textile Leather Clothing	6.6	9.1	9.1	9.6	10.5	13.3	21.1	33.5
Paper Printing	4.3	8.5	8.5	8.9	9.7	12.3	19.5	31.0
Engineering Other metal	6.7	7.1	7.1	7.5	8.2	10.3	16.4	26.1
Other	76.4	66.6	66.6	69.8	76.6	96.6	153.5	244.0
Total	923.3	1,186.1	1,169.8	1,197.4	1,255.1	1,415.0	1,779.7	2,253.0
Demand - Transport								
Passenger	1,468.8	1,555.7	1,637.4	1,593.7	1,629.5	1,710.1	1,875.6	2,053.6
Freight	510.6	543.6	543.3	565.6	612.8	747.3	1,035.9	1,399.9
Total	1,979.4	2,099.3	2,180.7	2,159.3	2,242.4	2,457.4	2,911.5	3,453.4
Transformation								
Electricity Production	-	-	-	-	-	8.2	202.8	325.1
Oil Refinery	47.4	47.4	47.4	49.1	49.1	49.1	49.1	49.1
Oil Extraction	104.1	97.8	109.9	109.9	109.9	109.9	109.9	109.9
Total	151.4	145.1	157.2	159.0	159.0	167.1	361.7	484.1
Non-Energy								
IPPU	1,583.9	1,592.1	1,600.2	1,642.2	1,720.3	1,910.3	2,320.1	2,806.3
Agriculture	2,376.6	2,376.6	2,376.6	2,340.8	2,325.0	2,286.4	2,255.8	2,225.9
LULUCF	1,361.2	1,361.2	1,361.2	1,438.1	1,443.8	1,457.9	1,486.3	1,515.0
Waste	1,336.9	1,315.4	1,295.2	1,269.9	1,236.9	1,037.8	755.3	598.2
Total	6,658.6	6,645.3	6,633.3	6,691.0	6,725.9	6,692.5	6,817.6	7,145.5
Non-Energy - IPPU								
Cement CO_2	1,390.9	1,390.9	1,390.9	1,420.1	1,480.4	1,641.4	1,968.2	2,321.1
Lime CO_2	13.8	13.8	13.8	14.4	15.9	20.1	32.3	51.9
Glass CO_2	-	-	-	-	-	-	-	-

Branch [ktCO₂eq]	2020	2021	2022	2023	2025	2030	2040	2050
Other carbonates CO_2	-	-	-	-	-	-	-	-
Iron Steel CO_2	22.1	22.1	22.1	23.2	25.5	32.3	51.9	83.4
Ferroalloys CO_2	57.9	57.9	57.9	60.7	66.8	84.6	135.8	218.1
HFC134a	59.2	63.9	68.6	73.3	78.0	78.0	78.0	78.0
HFC227ea	39.8	43.3	46.7	50.2	53.6	53.6	53.6	53.6
R404a CO_2eq	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
R407a CO_2eq	0.0	0.0	0.0	0.0	-	-	-	-
R410a CO_2eq	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
R507a CO_2eq	0.0	0.0	0.0	0.0	-	-	-	-
Total	1,583.9	1,592.1	1,600.2	1,642.2	1,720.3	1,910.3	2,320.1	2,806.3
Non-Energy - Agriculture								
Enteric Fermentation CH_4	1,697.5	1,697.5	1,697.5	1,697.6	1,697.8	1,698.2	1,699.0	1,700.0
Manure Management CH_4	283.8	283.8	283.8	284.0	284.7	286.6	290.7	295.3
Manure Management N_2O	94.8	94.8	94.8	94.8	95.0	95.4	96.4	97.4
Managed Soils N_2O	155.8	155.8	155.8	146.4	142.9	134.3	119.4	104.5
Liming CO_2	-	-	-	-	-	-	-	-
Urea application CO_2	143.8	143.8	143.8	117.7	104.6	71.9	50.3	28.8
Field burning CH_4	0.7	0.7	0.7	0.3	-	-	-	-
Field burning N_2O	0.2	0.2	0.2	0.1	-	-	-	-
Total	2,376.6	2,376.6	2,376.6	2,340.8	2,325.0	2,286.4	2,255.8	2,225.9
Non-Energy - LULUCF								
Harvested wood CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest emissions CO_2	3,344.6	3,344.6	3,344.6	3,344.6	3,344.6	3,344.6	3,344.6	3,344.6
Forest removal CO_2	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6
Forest fire CO_2	84.7	84.7	84.7	161.2	165.8	177.5	200.9	224.2
Forest fire CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest fire N_2O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cropland CO_2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Grassland CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wetlands CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Settlements CO_2	93.5	93.5	93.5	94.0	94.9	97.4	102.5	107.8
Other land CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,361.2	1,361.2	1,361.2	1,438.1	1,443.8	1,457.9	1,486.3	1,515.0
Non-Energy - Waste								
Solid waste CH_4	1,166.8	1,151.2	1,136.9	1,123.9	1,097.4	925.3	676.6	550.6
Wastewater CH_4	107.5	103.8	100.1	90.0	83.8	58.0	27.3	-
Wastewater N_2O	62.5	60.3	58.2	56.0	55.6	54.5	51.4	47.6
Burning CH_4	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Burning N_2O	0.0	0.0	0.0	0.0	0.0	0.0	-	-

Branch [ktCO₂eq]	2020	2021	2022	2023	2025	2030	2040	2050
Total	1,336.9	1,315.4	1,295.2	1,269.9	1,236.9	1,037.8	755.3	598.2

Table 31: GHG emissions (kt CO_2eq) for different branches of the economy, as determined for years (2020-2023) and as projected with existing measures until year 2050.

Some of the emissions account for gases other than CO_2. As noted above, these are given in terms of their 100-year global warming potential CO_2 equivalent. For completeness purposes, the following table gives the factor used to calculate this value from physical emissions of the respective gases. Note that some of the hydrofluorocarbons are reported and projected in terms of CO_2eq directly.

Effect	Abbreviation	100 year GWP (tCO2eq/t)
Carbon Dioxide	CO_2	1
Methane	CH_4	30
Nitrous Oxide	N_2O	265
HFC-134a	CH_2FCF_3	1300
HFC-227ea	CF_3CHFCF_3	3350

Table 32: 100-year global warming potential for gases considered in the analysis.

4.2.2 Renewable Energy

Current share of renewable energy in gross final energy consumption and in different sectors (heating and cooling, electricity and transport) as well as per technology in each of these sectors

Current values in renewable energy are discussed in conjunction with projections with existing measures in the next section.

Indicative projections of development with existing policies for the year 2030 (with an outlook to the year 2040)

Current targets in renewable energy are defined in total primary energy supply (TPES). For reference, the following table gives the current share of renewable energy in TPES and the projection until the year 2050 under consideration of existing measures. Figure 42 and Table 33 give the absolute values of renewable energy sources in net primary supply of energy, while Table 34 shows shares of relevant renewable energy carriers in TPES. More details on TPES, particularly on the fuel split with fossil fuels, are provided in section 4.3.

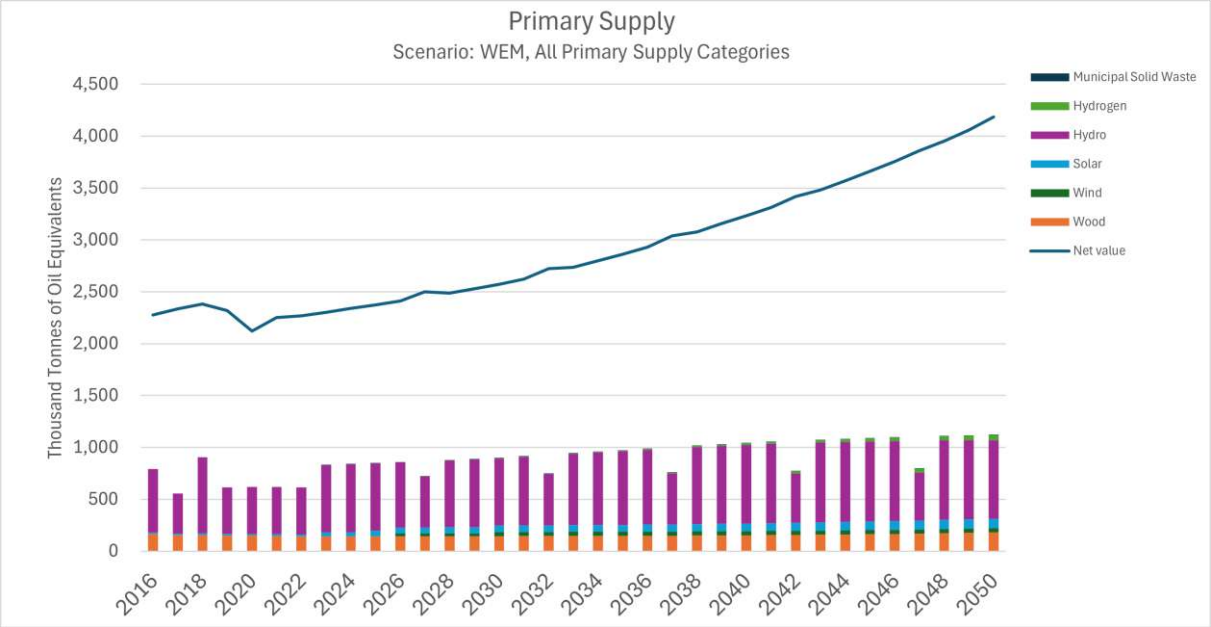

Figure 42: Renewable sources of primary energy supply and total net consumption for historic years (2016-2023) and as projected with existing measures until the year 2050

	2020	2021	2022	2023	2025	2030	2040	2050
Wood	149.5	146.3	143.2	142.1	142.5	145.0	153.0	179.7
Wind	-	-	-	-	-	41.4	41.4	41.4
Solar	15.8	16.7	16.5	37.7	55.3	61.5	72.3	92.1
Hydro	454.7	454.7	454.7	648.9	649.6	647.1	758.5	757.9
Hydrogen	-	-	-	-	-	0.1	15.3	47.7
Municipal Solid Waste	-	-	-	1.3	0.9	0.1	2.2	3.6
Biomass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Biodiesel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	620.0	617.6	614.3	830.0	848.3	895.1	1,042.8	1,122.3

Table 33: Absolute values for selected fuels in TPES given in ktoe, in particular those considered for the renewable share of TPES

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Wood	7.1%	6.5%	6.3%	6.2%	6.0%	5.6%	4.7%	4.3%
Wind	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	1.3%	1.0%
Solar	0.7%	0.7%	0.7%	1.6%	2.3%	2.4%	2.2%	2.2%
Hydro	21.4%	20.2%	20.1%	28.2%	27.4%	25.2%	23.5%	18.1%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.1%
Municipal Solid Waste	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%

Biomass	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Biodiesel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**29.2%**	**27.4%**	**27.1%**	**36.0%**	**35.7%**	**34.8%**	**32.3%**	**26.8%**

Table 34: Shares in TPES for those fuels considered in the renewable share of TPES.

Renewable shares in final energy consumption are determined according to Directive 2009/28/EC (RED; EU (2009); also see European Commission (2018)). The following figures show historic data in RES share for 2016-2021 and projections with existing measures. For the share in transport (RES-T), this includes the multipliers for the use of electricity in road and rail transport, which explains the strong increase (electricity is used to meet just close to 10% of final energy demand in the transport sector in 2040). No advanced biofuels (with increased multipliers) are considered. The share of renewable energy in heating and cooling (RES-HC) falls as the share of wood for heating decreases. The share of renewable electricity (RES-E) is largely determined by hydropower, with increases projected for solar PV. Subsequent figures give technological details on each RES indicator.

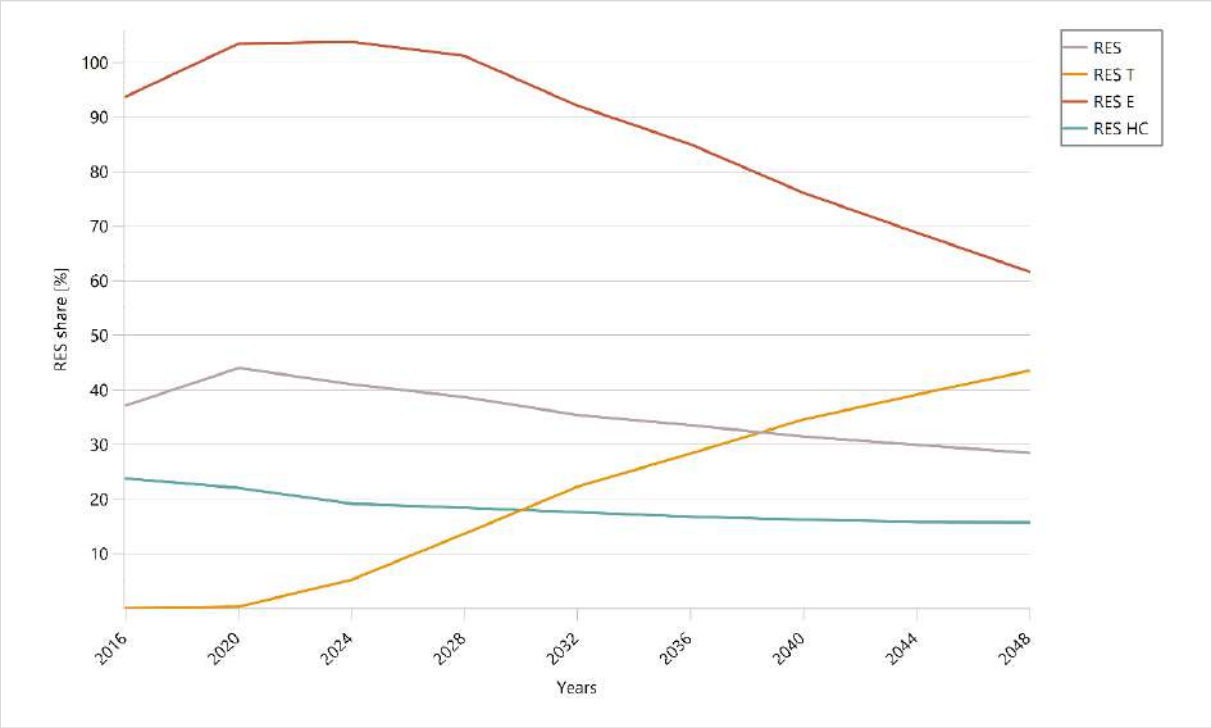

Figure 43: RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) for historic years 2016-2022 and projections up to year 2050 with existing measures

[%]	2020	2021	2022	2023	2025	2030	2040	2050
RES E	103.5	96.3	97.9	105.0	100.9	98.3	76.1	58.0
RES T	0.3	0.5	0.8	3.1	7.4	17.8	34.6	44.8
RES HC	22.0	19.8	19.7	19.4	19.0	18.1	16.2	15.7
RES	44.1	39.9	39.6	41.9	39.7	37.1	31.5	27.6

Table 35: RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) for historic years 2016-2022 and projections up to year 2050 with existing measures

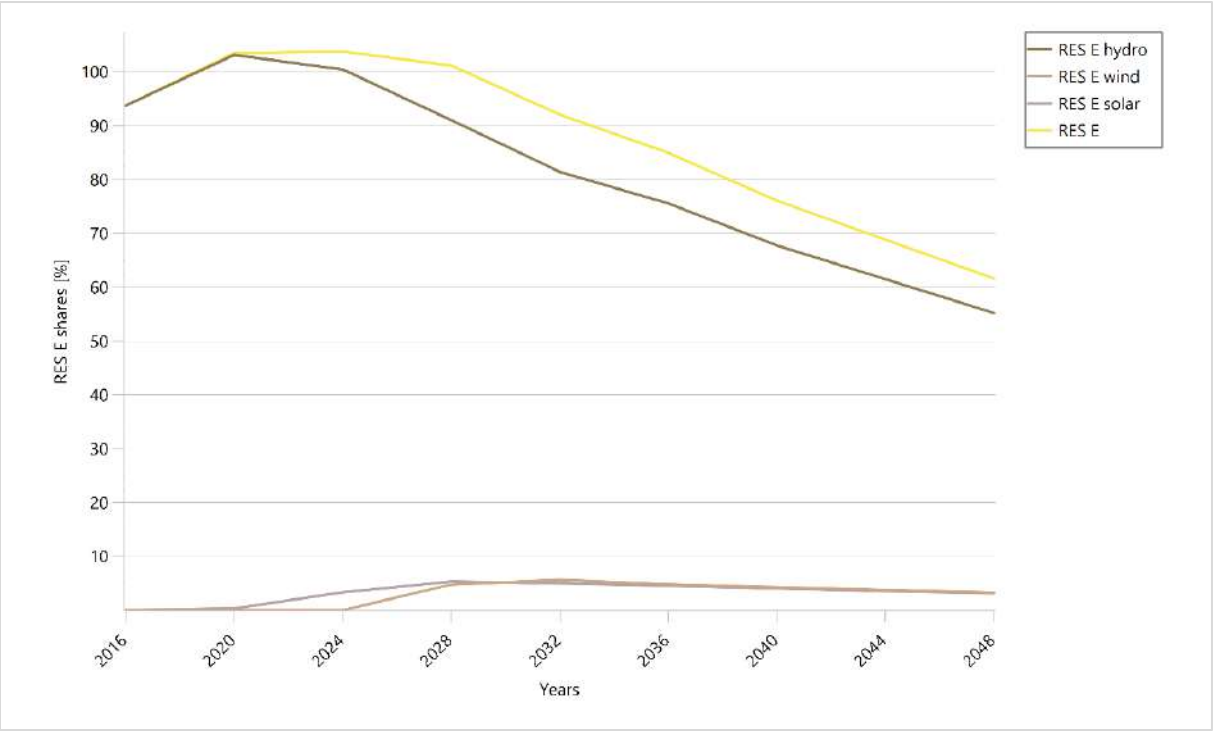

Figure 44: RES-E share (renewable share in electricity generation), calculated according to RED (Directive 2009/28/EC) for historic years 2016-2022 and projections up to year 2050 with existing measures

[%]	2020	2021	2022	2023	2025	2030	2040	2050
Hydro	103.1	95.9	97.5	101.7	95.4	87.5	67.8	52.0
Wind	0.0	0.0	0.0	0.0	0.0	5.5	4.3	3.1
Solar	0.3	0.3	0.3	3.3	5.5	5.3	4.0	2.9
Solid biofuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All other renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total RES E	103.5	96.3	97.9	105.0	100.9	98.3	76.1	58.0

Table 36: RES-E share (renewable share in electricity generation), calculated according to RED (Directive 2009/28/EC) for historic years 2016-2023 and projections up to year 2050 with existing measures

The following figure shows fuels currently used in the transport sector and projections until 2050. No biodiesel share is considered, and this is not projected to play a role with existing measures. Electricity is used to meet a limited share of energy demand in the transport sector. This is mainly of renewable origin.

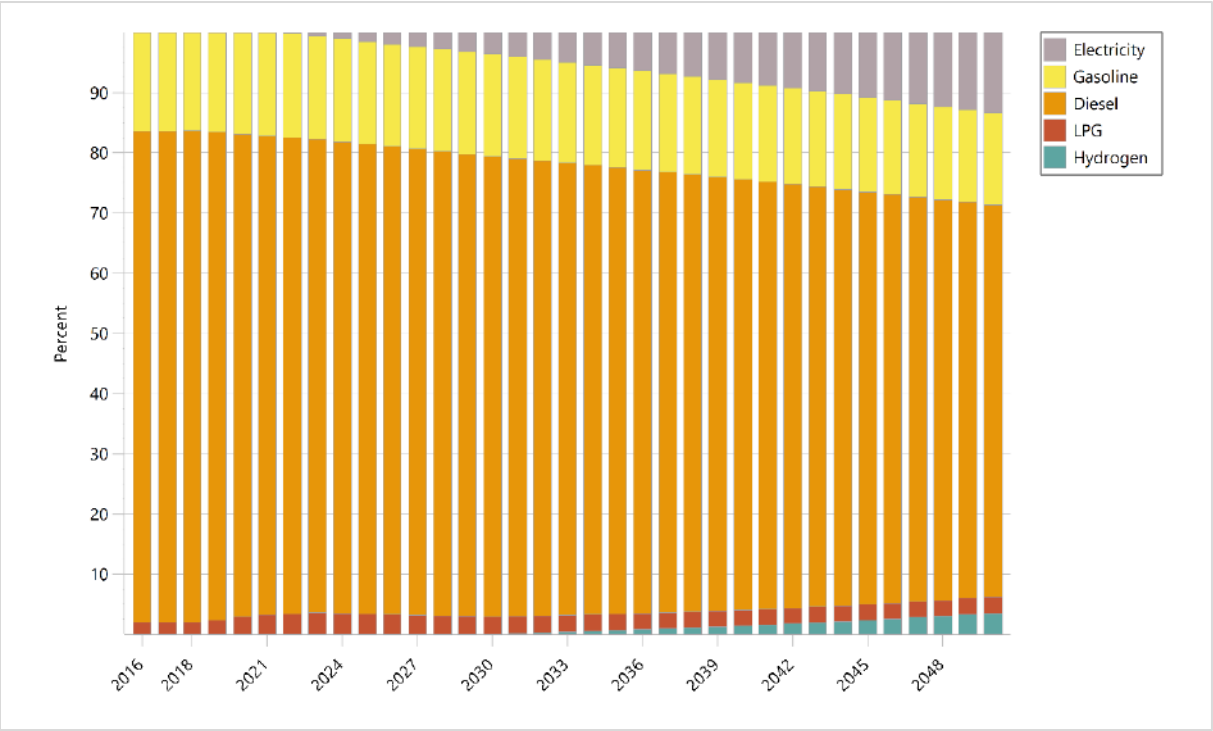

Figure 45: Energy sources in the transport sector, to accompany and explain the RES-T share given in Figure 43

Fuel	2020	2021	2022	2023	2025	2030	2040	2050
Electricity	0.1%	0.1%	0.2%	0.7%	1.5%	3.6%	8.3%	13.4%
Gasoline	16.8%	17.1%	17.2%	17.1%	17.1%	17.0%	16.1%	15.3%
Diesel	80.2%	79.6%	79.2%	78.7%	78.1%	76.5%	71.6%	65.1%
LPG	2.9%	3.2%	3.4%	3.6%	3.4%	2.9%	2.6%	2.7%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	3.5%
Biodiesel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 37: Shares of energy sources in the transport sector for historic years 2020-2023 and projected up to year 2050 with existing measures

The RES-HC share combines all renewable energies other than electricity, heat and bioliquids in sectors other than transport. This concerns the residential, services, industry, agriculture and fisheries sectors and the fuels wind, solar, wood, hydro and biomass. Of these, only solar and wood play a substantial role, both are used for space and water heating as well as some industrial processes. Agriculture and fisheries do not use renewable energies (other than through electricity, which remains unconsidered here). The following table gives the share of wood and solar energy in relation to the total final energy in each of the remaining three sectors.

Note that the RES-HC share reports the share in of renewable energy in relation to the final energy demand other than electricity, which explains the higher percentage in RES-HC compared to the values shown in the following table.

Fuel	2020	2021	2022	2023	2025	2030	2040	2050
Residential								
Wood	22.4%	21.4%	21.3%	21.2%	21.0%	20.8%	19.0%	16.9%
Solar	1.5%	1.6%	1.6%	1.7%	2.1%	3.1%	4.5%	6.5%
Services								
Wood	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Solar	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Industry								
Wood	2.1%	1.7%	1.7%	1.8%	1.8%	2.0%	2.3%	2.7%
Solar	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%
Total								
Wood	7.8%	7.1%	6.9%	6.8%	6.6%	6.1%	5.1%	4.7%
Solar	0.7%	0.7%	0.7%	0.7%	0.8%	1.0%	1.1%	1.4%

Table 38: Shares of wood and solar energy in final energy demand of the sectors which make use of these fuels. Note that the shares here do not equal the RES HC share, as the reference in RES HC is not final energy, but final energy other than electricity.

Figure 46 shows the final energy demand for space heating in the residential sector as the sector with the largest demand in renewable energy other than electricity. The final energy demand decreases over time as a strong renovation scheme is taking place, explained in section 4.1.ii. The renovation and reconstruction lead to a decrease in the final energy intensity for heating. In addition, it is assumed that heat pumps replace electricity for heating if deep renovation takes place, where deep renovation is understood as e.g. replacing windows in line with SLED (2015). The energy contained in the ambient heat is not explicitly reflected in the projection, only the electricity used to run the heat pump. This determines the final energy intensity of space heating, which consequently sees a reduction. Electricity consumption increases as a trend of the increased use of appliances connected with the GDP per capita growth and the electrification of space heating.

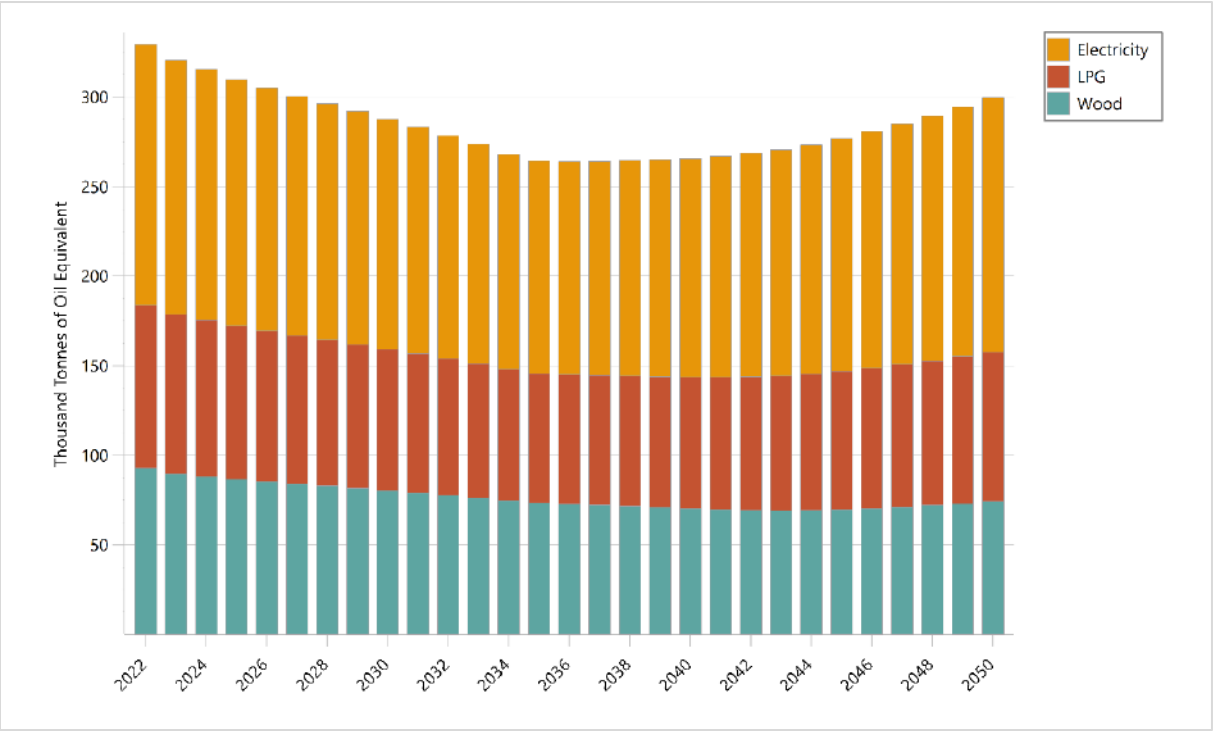

Figure 46: Final energy and fuels used in the residential sector for space heating across all building classes and geographic zones for historic years 2022-2024 and as projected for up to year 2050 with existing measures

4.3 Dimension Energy Efficiency

Current primary and final energy consumption in the economy and per sector (including industry, residential, service and transport)

The final energy consumption of Albania (2021) is at 2012 ktoe, with primary energy consumption at 2297 ktoe. The difference is determined by transmission losses and the refining of crude oil to refinery products. Currently, a large share of crude oil is exported and not processed in local refineries. As mentioned above, a detailed energy balance on subsector level of industrial demand is only available since the year 2016. Historic values for the year 2016 to 2021 are shown below in combination with projections considering existing policies and measures.

Current potential for the application of high-efficiency cogeneration and efficient district heating and cooling

The power supply of Albania is currently based exclusively on hydropower, with limited installations of solar PV and wind power plants projected with existing measures until the year 2050. There is no fossil-fuelled power plant in operation and no electricity generation from biomass. Cogeneration of heat and electricity is therefore not a possible option. There are currently no district heating networks in operation or planned. The potential for such networks would exist in larger agglomerations. There is limited industry, which could provide a source for district heating (cement, iron and steel, ferro-alloy production). There is a general potential for district heating, as the use of fuel wood for heating is high in older buildings, which are undergoing a strong reconstruction scheme. Corresponding projects are currently not planned or projected to be realized.

Projections considering existing energy efficiency policies, measures and programmes as described in point 1.2. (ii) for primary and final energy consumption for each sector at least until 2040 (including for the year 2030)

Net primary energy supply in Albania in 2021 was 2297 ktoe and is projected to increase to 2,570 ktoe by 2030 and 4,183 ktoe by 2050. Figure 47 shows the primary energy supply for Albania as projected with existing measures up to the year 2050. The figure shows net values of each fuel category. As these values are for primary energy, electricity is only displayed when it is not produced in the country from primary energy sources (mostly hydro) but imported (mostly in years in which the hydro availability has been deliberately reduced to study the effect on the energy system). The total demand for primary energy increases, in particular driven by the demand for transport fuels. The increasing demand for electricity is met by an increasing supply with hydro power, new renewables and the gas fired power plant. Table 39 gives the values for each fuel considered. Note that negative values stand for an export of the respective fuel.

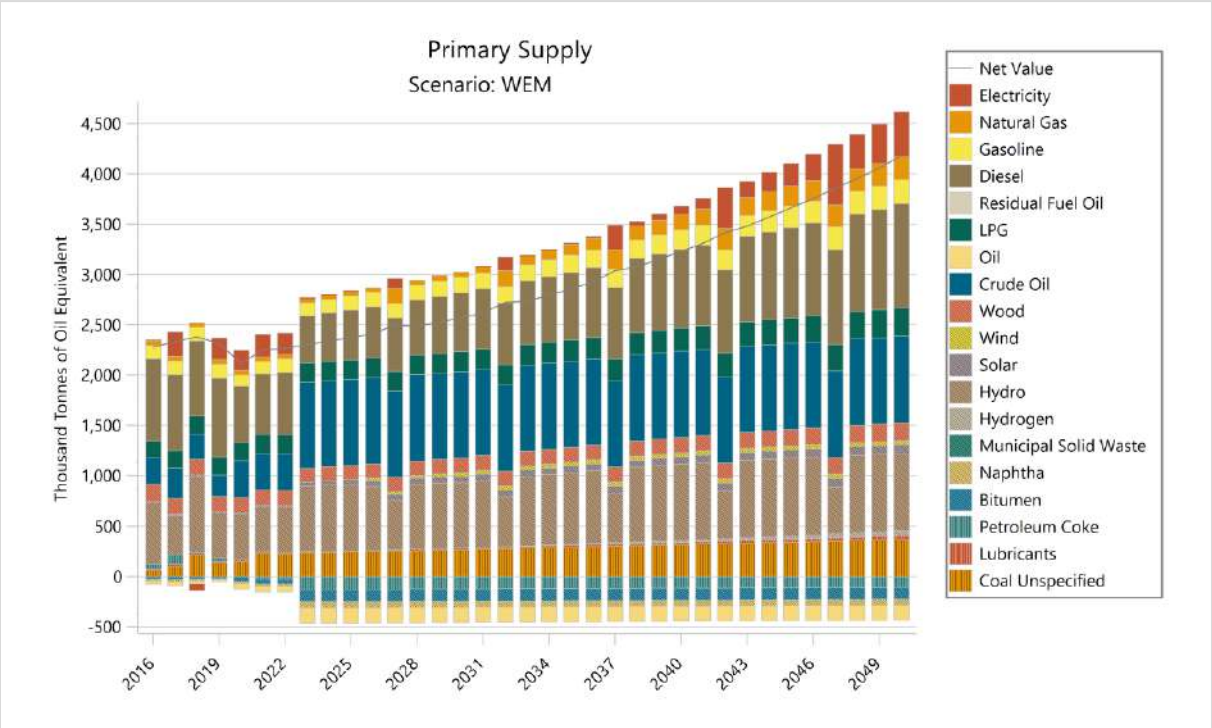

Figure 47: Primary energy supply for historic years 2016-2023 and as projected up to the year 2050 with existing measures. Negative values indicate exports.

Fuel [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Electricity	201.2	225.3	215.7	5.4	2.6	-	83.3	445.0
Natural Gas	44.7	44.0	44.0	43.9	46.2	55.6	155.1	229.0
Gasoline	111.8	127.6	133.4	132.0	138.8	156.4	192.4	242.5
Jet Kerosene								
Kerosene								
Diesel	561.6	599.6	619.0	465.6	497.6	583.3	781.0	1,031.4
Residual Fuel Oil								
LPG	178.8	191.6	190.7	191.9	193.9	200.4	230.3	285.9

Fuel [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Oil	-55.6	-54.9	-54.9	-153.5	-152.9	-151.4	-148.6	-146.0
Crude Oil	362.8	359.5	365.8	857.2	857.2	857.2	857.2	857.2
Coal Lignite								
Wood	149.5	146.3	143.2	142.1	142.5	145.0	153.0	179.7
Charcoal								
Wind	-	-	-	-	-	41.4	41.4	41.4
Solar	15.8	16.7	16.5	37.7	55.3	61.5	72.3	92.1
Hydro	454.7	454.7	454.7	648.9	649.6	647.1	758.5	757.9
Heat								
Hydrogen	-	-	-	-	-	0.1	15.3	47.7
Municipal Solid Waste	-	-	-	1.3	0.9	0.1	2.2	3.6
Naphtha	-24.2	-24.2	-24.2	-62.6	-62.6	-62.6	-62.6	-62.6
Bitumen	-46.3	-46.3	-46.3	-120.0	-120.0	-120.0	-120.0	-120.0
Petroleum Coke	-2.7	-29.4	-29.4	-129.8	-128.4	-124.5	-116.6	-107.4
Lubricants	15.3	10.4	10.4	10.9	12.0	15.1	24.0	38.2
Coal Unspecified	152.5	231.8	227.7	232.1	241.3	266.0	315.0	367.8
Biomass								
Biodiesel								
Total	2,119.9	2,252.6	2,266.2	2,303.1	2,374.0	2,570.5	3,233.3	4,183.3

Table 39: Primary energy supply (in ktoe) for historic years 2020-2023 and as projected up to 2050 with existing measures. Negative values indicate exports.

Final energy consumption was 2,012 ktoe in 2021 and is projected to increase to 2383.0 ktoe by 2030 and to 3855.4 ktoe by 2050. Final energy consumption is used synonymous to final energy demand and abbreviated by FEC in the following. Table 40 gives the total final energy demand. The ratio of FEC to TPES is also given; it sees a slight increase due to the increased refinery activity from 90.4% to 92.7% in 2030 due to a change in refinery activity and falling transmission losses.

	2020	2021	2022	2023	2025	2030	2040	2050
Final energy demand [ktoe]	1,916.1	2,050.7	2,062.0	2,074.8	2,157.4	2,383.0	2,975.7	3,855.4
FEC to TPES	90.4%	91.0%	91.0%	90.1%	90.9%	92.7%	92.0%	92.2%

Table 40: Final energy demand for historic years 2020-2023 and as projected up to the year 2030 and for 2040 and 2050 with existing measures

Figure 48 and Table 41 show the share of different sectors in final energy demand. The share of energy consumption in the residential sector decreases.

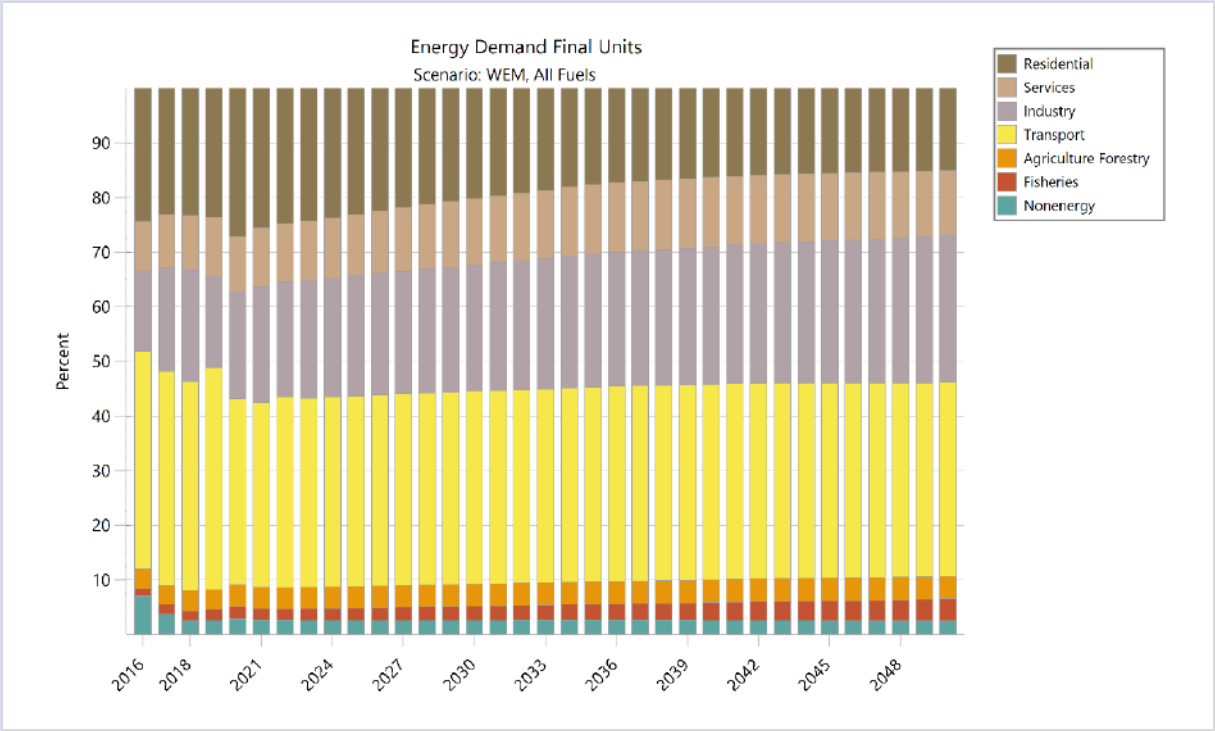

Figure 48: Shares of final energy demand for the demand sectors for historic years 2016-2023 and as projected up to the year 2050 with existing measures.

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Residential	27.1%	25.6%	24.9%	24.3%	23.1%	20.2%	16.3%	15.0%
Services	10.3%	10.7%	10.6%	10.9%	11.3%	12.1%	12.7%	11.9%
Industry	19.3%	21.3%	21.0%	21.5%	21.9%	23.1%	25.2%	26.9%
Transport	34.1%	33.9%	35.0%	34.6%	34.9%	35.3%	35.8%	35.7%
Agriculture	4.0%	3.9%	3.9%	3.9%	4.0%	4.1%	4.1%	4.1%
Fisheries	2.2%	2.0%	2.0%	2.1%	2.2%	2.5%	3.2%	4.0%
Nonenergy	2.9%	2.7%	2.7%	2.6%	2.6%	2.6%	2.6%	2.5%

Table 41: Shares of final energy demand for the demand sectors for historic years 2020-2023 and as projected up to the year 2050 with existing measures.

The following figures show the final energy demand per sector, broken down to respective subsectors, again for historic values from 2016 to 2023 and projections until the year 2050. As with GHG emissions, this is followed by a table, which gives the values for 2020-2023, 2025, 2030, 2040 and 2050. Each figure of the energy demand in the subsectors is accompanied by a figure showing the fuel split in the subsector, which is not listed as reference in the following description. The following paragraphs highlight main observations while figures are grouped to maintain readability.

Figure 49 shows the overall energy demand. The largest sector is transport, which also sees an increase in demand until 2050. The same is true for industry at a lower level. The energy demand from the residential sector is almost stabilised.

Figure 51 shows the residential sector in more detail, pointing towards a decline in energy demand from space heating, countered by an increase in space cooling and from the use of appliances. The services sector (Figure 53) sees only modest changes both in total energy demand and fuel split.

The energy demand in industry is projected to increase (Figure 55) with no fuel split and limited energy efficiency measures. The demand for mobility is projected to increase and the energy demand follows suite (Figure 57). In passenger transport (Figure 59), rail transport is projected to take a small share of the demand towards 2030 already, while electrification happens in road transport. Freight transport (Figure 61) sees less use of rail, with the bulk of transport happening on roads. After 2030, a small share of hydrogen is projected to come into the system.

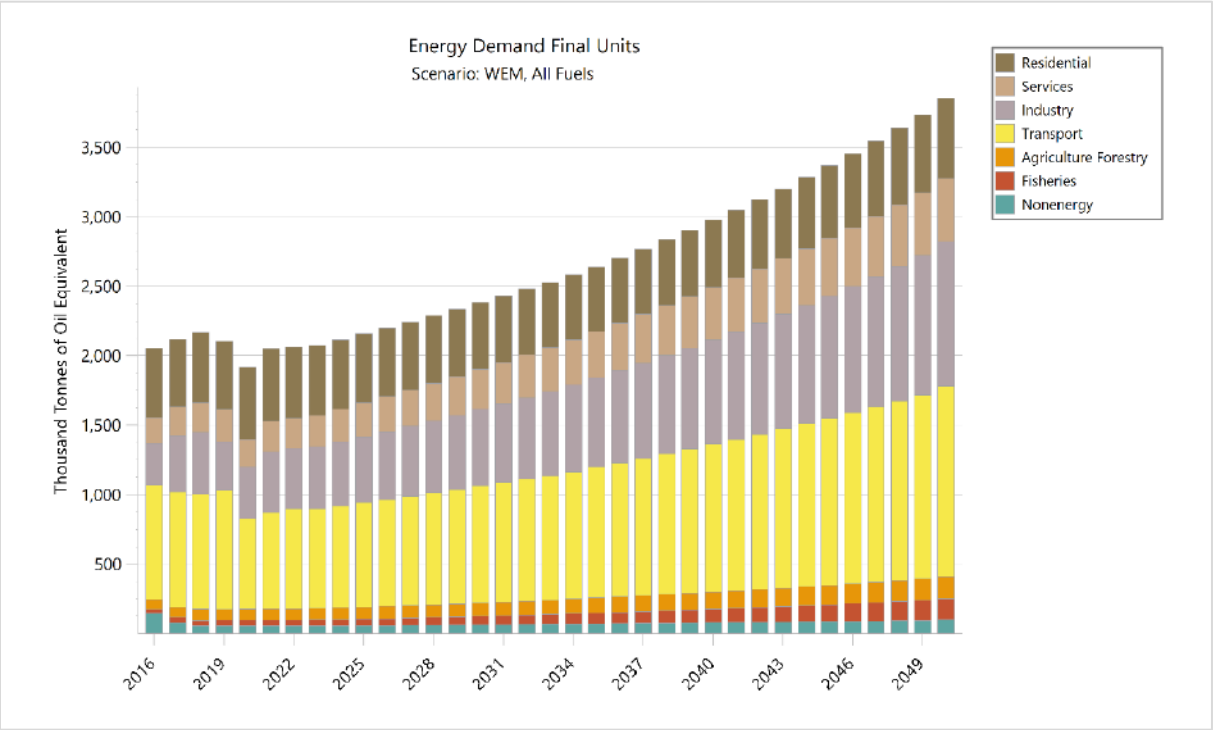

Figure 49: Final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected with existing measures until 2050

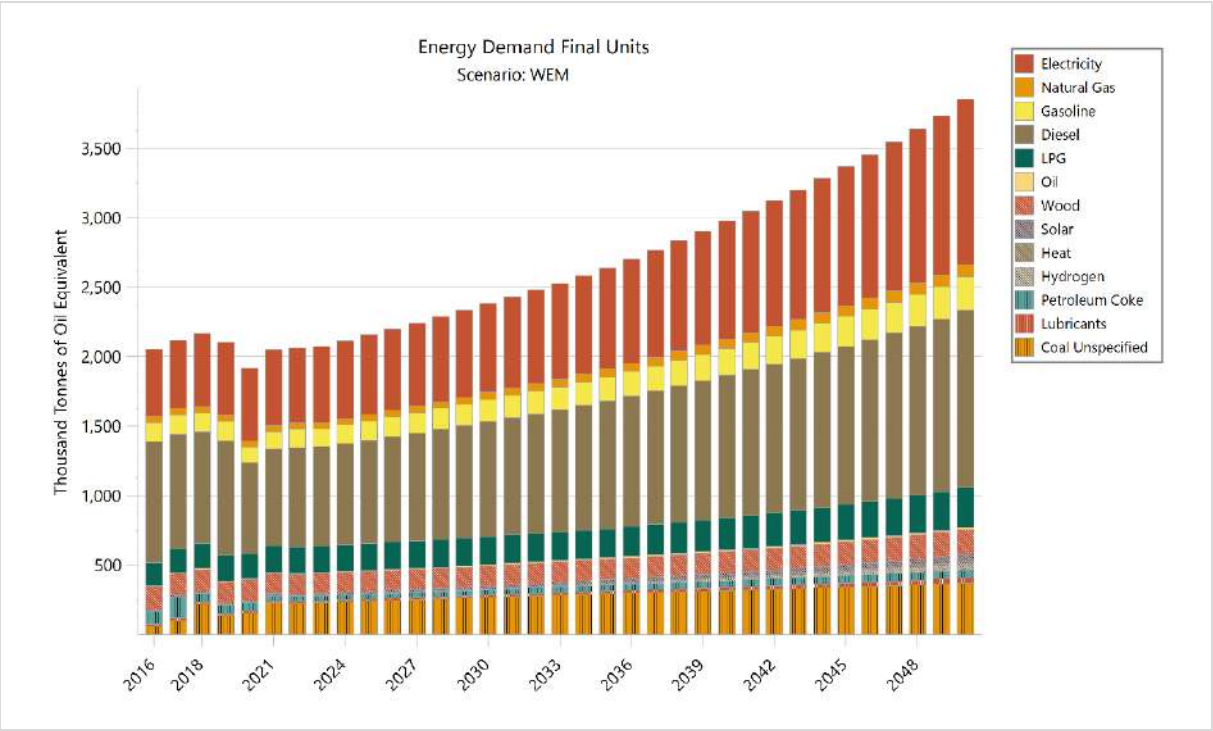

Figure 50: Fuel split underlying the final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected with existing measures until 2050

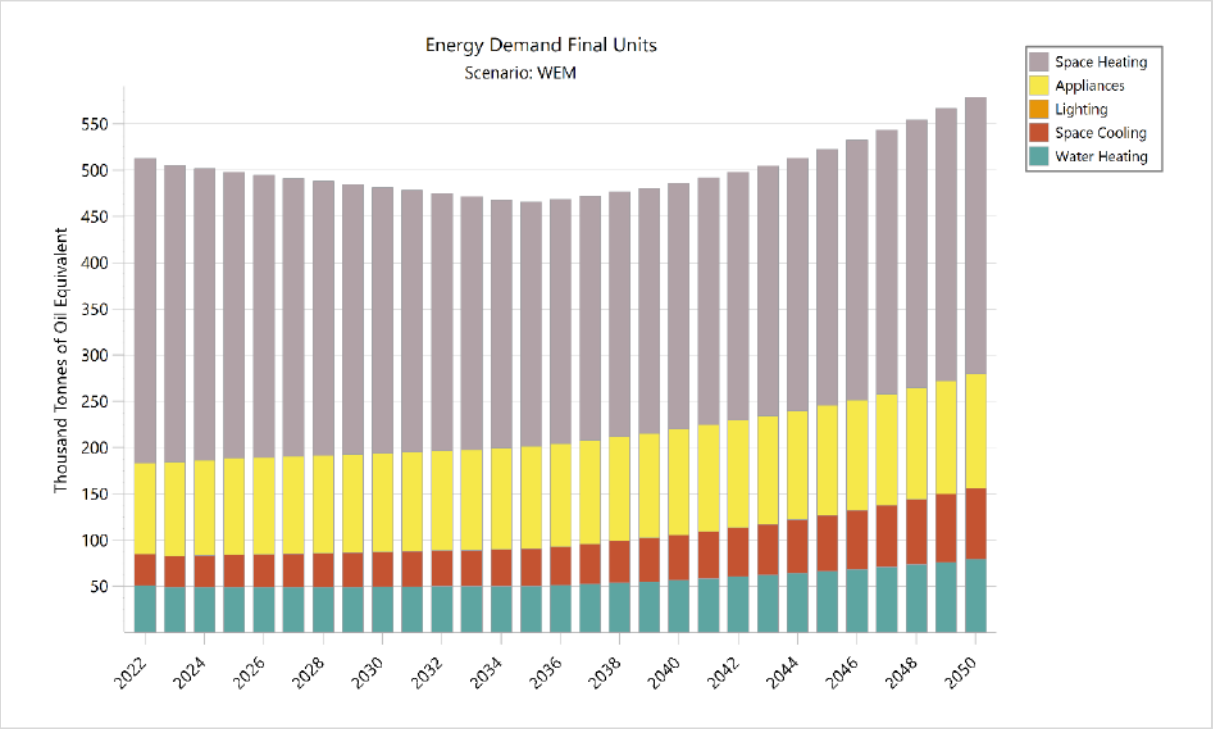

Figure 51: Final energy consumption (ktoe) for the residential sector for historic values from 2022-2023 and as projected with existing measures until 2050

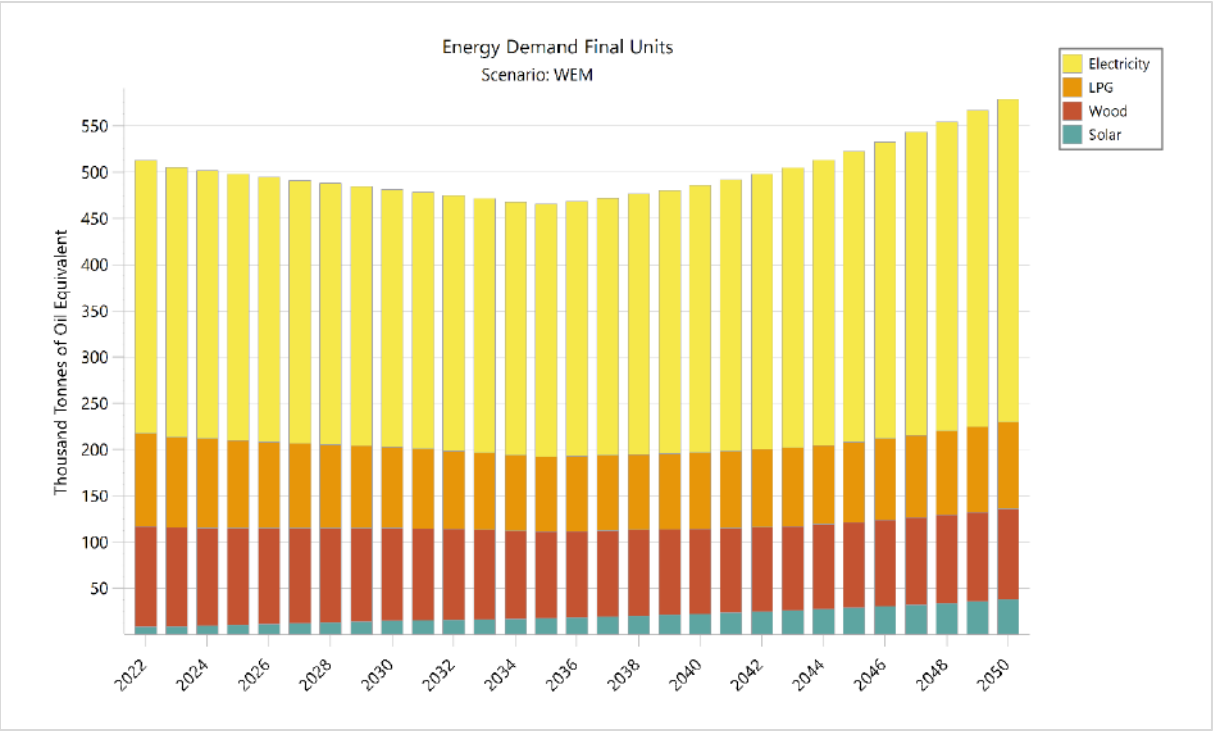

Figure 52: Fuel split underlying the final energy consumption (ktoe) for the residential sector for historic values from 2022-2023 and as projected with existing measures until 2050

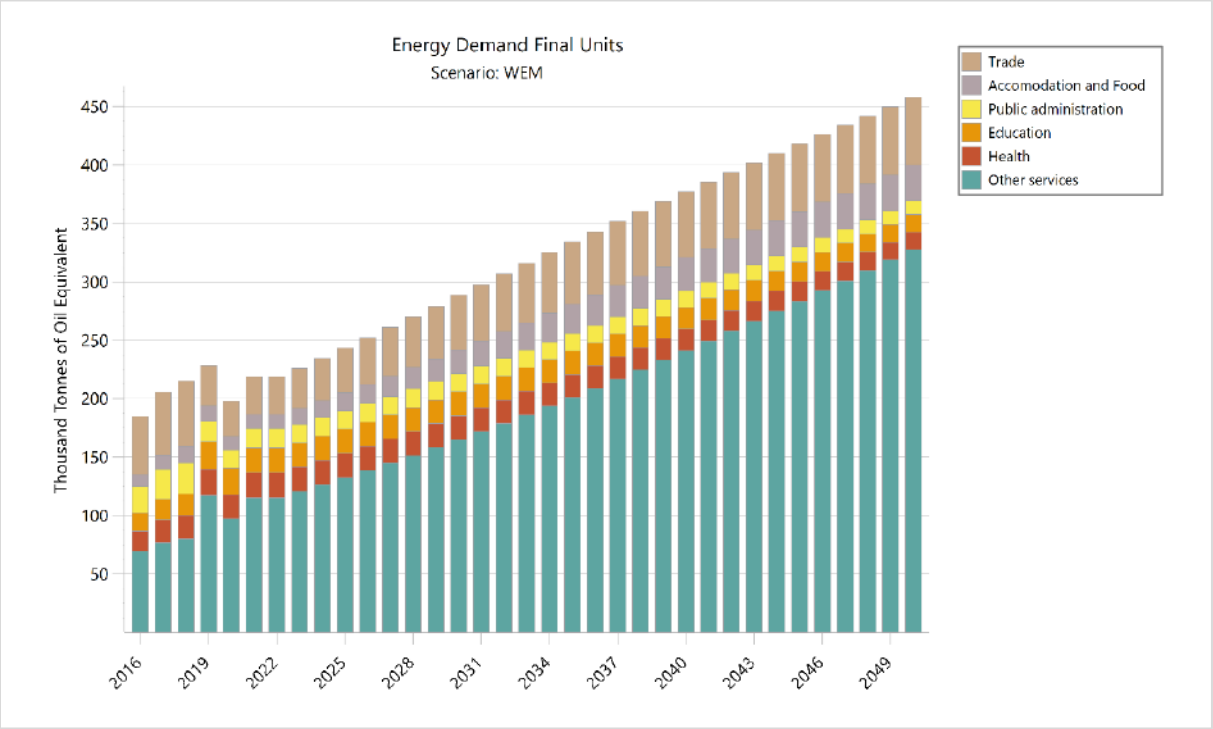

Figure 53: Final energy consumption (ktoe) for the services sector for historic values from 2016-2023 and as projected with existing measures until 2050

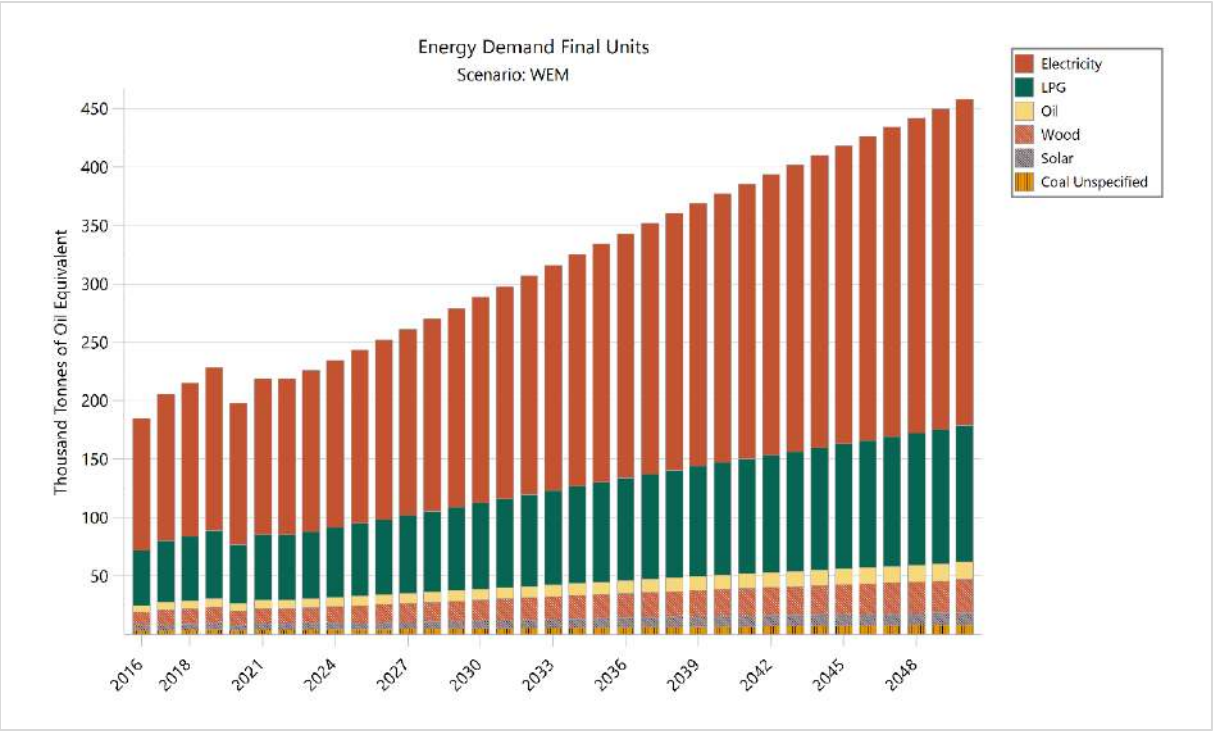

Figure 54: Fuel split underlying the final energy consumption (ktoe) for the services sector for historic values from 2016-2023 and as projected with existing measures until 2050

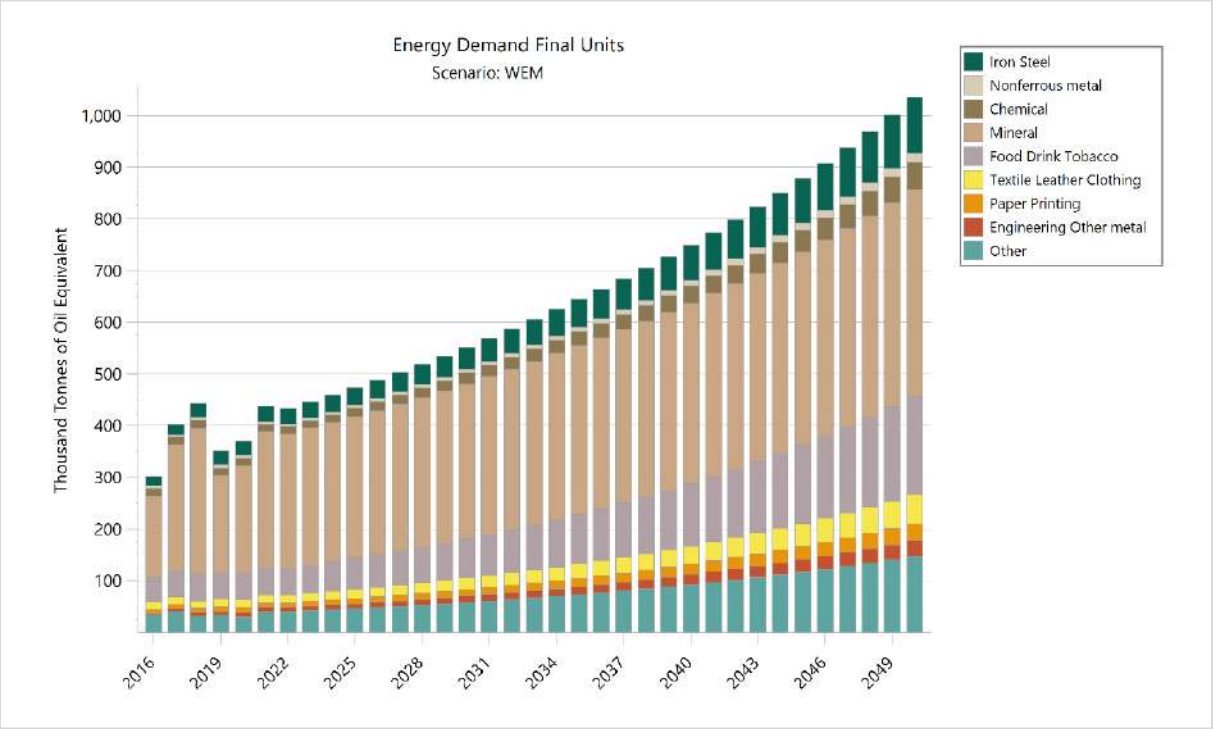

Figure 55: Final energy consumption (ktoe) for the industry sector for historic values from 2016-2023 and as projected with existing measures until 2050

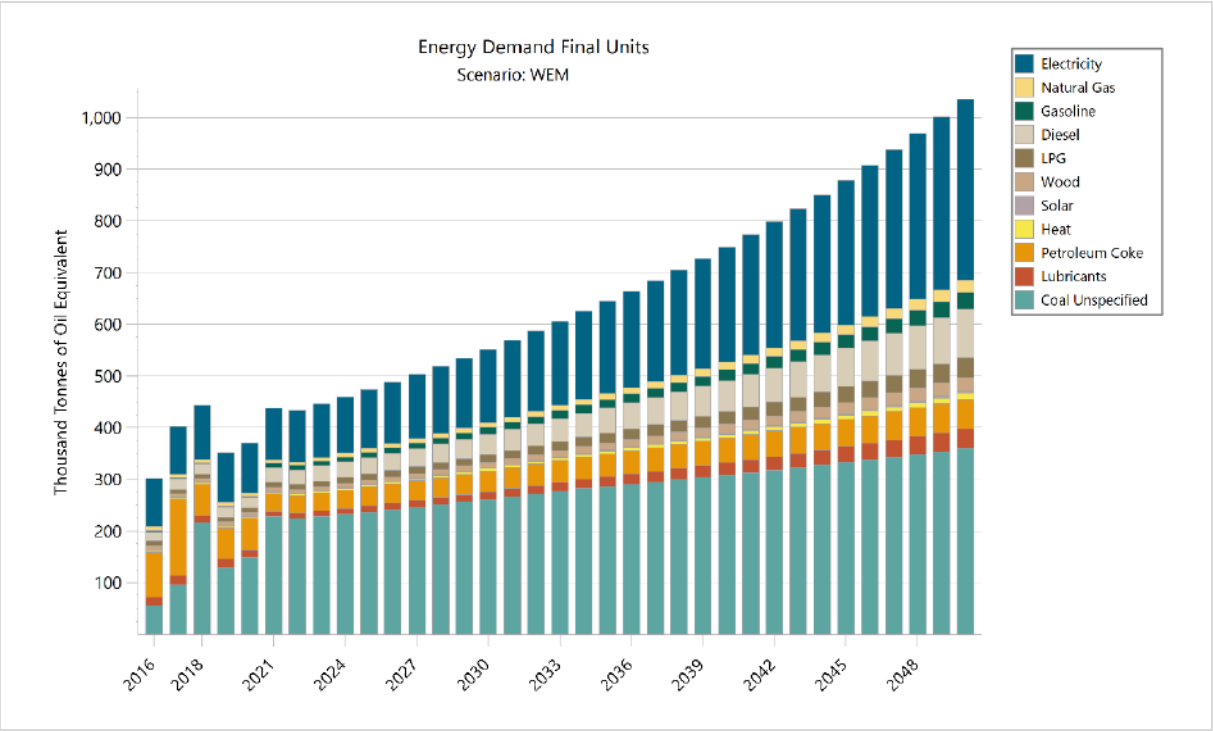

Figure 56: Fuel split underlying the final energy consumption (ktoe) for the industry sector for historic values from 2016-2023 and as projected with existing measures until 2050

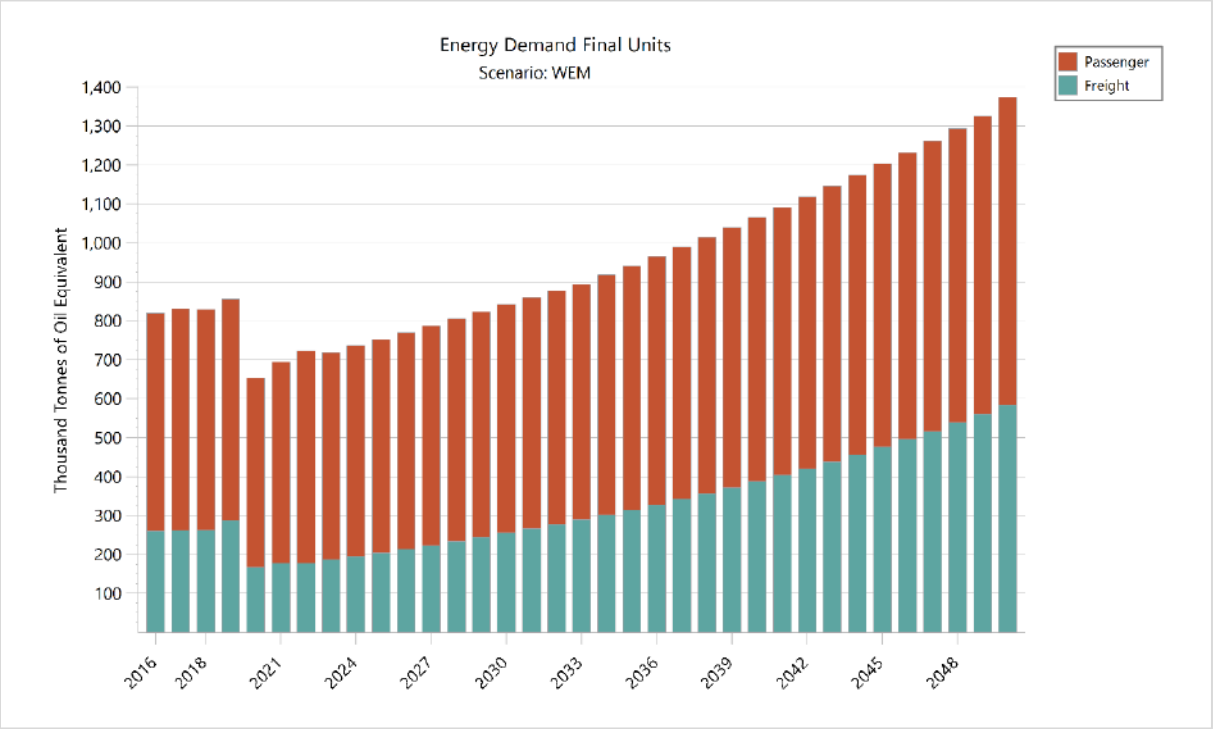

Figure 57: Final energy consumption (ktoe) for the transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

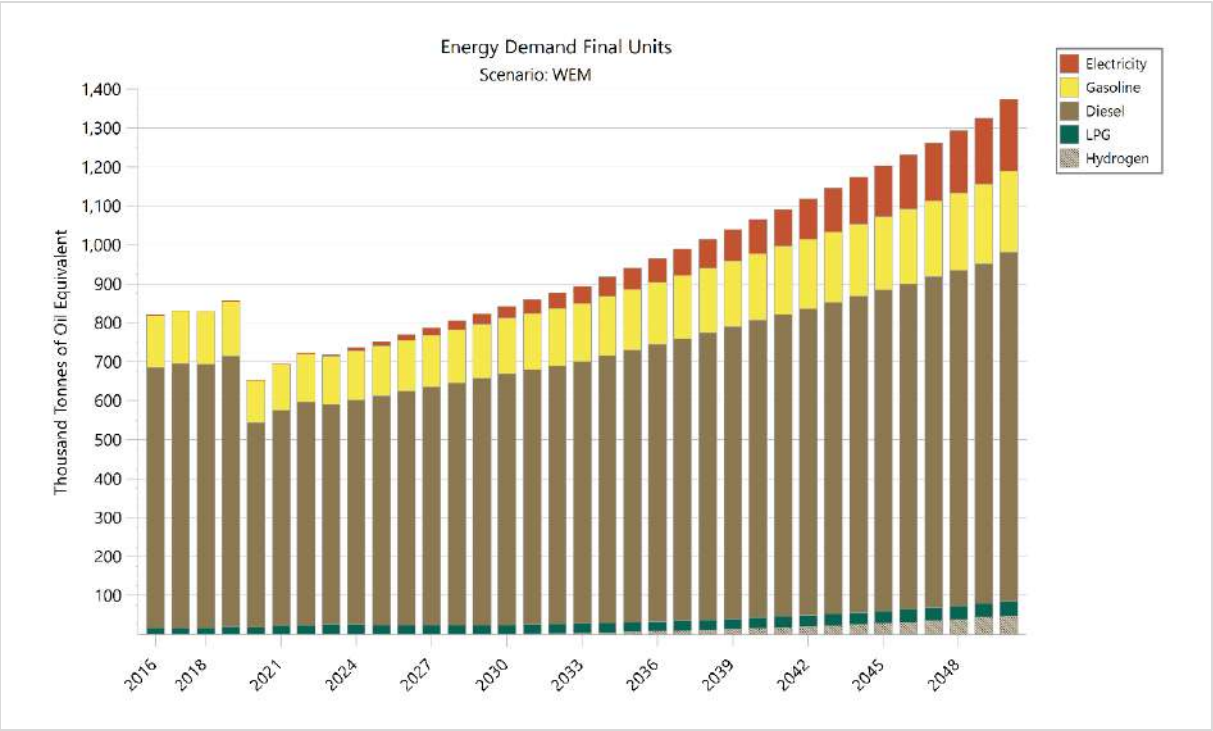

Figure 58: Fuel split underlying the final energy consumption (ktoe) for the transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

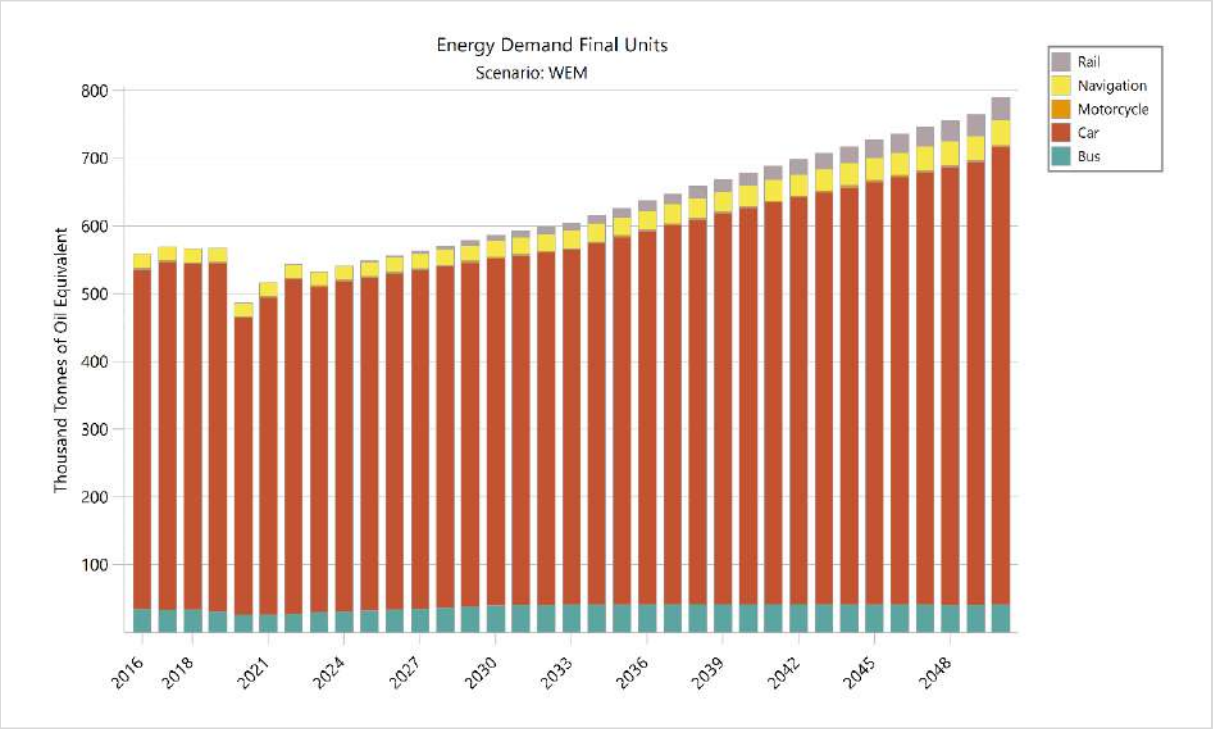

Figure 59: Final energy consumption (ktoe) for the passenger transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

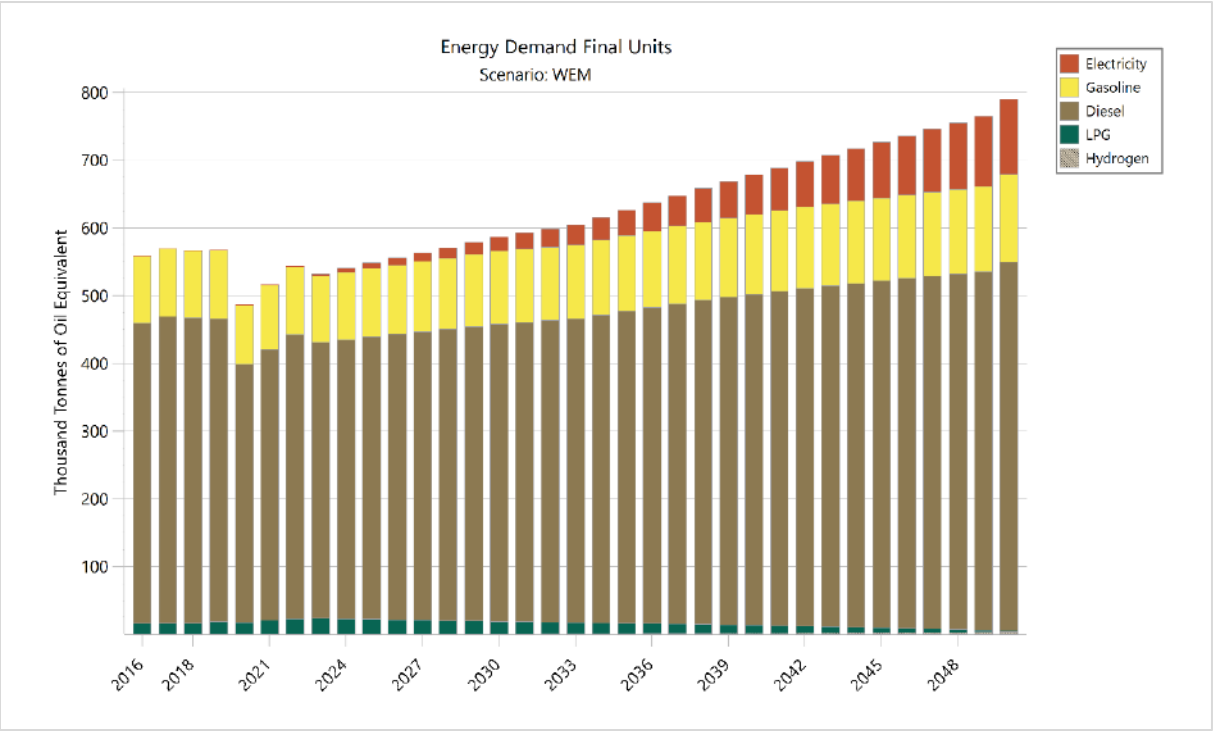

Figure 60: Fuel split underlying the final energy consumption (ktoe) for the passenger transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

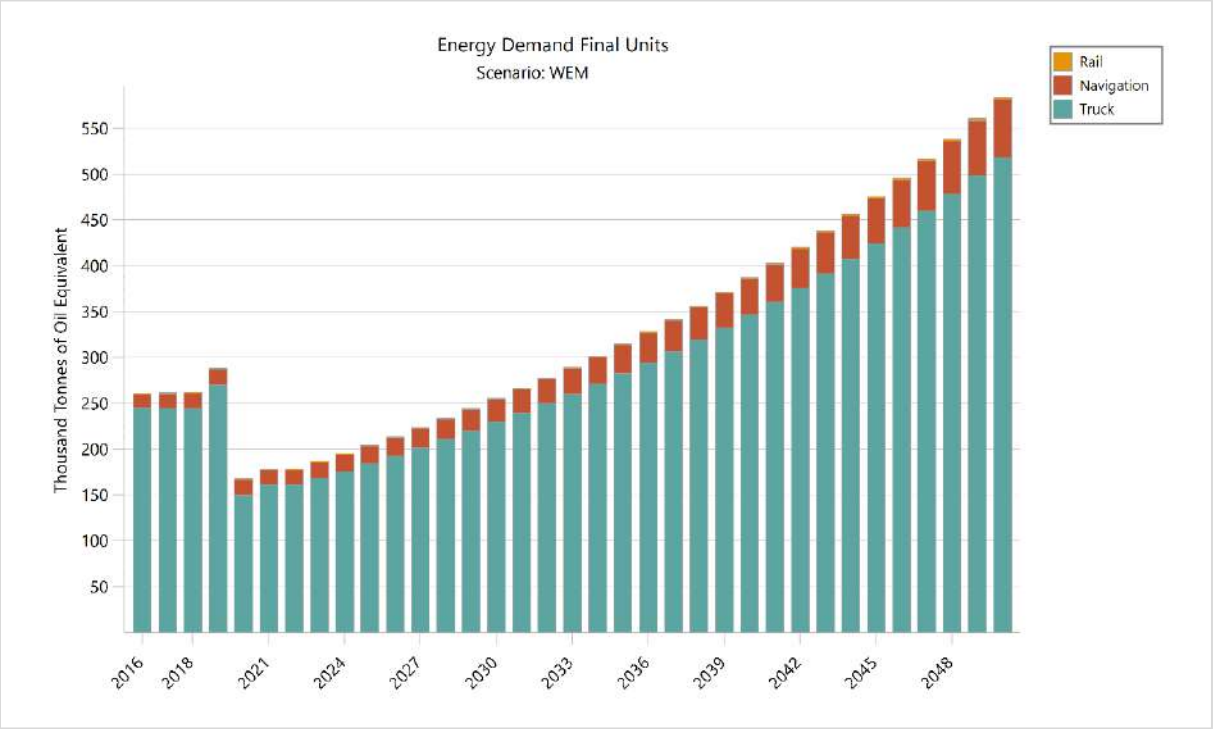

Figure 61: Final energy consumption (ktoe) for the freight transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

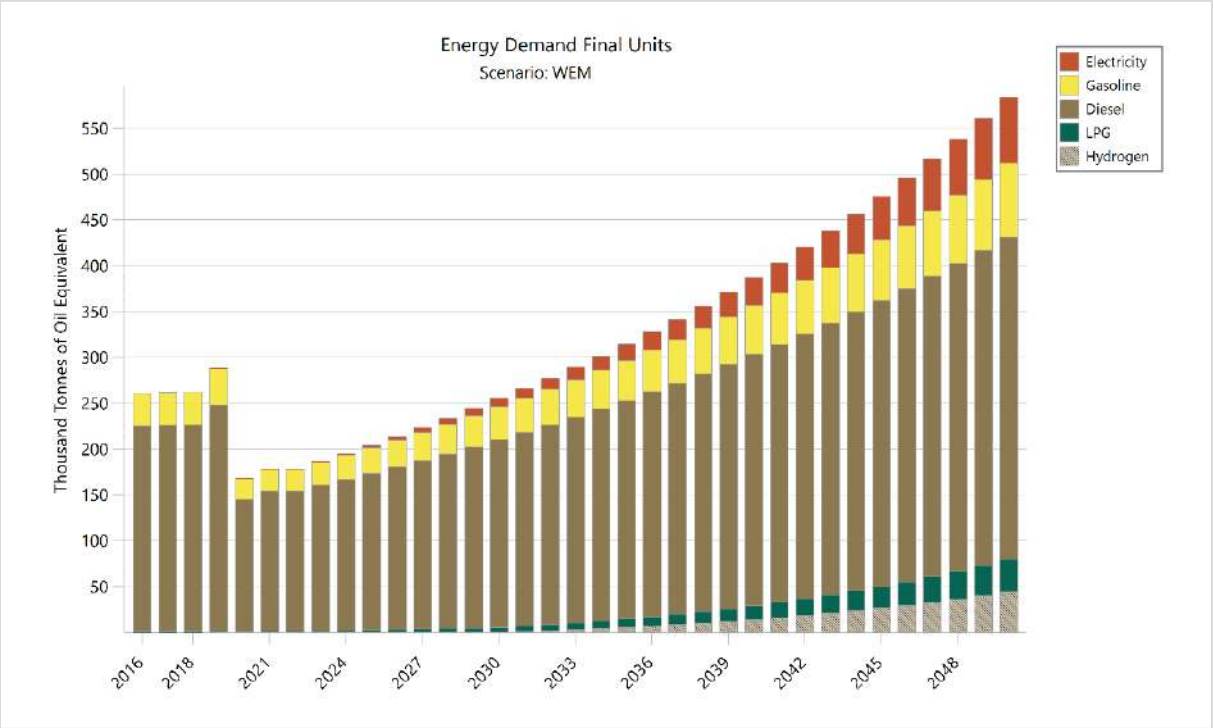

Figure 62: Fuel split underlying the final energy consumption (ktoe) for the freight transport sector for historic values from 2016-2023 and as projected with existing measures until 2050

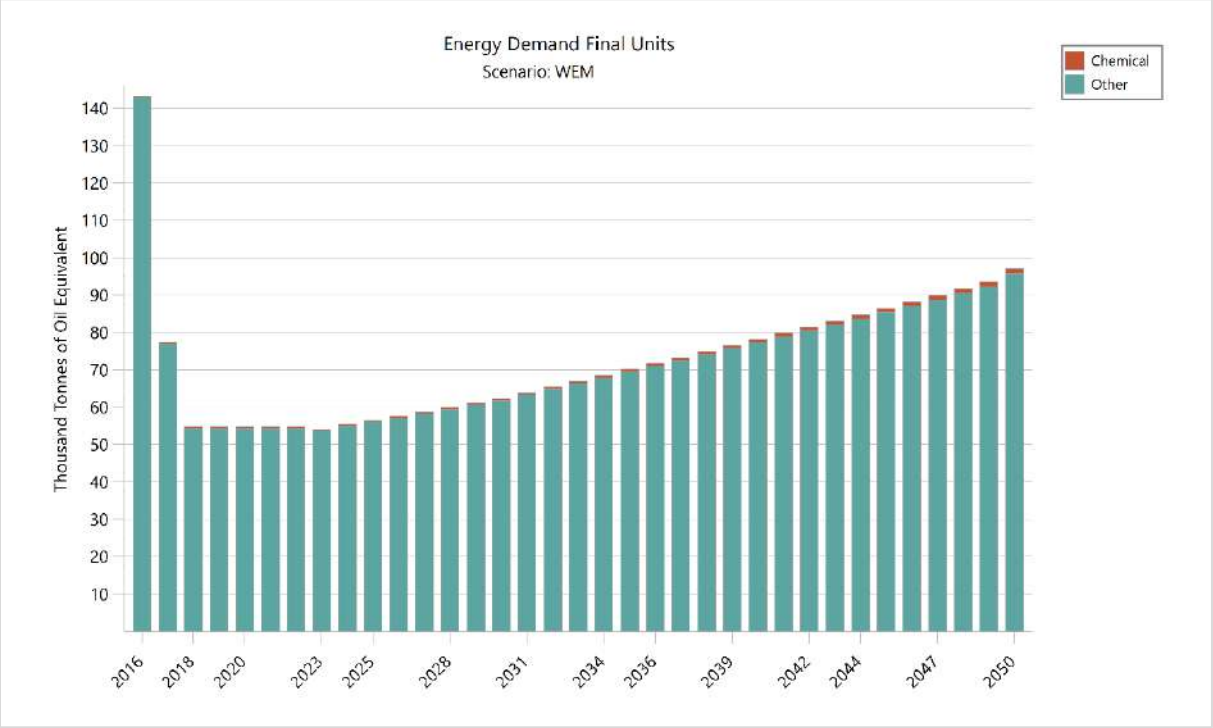

Figure 63: Final energy consumption (ktoe) for the non-energy demand of energy carriers for historic values from 2016-2023 and as projected with existing measures until 2050

The following table gives values for the final energy demand (in ktoe) for the demand sectors and subsectors as projected with existing measures.

Branch [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Residential	520.2	524.5	512.4	505.2	498.2	481.5	485.6	579.2
Services	197.7	218.8	218.8	225.7	243.3	288.4	377.1	458.2
Industry	370.6	437.2	433.0	446.0	473.5	551.6	749.8	1,036.0
Transport	653.8	694.3	721.9	718.7	752.5	842.1	1,065.6	1,374.6
Agriculture Forestry	76.8	79.5	79.5	81.5	85.5	96.7	123.4	157.6
Fisheries	42.3	41.7	41.7	43.7	47.9	60.4	96.1	152.7
Nonenergy	54.7	54.7	54.7	54.1	56.5	62.4	78.2	97.2
Total	1,916.1	2,050.7	2,062.0	2,074.8	2,157.4	2,383.0	2,975.7	3,855.4
Residential								
Space Heating	338.1	338.8	329.4	320.6	309.8	287.7	265.7	299.6
Appliances	98.2	99.0	98.4	102.0	104.9	106.8	114.6	123.3
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	32.4	34.4	34.1	33.8	34.7	37.5	48.7	77.4
Water Heating	51.4	52.2	50.5	48.8	48.7	49.4	56.6	78.8
Total	520.2	524.5	512.4	505.2	498.2	481.5	485.6	579.2
Services								
Trade	30.2	32.2	32.2	34.5	38.3	46.6	56.5	58.2
Accomodation and Food	11.4	12.2	12.2	13.1	15.2	20.4	28.4	30.6
Public administration	15.5	16.5	16.5	16.0	16.0	15.8	14.2	11.7
Education	23.1	21.3	21.3	20.6	20.6	20.3	18.4	15.1
Health	20.3	21.4	21.4	20.7	20.7	20.4	18.4	15.2
Other services	97.3	115.2	115.2	120.8	132.5	164.8	241.1	327.3
Total	197.7	218.8	218.8	225.7	243.3	288.4	377.1	458.2
Industry								
Iron Steel	27.8	29.8	29.8	31.2	34.2	43.1	68.6	109.0
Nonferrous metal	6.4	4.7	4.7	4.9	5.4	6.8	10.9	17.3
Chemical	14.3	14.4	14.4	15.0	16.5	20.8	33.1	52.6
Mineral	208.9	263.6	259.4	264.2	274.0	300.1	349.9	400.3
Ore extraction								
Food Drink Tobacco	50.0	52.1	52.1	54.6	59.9	75.5	120.0	190.8
Textile Leather Clothing	15.1	15.2	15.2	15.9	17.4	22.0	35.0	55.6

Branch [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Paper Printing	9.7	8.9	8.9	9.4	10.3	13.0	20.6	32.8
Engineering Other metal	7.8	8.4	8.4	8.8	9.6	12.1	19.3	30.7
Other	30.5	40.1	40.1	42.0	46.1	58.1	92.4	146.9
Total	370.6	437.2	433.0	446.0	473.5	551.6	749.8	1,036.0
Transport								
Passenger	486.4	516.0	543.6	532.2	548.4	586.6	678.5	790.4
Freight	167.4	178.3	178.3	186.5	204.1	255.5	387.1	584.2
Total	653.8	694.3	721.9	718.7	752.5	842.1	1,065.6	1,374.6
Passenger Transport								
Rail	0.2	0.2	0.2	-	1.3	8.7	19.2	34.0
Navigation	20.5	20.5	20.5	20.3	21.3	24.2	30.4	37.7
Motorcycle	1.5	1.6	1.7	1.7	1.8	2.0	2.4	2.9
Car	439.4	468.0	494.1	481.3	492.2	512.0	584.9	675.0
Bus	24.9	25.7	27.2	28.9	31.8	39.7	41.5	40.7
Total	486.4	516.0	543.6	532.2	548.4	586.6	678.5	790.4
Freight Transport								
Rail	1.2	0.7	0.7	0.7	0.8	1.0	1.6	2.6
Navigation	16.7	16.7	16.7	17.5	19.2	24.4	39.2	62.9
Truck	149.6	160.9	160.9	168.3	184.0	230.1	346.2	518.7
Total	167.4	178.3	178.3	186.5	204.1	255.5	387.1	584.2
Non-energy								
Chemical	0.4	0.4	0.4	0.4	0.4	0.6	0.9	1.4
Other	54.4	54.4	54.4	53.7	56.1	61.8	77.3	95.8
Total	54.7	54.7	54.7	54.1	56.5	62.4	78.2	97.2

Table 42: Final energy consumption (ktoe) for different sectors and subsectors for historic values from 2020-2023 and as projected with existing measures until 2050

Cost-optimal levels of minimum energy performance requirements resulting from national calculations, in accordance with Article 5 of Directive 2010/31/EU

By 2020, Decision No. 256, dated March 27, 2020, was approved, establishing the methodology for calculating the cost optimal levels associated with the minimum energy performance requirements for buildings, units, and building elements. This decision facilitated the implementation of a cost optimal level study for various building typologies in Albania. The study, conducted by the Polytechnic University of Tirana, determined the minimum energy performance requirements for both new and existing buildings that would undergo major renovations.

Currently, the Ministry responsible for energy is undertaking an additional cost optimal study with the support of KfW, which has contracted the Fraunhofer Institute in Germany to provide updated insights. This new study is anticipated to be completed within this year.

4.4 Dimension Energy Security

4.4.1 Current energy mix, domestic energy resources, import dependency including relevant risks

The current electricity mix of Albania consists almost exclusively of hydropower. At a currently still very low but rising level, solar power is entering the mix. Fossil energy sources, however, are entirely absent from the Albanian electricity generation sector. Although a project for an oil powered thermal power plant in Vlora with 97 MW capacity was completed in 2011, it never entered into operation. A revitalisation of the plant after refurbishment for natural gas usage is planned as part of a policy of the scenario with existing measures.

Critical for energy security is the absence of an electricity production reserve using another technology to hedge for dry years with little hydroelectric output. In the past, this has led to frequent spikes in electricity imports, last observed in 2017 when the net import share in gross energy consumption rose to 39% with net exports of 1% in both 2016 and 2018.

Figure 64 shows the total gross inland consumption, remaining rather constant with a slightly increase. Generation, net imports and the import share (left y-axis) are also shown.

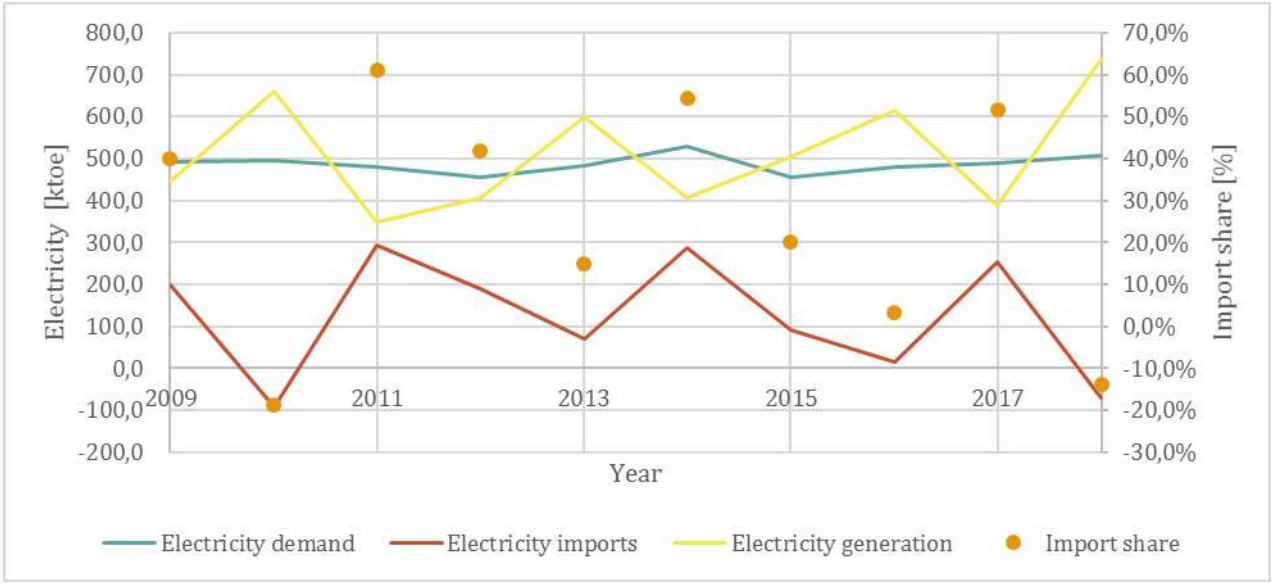

Figure 64: Electricity import share (historical data 2004 - 2018)

Apart from the electricity sector, the supply of fossil fuels and fossil fuel products plays a crucial role in Albanian energy security. Despite being a crude oil producer, the country is strongly reliant on import of refined oil products due to low and aging refinery capacities. Figure 65 clearly shows how crude oil production is significantly higher than the production of refined oil products.

Figure 66 shows net imports of fuel products. Negative values mean that exports exceed imports while positive values mean that imports exceed exports. As can be seen, crude oil is largely exported while refined oil products are mainly imported. This corresponds to a strong import dependency.

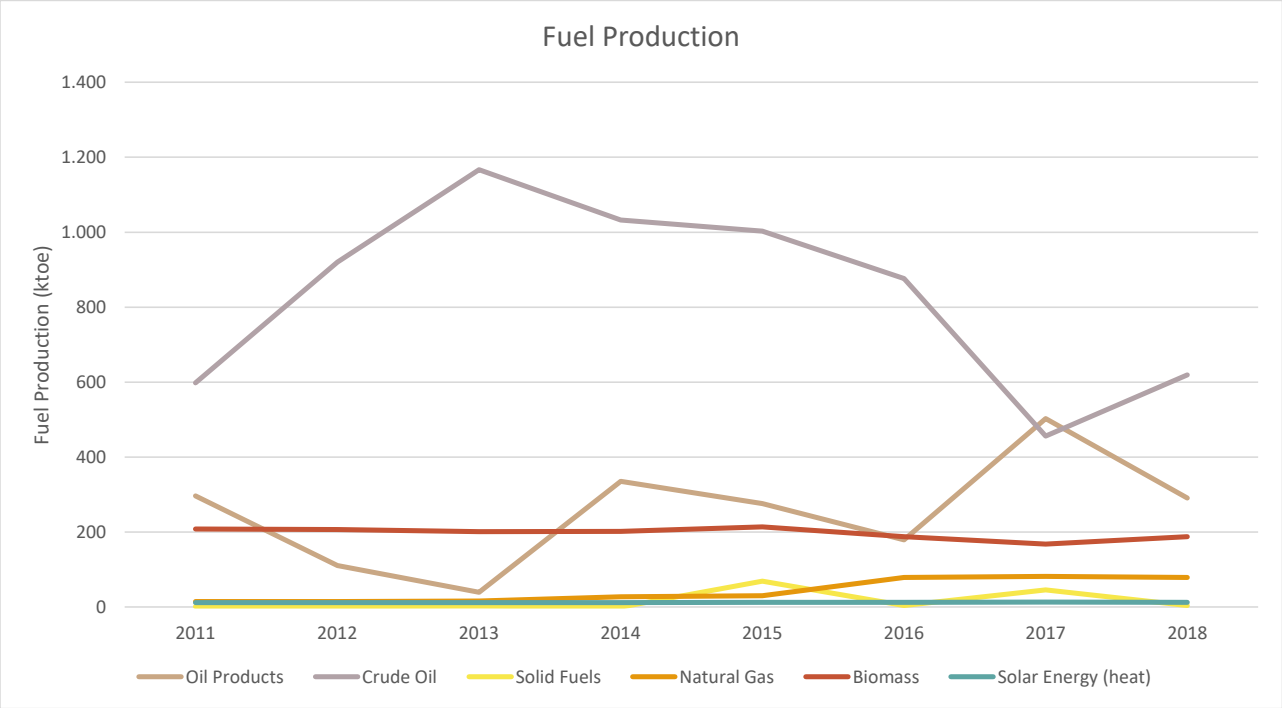

Figure 65: Fuel Production (historical data 2011 - 2018)

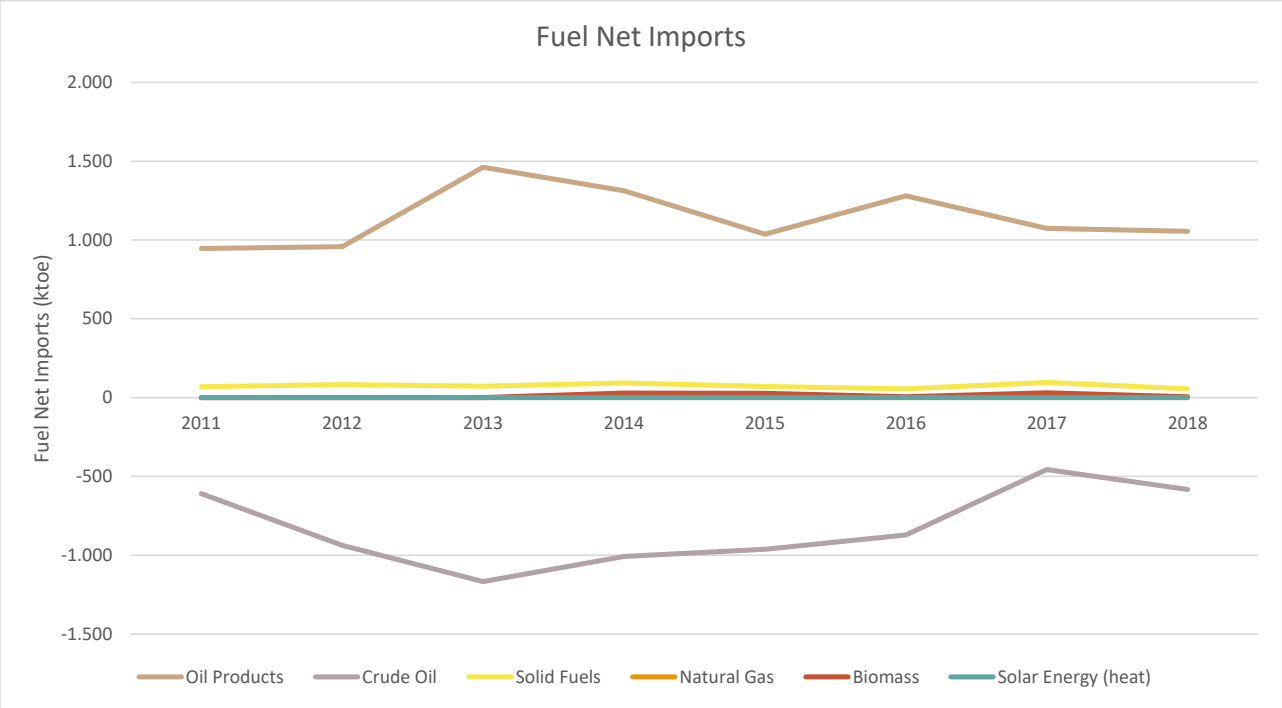

Figure 66: Fuel Net Imports (historical data 2011 - 2018)

4.4.2 Projections of development with existing policies and measures at least until 2040 (including for the year 2030)

For projections from 2019 to 2040, the gross inland consumption of electricity is expected to rise continually up to 2050. The import dependency in years with low hydroelectric output is recurring issue in the scenario considering existing measures. In the historic data, years with low hydroelectric output occurred on average every five years, last in 2017. The model therefore implements such years every five years starting from 2022 as can be seen in Figure 67 by the spikes in net import share (calculated relative to electricity demand). Apart from these years, net imports are zero except towards the end of the 2030s, when the import share is continually rising signifying a lack of production capacity to match the electricity demand. This is also influenced by changes in climate conditions, as the precipitation levels are expected to decrease leading to by 20% in output for run-of-river hydroelectric plants and 15% in reservoir hydroelectric plants under 2010-levels until 2050 (World Bank ESMAP 2009).

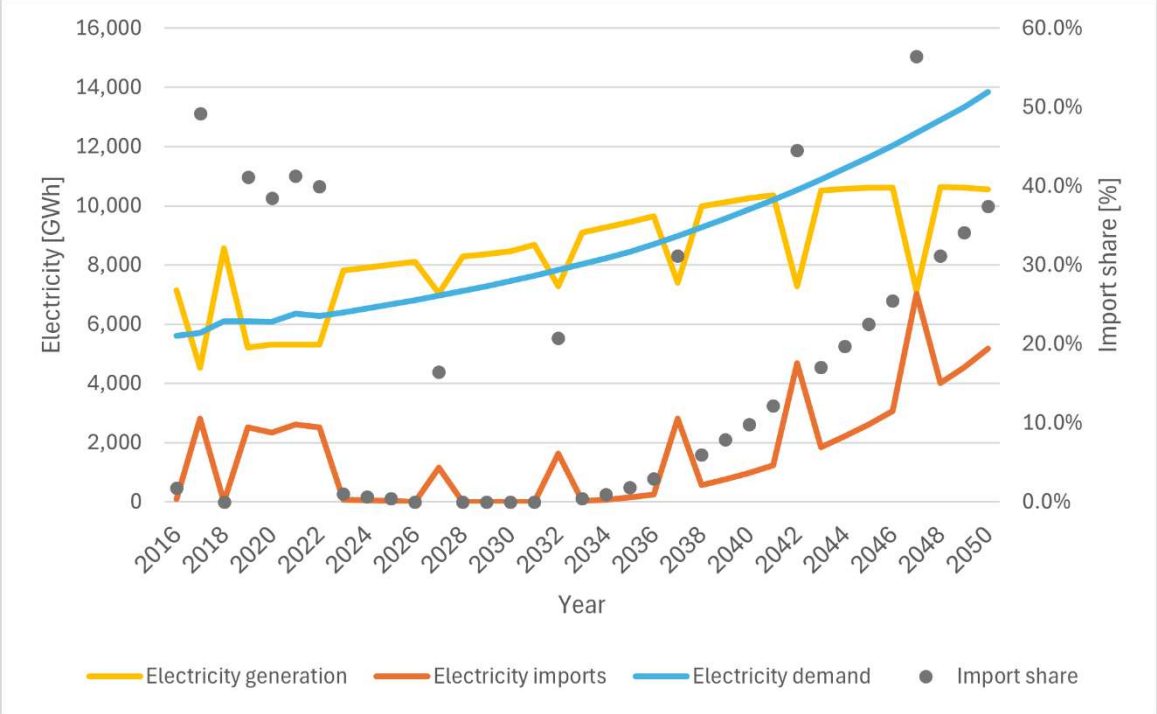

Figure 67: Electricity generation, demand and imports for the scenario with existing measures. (projection 2023 - 2050)

[GWh]	2020	2021	2022	2023	2025	2030	2040	2050
Electricity demand	6,083.0	6,347.0	6,281.3	6,388.8	6,671.2	7,456.1	9,875.5	6,083.0
Electricity generation	5,313.9	5,313.9	5,313.9	7,817.3	8,002.6	8,472.9	10,253.1	5,313.9
Electricity imports	2,340.2	2,619.8	2,508.4	63.3	30.1	-	969.1	2,340.2
Import share	38.5%	41.3%	39.9%	1.0%	0.5%	0.0%	9.8%	38.5%

Figure 68: Electricity generation, demand, and imports for the scenario with existing measures.

In fuel production, an existing policy to refurbish the existing oil refineries does not change the capacity of fuel production as it only affects air pollutants. The policy will take effect in 2025 but will not affect the output, as shown in Figure 69.

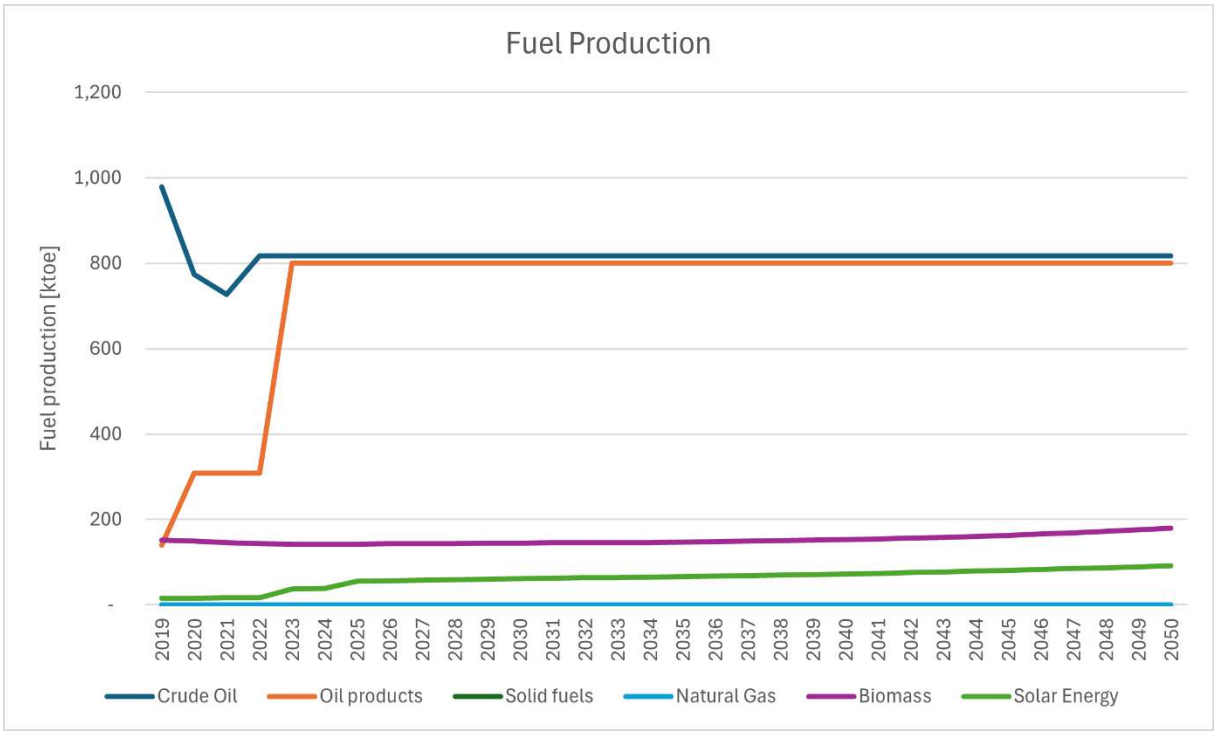

Figure 69: Fuel production (projection 2019-2040)

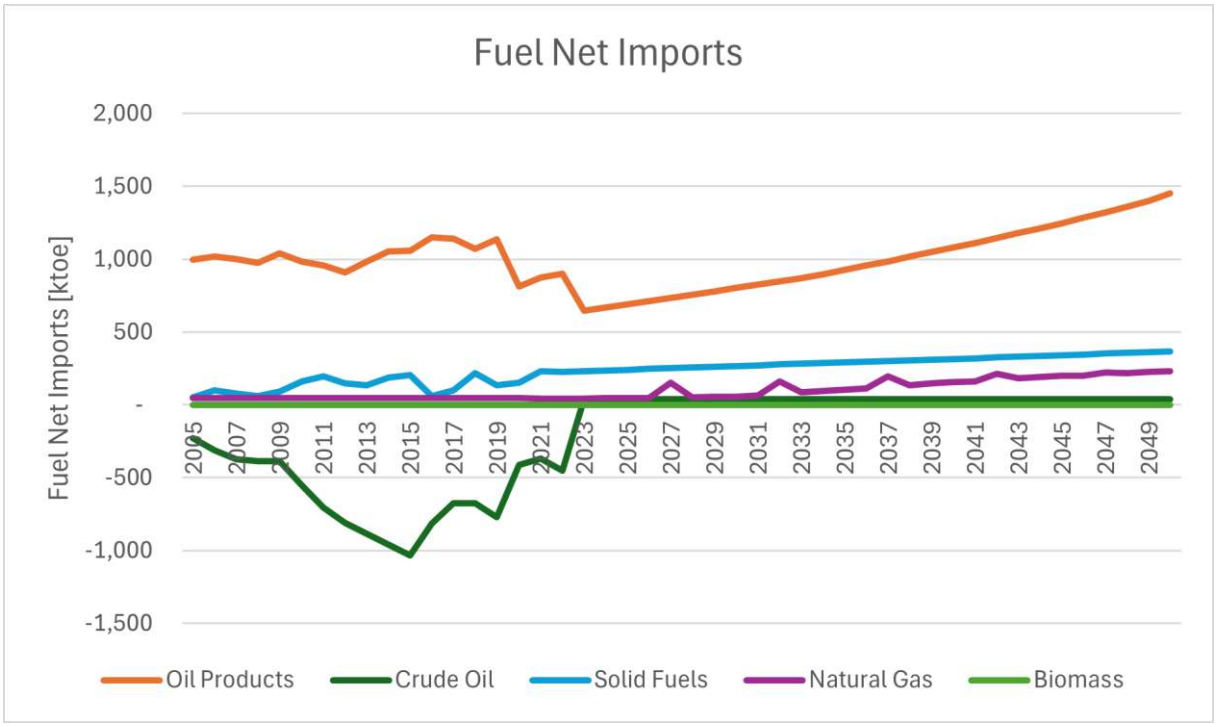

Figure 70: Fuel Net imports (projection 2019-2040)

4.5 Dimension internal energy market

4.5.1 Electricity interconnectivity

Current interconnection level and main interconnectors

Albania has six interconnection lines with a total installed capacity of 4096 MVA with all neighbouring political entities except North Macedonia (Energy Community Secretariat 2021) as shown in Table 43.

Voltage Level (kV)	Bus 1 (domestic)	Bus 2 (non-domestic)	From Albania to	Max active power (MW)
400	Zemblak	Kardia	Greece	1215
400	Tirana 2	Podgorica	Montenegro	1197
400	Komani	Kosova B	Kosovo	1185
220	Koplik	Podgorica	Montenegro	270
220	Fierzë	Prizreni 2	Kosovo	270
150	Bistrica	Myrtos / Igumenice	Greece	

Table 43: Existing cross-border interconnectors. Source: (Energy Community Secretariat 2021)

In the years between 2004 and 2018, electricity imports using these interconnectors varied between 370 GWh in 2005 and 3251 GWh in 2014 (average 1815 GWh). Exports varied between 0 and 2934 GWh (average 325 GWh). The interconnection usage (imports + exports) varied between 42 GWh in 2016 and 4920 GWh in 2010 (average 2140 GWh). Figure 71 shows the geographic distribution of the main transmission lines and interconnectors.

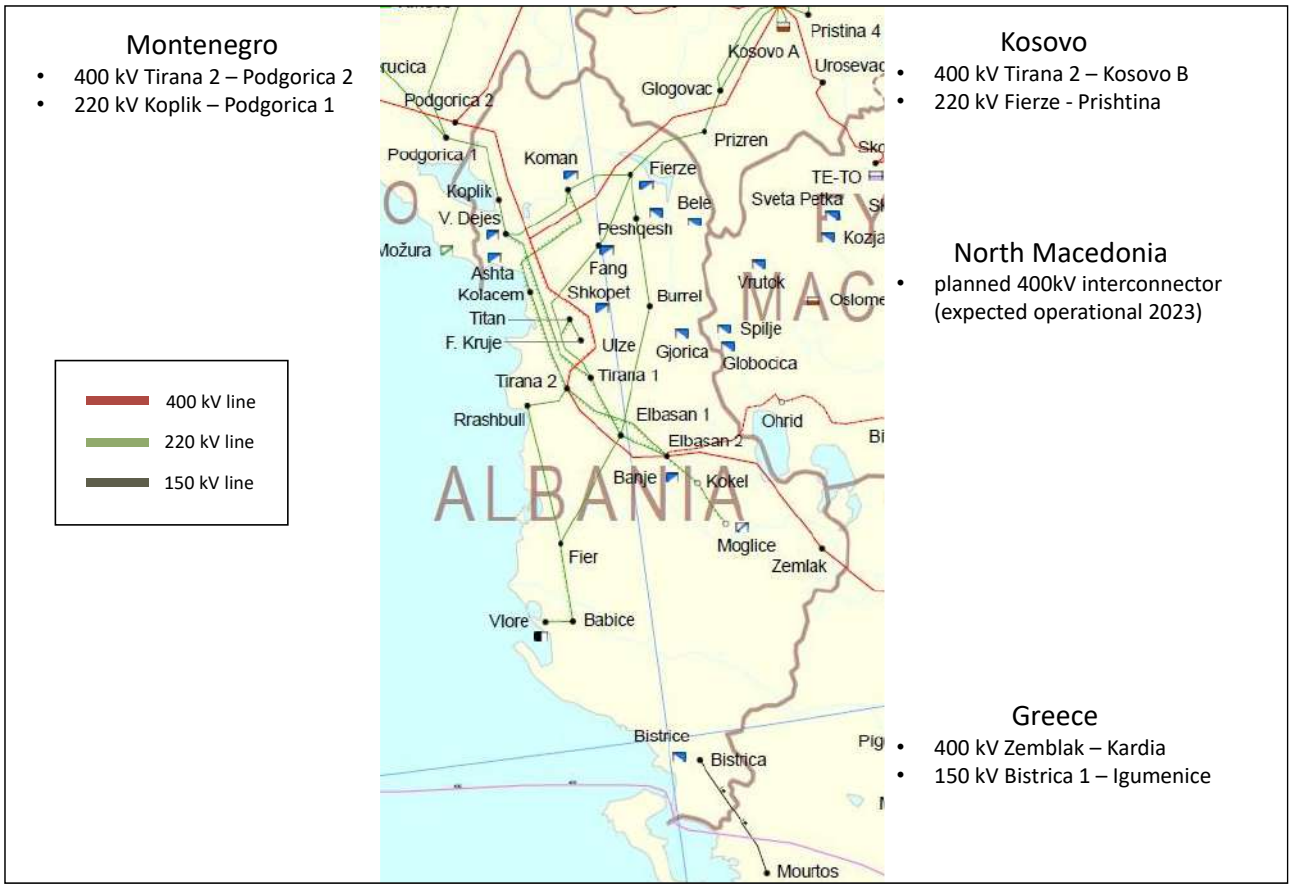

Figure 71: Map of main transmission lines and interconnectors. Source: own representation based on OST 2018

Figure 72 shows a scheme of cross-border interconnectors including nominal interconnector transmission capacity (max active Power in MW) and the maximum cross-border capacity given to market participants for commercial use (NTC). Of note is that the start of operation of the 400 kV line Tirana 2 - Komani - Kosovo B in December 2020 allowed the nominal transmission capacities to increase at the borders with Kosovo and Greece from previously 250 MW to 400 MW.

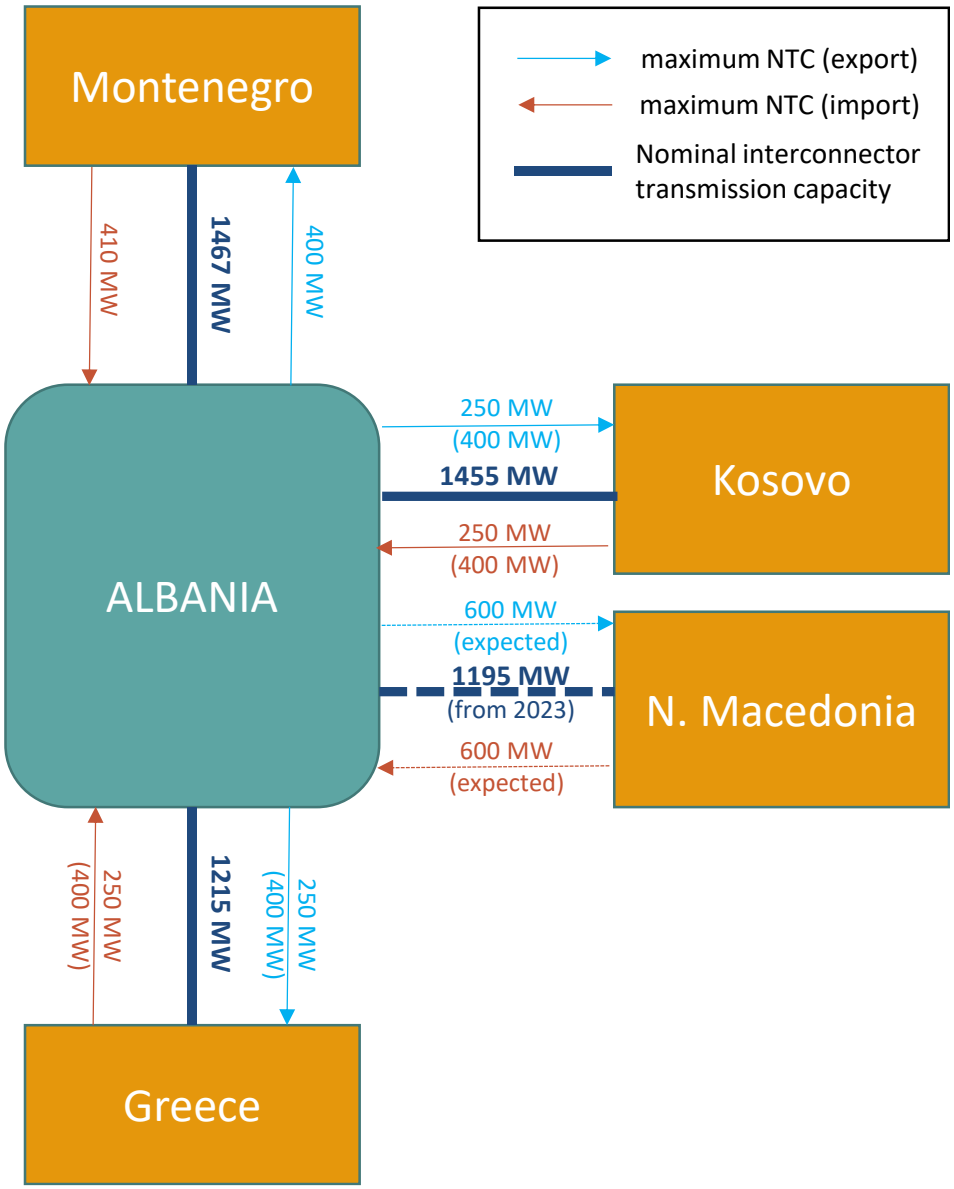

Figure 72: Interconnector capacities. Source: Energy Community Secretariat 2021

For the calculation of the interconnectivity target, the NTC in import direction is put in relation to the renewable power generation capacity. As shown in Table 44, it follows that the interconnection target of 15% until 2030 has been reached already and will continue to be reached at least until 2030 in the scenario with existing measures.

Year	2019	2021	2030	2040
Renewable Capacity (MW)	2 343	2 623	3307	3 307
Max NTC Import (MW)	910	1 210	1 810	1 810
Interconnection Level	39%	46%	55%	55%

Table 44: Interconnection level as calculated for the scenario with existing measures

Projections of interconnector expansion requirements (including for the year 2030)

As already mentioned in Ch.1, the only neighbouring country currently not connected to the Albanian transmission network via interconnectors is North Macedonia (apart from Italy). In February 2020, an agreement has been signed for the construction of a 400 KV transmission line with a maximum active power of 1195 MW from Fier through Elbasan to Bitola in North Macedonia. The connection will support the potential to build a regional energy market in South East Europe and create trading opportunities with countries between Bulgaria and Italy.

In addition, based on the forecasts and large development potentials of renewable energy sources, in the long-term plans of the Albanian TSO, it is foreseen the construction of a new 400 kV interconnection line Albania (Fieri) – Greece (Arachtos), overhead and with a single circuit, with a length of about 125 km (see also Ch.1, section “Key issues of cross-border relevance").

4.5.2 Energy transmission infrastructure

Key characteristics of the existing transmission infrastructure for electricity and gas

To date, Albania does not have internal natural gas transmission infrastructure. However, the Transadriatic Pipeline (TAP) has started operation in late 2020 and connects Italy, Albania and Greece to the Trans-Anatolian Pipeline in Turkey and the South Caucasus Pipeline in Azerbaijan and Georgia. This way, the pipeline can deliver up to 10 billion cubic metres of natural gas from Azerbaijani gas fields to Italy, Albania, Greece and (through an additional interconnection point) to Bulgaria. Due to no existing internal infrastructure, by the time of writing (October 2024), natural gas from the pipeline has not been used in Albania. The following analysis is therefore confined to the electricity transmission infrastructure. Information stems mainly from the Albanian Transmission Network Development Plan by the transmission network operator OST (OST 2018).

The Power Transmission System of Albania operates fifteen Substations (400 kV, 220 kV, and 150 kV) as well as

445.7 km of 400 kV lines,

1250 km of 220 kV lines, 3

4.4 km of 150 kV line and

1606.7 km of 110 kV lines.

The main hydroelectric power plants of “Drin River Cascade” (Fierza, Koman and Vau Dejës) in the Northern part of Albania are connected in the 220 kV transmission network, which is also the main connection to the biggest load in the area of Tirana, Elbasan, Durrës and Fier. The 110 kV network covers all urban areas of the country in order to supply the Distribution System that nowadays is operated by OSHEE and is 100% state owned. (OST 2018)

More than 70% of the total generated installed capacity is connected in the 220 kV network. Autotransformers 220/400 kV have a capacity of 1200 MVA and the 110 kV grid is connected with the 400 kV Rings by two 150 MVA Autotransformers installed in the south-eastern part of the network in Zemblak Substation.

Transmission of electricity from the main sources of generation to the major centres of consumption is done through the 220 kV grid and further through the 220/110 kV transformation (2390 MVA). The 110

kV network that supply all the 110 kV substations previously represented the main load nodes while actually are connected around 20% of the installed generation capacity (OST 2018).

Figure 73 shows the principal structure of the transmission network in Albania.

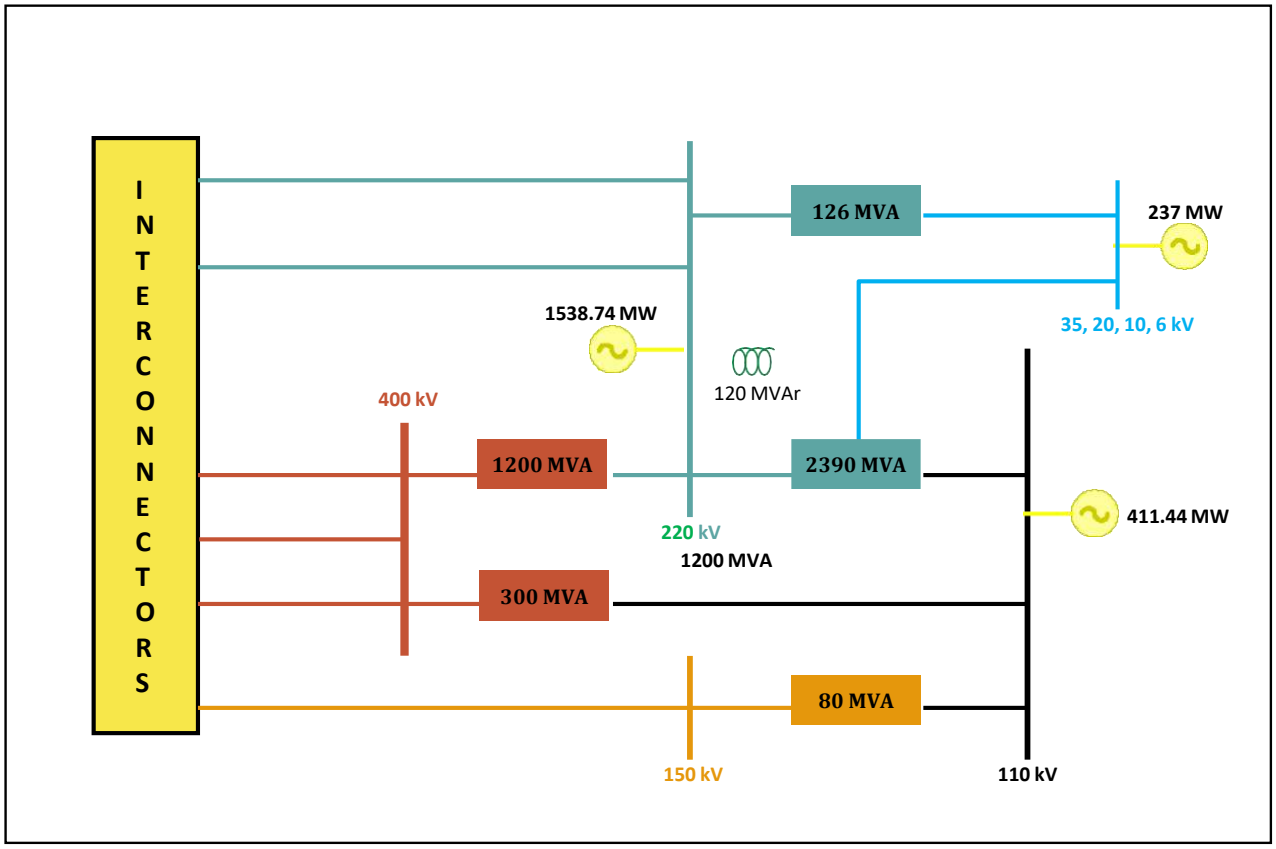

Figure 73: Albanian Transmission System Structure: Source: OST 2018

Projections of network expansion requirements at least until 2040 (including for the year 2030)

During recent years important projects have been realized that have significantly reduced the amount of non-served electricity and the transmission losses. From 2005 to 2017, electricity losses in the transmission networks have fallen from 4.56% to 2.08%. (OST 2018).

According to model calculations from the WEM scenario, the annual increase in energy demand amounts to 1-2% between 2019 and 2040. In sum, electricity demand increases from 512 ktoe in 2019 to 533 ktoe in 2030 and 621 ktoe in 2040. At the same time, generation capacities increase from 2343 MW in 2019 to 2965 MW in 2030 and 3228 MW in 2040.

The transmission network has to meet the increasing load and thus expansion and further increase in efficiency are necessary. The Albanian Network Development (OST 2018) foresees a number of projects for improving the transmission network as presented in Table 44.

Project	Benefits
Extension of Koman Substation, with a new AT-345 MVA 400/220 kV, 400 kV double busbar and two 400 kV line bays.	• This investment is necessary to enable a better balance between the 220 kV and 400 kV grids by distributing the power flows generated by Koman HPP with the lowest losses; • Significant improvement will also be felt in the voltage profile during good hydrology.
New 220 kV Double Circuit Transmission Line Tirana2 – Rrashbull	• This project is crucial for the Albanian transmission system because it relates to the following problems; existing line loaded at maximum, N-1 security criteria not fulfilled, high transmission losses, and significant amounts of non-served electricity. • Will improve the supply of electricity in a very broad geographical area that includes the district of Durres, Kavaja and throughout the southern part of Albania. • The project fulfills the requirements of the Albanian and European legislation regarding the environment protection. • The proposed investment is expected to have a positive impact on the total economy and to improve the quality of life for the Albanian population. • The project will increase opportunities for tourism development due to the improved power supply.
Construction of the 400/110 kV Tirana3 Ss and reinforcement of 110 kV Tirana Ring	• Transit of the flow from 400 kV interconnection grid to 220 kV national grid; • Increase the security of system operation; • Transit of the flow from 400 kV interconnection grid to 220 kV national grid; • Increase the security of system operation considerably; • Greater quality of electricity supply as well as a more reliable supply for the Tirana area; • Decrease the losses in the transmission network; • Reduction of the non-served electricity. • The project fulfills the requirements of the Albanian and European legislation regarding the environment protection.

Table 45: Ongoing and planned transmission network projects. Source: OST 2018

4.5.3 Electricity and gas markets, energy prices

Current situation of electricity and gas markets including energy prices

Electricity and gas markets are described in the respective section in Chapter 1. The Albanian Power Exchange (ALPEX) was created in 2020 and went live on 12 April 2023.

On 1 February 2024, the Albanian Power Exchange (ALPEX) held its first day-ahead auction for electricity delivery in Kosovo, which marked the first Market Coupling within the contracting parties of the Energy Community. Allocation of cross-border capacities for the market participants in our region, comes from the Coordinated Auction Office SEE CAO in Podgorica.

Electricity prices are still regulated but should be gradually liberalized once legislation is implemented.

Concerning the gas price, there is, for the moment, no retail market for gas.

Projections of development with existing policies and measures at least until 2040

The effect of the projections of the development of the power system under the WEM scenario is currently being analysed.

4.6 Dimension research, innovation and competitiveness

4.6.1 Current situation in the low-carbon-technologies sector and, to the extent possible, its position on the global market (that analysis has to be carried out at Union or global level)

Albania participated in Horizon 2020 and participates in Horizon Europe. Based on these agreements, research organisations and companies have been participating successfully in relevant projects.

4.6.2 Current level of public and, where available, private research and innovation spending on low-carbon-technologies, current number of patents and current number of researchers

At national level, there is no specific programme on research and development of specific low-carbon technologies. With regard to the private sector, information about private research and innovation spending on low-carbon-technologies, the current number of patents and current number of researchers is not available.

4.6.3 Breakdown of current price elements that make up the main three prices components (energy, network and taxes/levies)

The following tables gives the breakdown of energy price components as well the current tariffs. An exchange rate of 1 EUR = 100 ALL is used in all tables.

		Average electricity prices in Eurocent/kWh for the year 2023				
Consumer	**Voltage**	**Energy and**	**Network**	**Costs**	**VAT**	**VAT**
Type	**level**	**Supply**	**Transmission**	**Distribution**	**Excluded**	**Included**
Private supplied from Last Resort Supplier	**35 kV**	16.870	0.85	1.55	19.270	23.124
Private supplied from Last Resort Supplier	**20/10/6 kV**	13.42	0.85	3.99	18.26	21.912
Water Sewage Companies supplied from Last Resort Supplier	**35 kV**	6.93	0.85	1.55	9.33	11.196
Water Sewage Companies supplied from Last Resort Supplier	**20/10/6 kV**	6.93	0.85	3.99	11.77	14.124
Private	**0.4 kV**	6.73	0.85	6.42	14.00	16.800
Bakeries, wheat production	**0.4 kV**					

Category I		0.33	0.85	6.42	7.60	9.120
Category II		2.23	0.85	6.42	9.50	11.400
Category III		4.73	0.85	6.42	12.00	14.400
Households	**LV**	2.23	0.85	6.42	9.50	11.400

Table 46: Energy price components for average electricity prices

		Average electricity prices during peak hours in EUR/kWh				
Consumer	**Voltage**	**Energy and**	**Network**	**Costs**	**VAT**	**VAT**
Type	**level**	**Supply**	**Transmission**	**Distribution**	**Excluded**	**Included**
Private supplied from Last Resort Supplier	**35 kV**	19.76	0.85	1.55	22.16	26.59
Private supplied from Last Resort Supplier	**20/10/6 kV**	16.16	0.85	3.99	20.999	25.20
Water Sewage Companies supplied from Last Resort Supplier	**35 kV**	8.33	0.85	1.55	10.73	12.88
Water Sewage Companies supplied from Last Resort Supplier	**20/10/6 kV**	8.70	0.85	3.99	13.536	16.24
Private	**0.4 kV**	8.83	0.85	6.42	16.1	19.32
Bakeries, wheat production	**0.4 kV**					
Category I		1.47	0.85	6.42	8.74	10.49
Category II		3.66	0.85	6.42	10.93	13.11
Category III		6.53	0.85	6.42	13.80	16.56

Table 47: Energy price components for electricity during peak demand

Type of activity:	Approved tariff
Electricity transmission service tariff	ALL 0.75/kwh
Distribution service tariff at 35 kV voltage level	ALL 1.5 /kwh
Distribution service tariff at voltage level 20 kV	ALL 3.9 /kwh
Average tariff of the delivery service fee	ALL 4.79 /kwh
Sale price for Customers at 20 kV	ALL 11 /kwh at peak load ALL 12.65 /kwh
Sales price for Customers at 10/6 kV	11 ALL/kwh at peak load 12.65 ALL/kwh
Tariff for natural gas transmission service	28 ALL/m^3 or 2.64 ALL/kwh

Table 48: Tariffs approved by ERE, the Albanian Energy Regulatory Authority

4.6.4 Description of energy subsidies including fossil fuels

Subsidies for fossil fuels

Power generation in Albania relies exclusively on hydropower and this trend shall continue in the short term. There is no dependency on the coal or other fossil fuels on production of the electricity, which means that there is no need for subsidies for fossil fuels.

Subsidies for renewable energy sources

In this regard, the policies for addressing the support schemes or the subsidy mechanisms are mainly oriented to promotion of the electricity production from RES. This policy is in compliance with the national target of reaching 38% of gross final energy consumption from RES by 2020.

Law 7/2017 "On promoting the use of energy from renewable sources (RES)" provides for the establishment of two types of financial support for RES-E:

- **The "Feed-in-Tariff",** this is the legal financial support scheme for the purchase price of the energy produced by RES with limited generating capacity up to 2 MW for PV plants and up to 3 MW for wind farms. These projects are approved by the Minister according to the procedures of DCM 822/2015, as amended "On the approval of the rules and procedures for construction of the new electricity production capacities, which are not object of concession". The methodology approved by DCM 369, dated 26.4.2017 "On the approval of the methodology for the determining the price of the purchase of the electricity produced from small renewable sources from the sun and wind", provides the approval from ERE of the fixed price that the producer will sell to OSHEE for 15 years.
- Setting the **"Feed-in-Premium"** (FiP tariff) - this is the legal financial support scheme for the purchase price of the energy produced from hydro power plants with installed generating capacity up to 15MW, where a 20% is added to the reference price (HUPEX or ALPEX).

The methodology of support schemes, according to the capacity of the RES plant, is approved by DCM 369/2017 based on the law no. 7/2017 "For the promotion of the using of the energy from the renewable sources (RES)".

- For PV plants of a capacity of up to 2MW there are applied the support schemes with adjusted feed-in tariff tariff (FiT). For the year 2017 the price has been 100 € / MWh. For the year 2018 this price has been revised at 71.2 Euro/Mwh. For the following year 2019, the price has been 100.025 €/MWh. For the year 2022 the price of the energy produced from PV plants with an installed capacity up to 2 MW has been 97.21 and in 2023 the price has been 95.04 €/MWh.
- For the installed capacities of above 2MW the auction support scheme is applied based on CfD (Contracts for Difference) which proved to be attractive for the interested investors. This scheme has proved to be successful and the experience gained shall serve as a base to orient the pricing policies of such technologies in the future.
- For the wind energy plants of a capacity up to 3MW the support schemes are based on an adjusted feed-in-tariff (FiT). For 2017 the price has been set at 76 €/MWh and there is no other decision from the ERE for 2018-2020. For the installed capacities over 3MW the auction support scheme must be applied which and being provided through a CfD. An auction for the construction of wind power plants has been successfully completed and 3 projects have been selected as winners, with a total installed capacity of 222.6 MW.

For small hydropower plants up to 15 MW, the regulator is setting a FiT price each year promote the RES energy production capacities /works, as a direct commitment to subsidize clean energy, versus imports which are considered as energy of fossil origin as a mechanism to reach the target of 38% of net contribution of RES to the final consumption by end of 2020.

According to the INSTAT data for the year 2019 the electricity being produced from PV plants represents approximately 0.43% of the total domestic production or 0.29% of the total electricity consumption for this year. In 2019 there is no contribution from the wind farms despite a considerable number of permissions being approved (the 2019 is the first year the other sources of renewables are contributing to the net domestic production of electricity).

Subsidies /support schemes in the agriculture sector

In Albania, the subsidies applied for fossil fuels are limited. For the year 2021, a subsidy scheme is going to be applied in the agriculture sector for certain categories of agriculture products. The decision also determines the norms of oil consumption per hectare for all these groups and subgroups that oil will be provided free of charge, which according to the Council of Minister decision consists in:

- exemption from the excise tax (37 ALL /lt) (/eq. 0.299 euro)
- exemption from the turnover tax (27 ALL /lt) (/eq.0.218 euro);
- exemption from the carbon tax (3 ALL /lt); (eq.0.0024 Euro)
- exemption from the VAT (13.4 ALL /lt); (eq. 0.108 Euro).

In total, for 1 litre oil being used in the agriculture sector for the selected categories (field plants, fruit trees and vegetables) it will be paid 67 ALL or 54% less. The total fund that is planned to be used for the financing of the above-mentioned measures is one billion ALL (approx. 809 000 Euro) for the year 2021, of which 950 million ALL will be used for tax subsidy and 50 million ALL for the monitoring of the subsidy scheme.

The reference price for oil that is going to be used in the agriculture sector will be the average annual price 144 lek /liter (eq.1.163 Euro) as it is published by Public Procurement Agency (PPA) in the Bulletin of Public Notices.

5 ASSESSMENT OF IMPACTS OF PLANNED POLICIES AND MEASURES

5.1 Impacts of planned policies and measures, including comparison to projections with existing policies and measures

This section addresses Impacts of planned policies and measures described in section 3 on energy system and GHG emissions and removals, including comparison to projections with existing policies and measures (as described in section 4). This corresponds to the “With Additional Measures” (WAM) scenario.

Albania has a number of planned additional measures in all sectors as described in detail in chapter 3. This chapter presents outcomes of projections with the planned additional measures on an overall and sectoral level.

In analogy to chapter 4, for better readability, these figures show values for historic trends from the year 2016 to 2023, followed by projections for the years up to 2030, as well as projected values for 2040 and 2050. Where appropriate, figures show absolute values, scenario comparisons and breakdowns of subcategories for the differences between the WEM scenario (With Existing Measures) presented in Chapter 4 and the WAM scenario (With Additional Measures, denoted 'WAM RE full capacity' in the following plots) presented in this chapter.

The WAM scenario considers that renewable energy plants operate at full capacity independently from electricity demand in the country. This builds on a liquid market and a high interconnection level. As renewable electricity comes with no or limited running costs, there is always a buyer for electricity. To analyse the effect of this assumption, this document in some cases also shows the results for an alternative scenario in which renewable power generators run to meet domestic demand only. This scenario is then called 'WAM RE to meet demand'. Note that in most cases, this setup has no influence on results as the surplus electricity is simply exported. The renewable power plants do not lead to emissions and do not influence the energy demand. Main influence of this setup is on the renewable energy share, both in primary and final energy.

i. Projections of the development of the energy system and GHG emissions and removals as well as, where relevant of emissions of air pollutants in accordance with Directive (EU) 2016/2284 under the planned policies and measures at least until ten year after the period covered by the plan (including for the last year of the period covered by the plan), including relevant Union policies and measures

Dimension Decarbonisation

In terms of GHG emissions, the WEM scenario leads to total emissions of 11.7 Mt CO2eq in 2030, whereas the values in WAM reach 10.8 Mt CO2eq, which corresponds to a reduction of 7.7% relative to WEM values. Table 49 shows an overview of values for WEM and WAM. In comparison with 2020, WAM entails an increase of emissions of 2.8% in 2030, but later decreases in 2040 by -22.6% and further decreases until 2050, reaching -49.9%. The WEM scenario sees an increase of emissions by 11% in 2030 compared to 2020 and an increase by 41.2% in 2050. Table 31 lists the historic values shown in the figures as well as projections for 2020, 2025, 2030, 2040 and 2050.

Branch	2020	2021	2022	2023	2025	2030	2040	2050
WAM								
Demand	3,751.7	4,165.1	4,220.2	4,123.5	4,154.8	4,192.7	3,507.1	2,221.5
Transformation	151.4	145.1	157.2	159.0	159.0	159.0	234.3	770.0
Non Energy	6,658.6	6,645.3	6,633.3	6,639.1	6,636.7	6,506.3	4,438.1	2,303.8
Total WAM	10,561.8	10,955.6	11,010.7	10,921.5	10,950.5	10,858.0	8,179.5	5,295.2
WAM reduction relative to 2020 [%]		3.7%	4.3%	3.4%	3.7%	2.8%	-22.6%	-49.9%
WEM								
Demand	3,751.7	4,165.1	4,220.2	4,235.6	4,404.4	4,860.2	5,911.8	7,284.6
Transformation	151.4	145.1	157.2	159.0	159.0	167.1	361.7	484.1
Non Energy	6,658.6	6,645.3	6,633.3	6,691.0	6,725.9	6,692.5	6,817.6	7,145.5
Total WEM	10,561.8	10,955.6	11,010.7	11,085.6	11,289.2	11,719.8	13,091.1	14,914.1
WEM reduction relative to 2020 [%]		3.7%	4.3%	5.0%	6.9%	11.0%	23.9%	41.2%
Relative reduction (WAM minus WEM)		0.0%	0.0%	-1.6%	-3.2%	-8.2%	-46.5%	-91.1%

Table 49: GHG emissions (kt CO_2eq) for the whole economy in the WEM and WAM scenarios

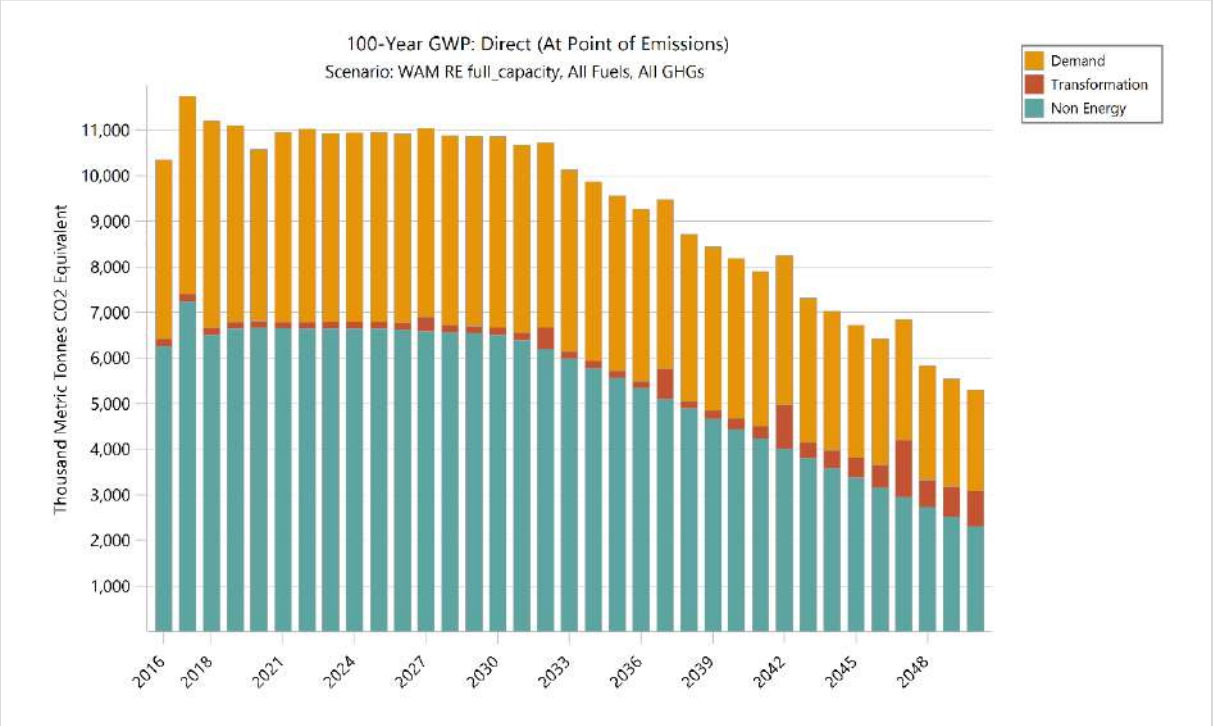

Figure 74: GHG emissions (kt CO_2eq) for the whole economy for the historic years 2016-2023 and as projected for 2024-2050.

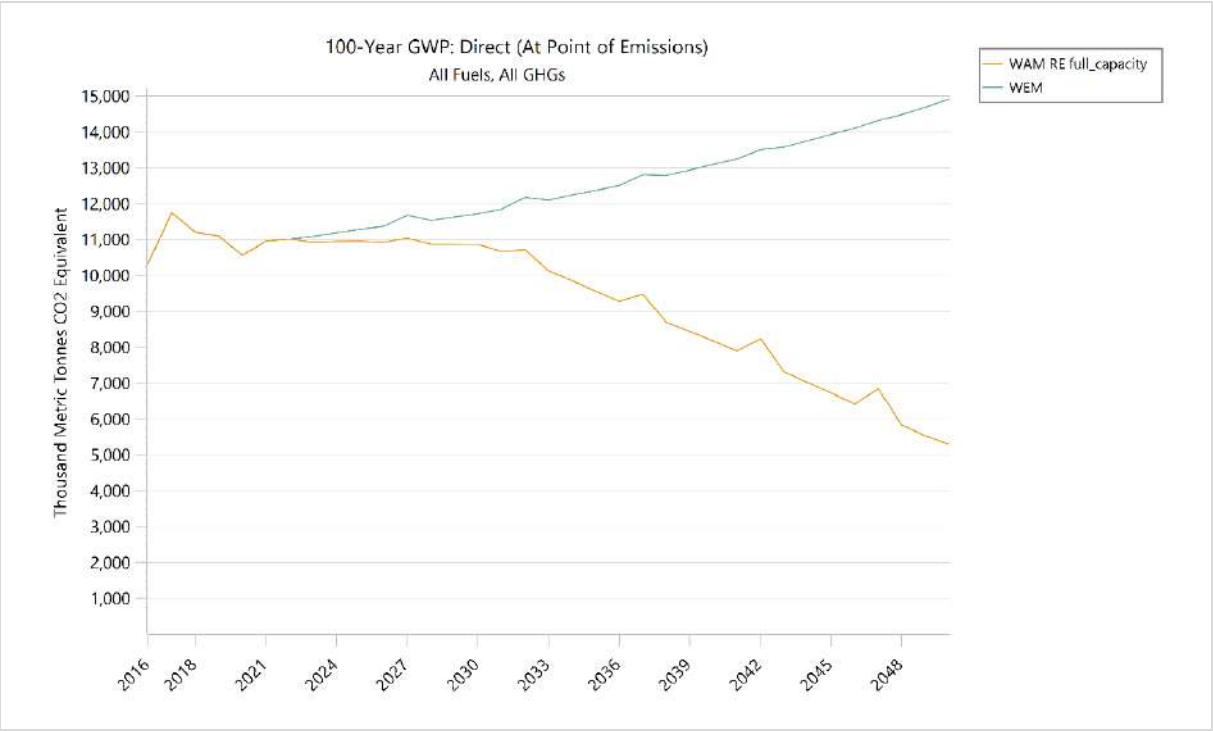

Figure 75: GHG emissions (kt CO_2eq) for the whole economy for the historic years 2016-2023 and as projected for 2024-2050, WAM and WEM

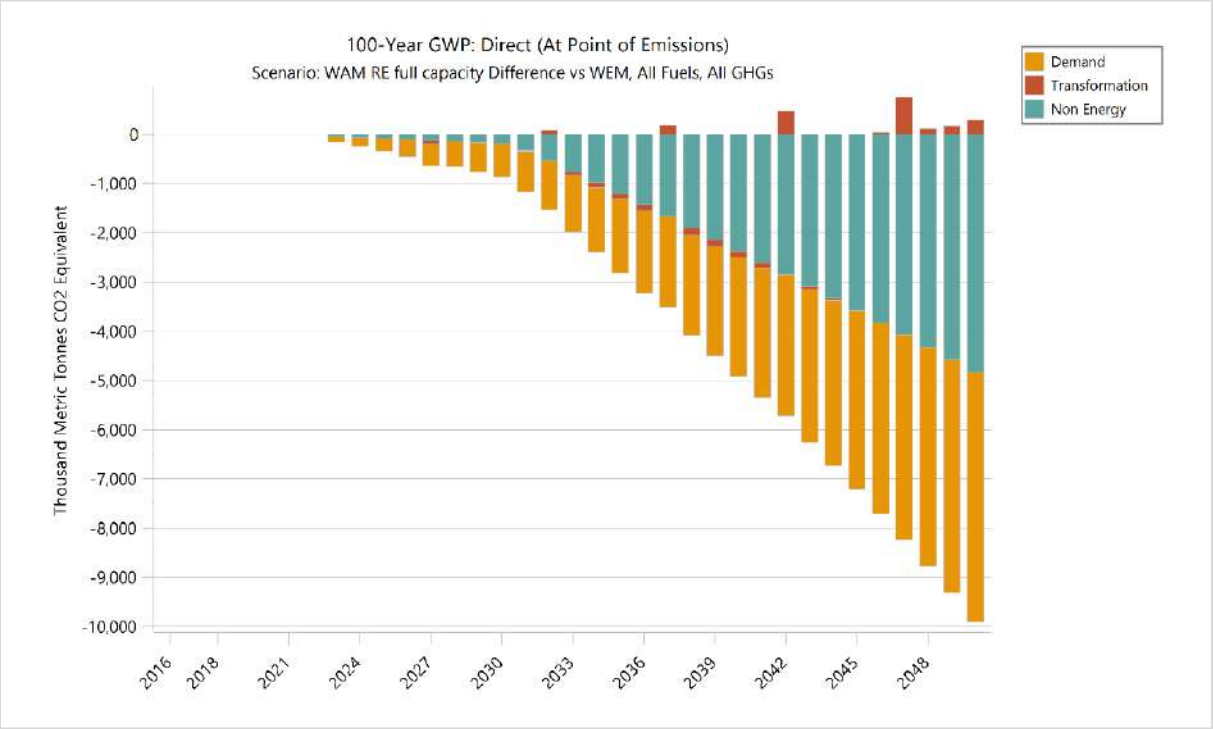

Figure 76: GHG emissions (kt CO_2eq) for the whole economy for the historic years 2016-2023 and as projected for 2024-2050 (WAM). Differences between WAM and WEM broken down into subcategories.

The following figures detail the direct GHG emissions from energy demand sectors. These are the direct emissions from energy use. The process emissions and the emissions due to energy transformation are reported separately. The two main source of direct emissions are the transport sector and the industrial sector which are not fully decarbonised by 2050.

In the residential sector (Figure 80) a change in heating and cooking systems towards a higher electrification (heat pumps and direct electrification) together with a change in demand due to refurbishment and reconstruction lead to a drop in direct emissions. The services sector (Figure 81), however, sees an increase in emissions due to the overall increase of the activity in the sector. Emissions in industry (Figure 82) are lower than in WEM due to an increase in electrification, fuel switch and an increase in energy efficiency. Emissions from the transport sector (Figure 83) are stable until 2030 and then are reduced gradually due to the increased electrification, introduction of hydrogen and promotion of public transportation modes both for passengers and for freight.

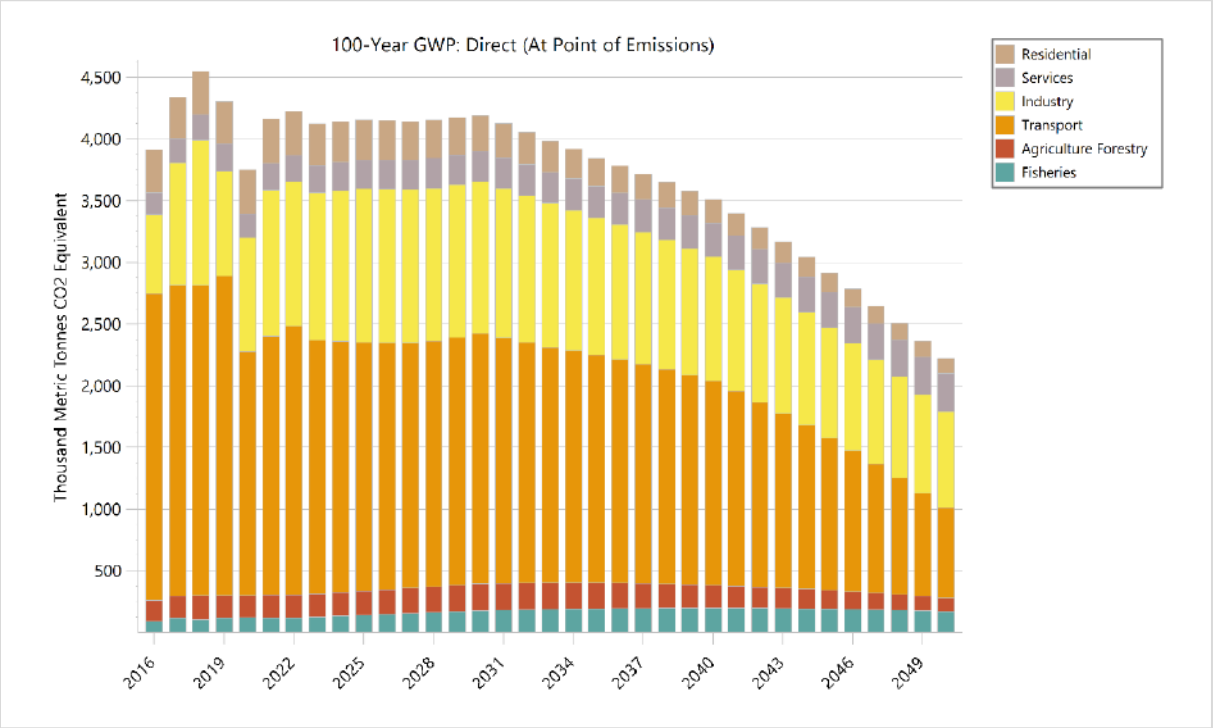

Figure 77: Direct GHG emissions (kt CO_2eq) for energy demand sectors for the historic years 2016-2023 and as projected for 2024-2050 with additional measures

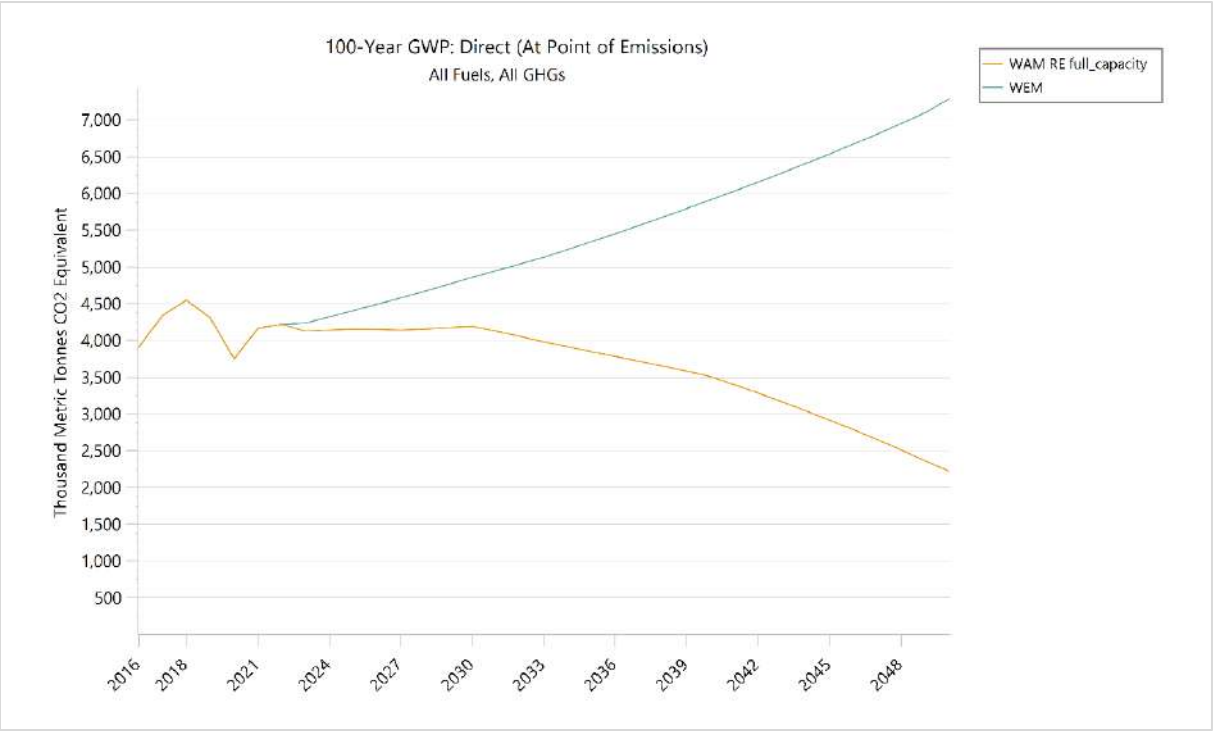

Figure 78: GHG emissions (kt CO_2eq) for energy demand sectors for the historic years 2016-2023 and as projected for 2024-2050 for WAM and WEM

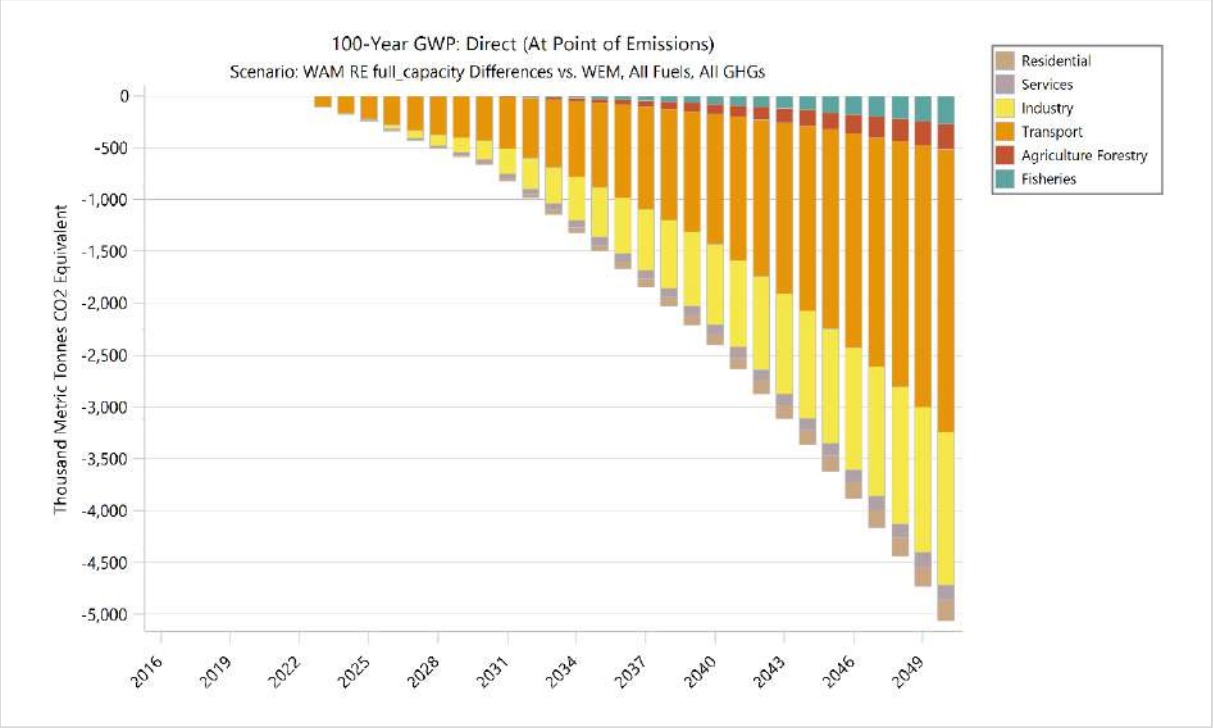

Figure 79: GHG emissions (kt CO_2eq) for the energy demand sectors for the historic years 2016-2023 and as projected for 2024-2050 (WAM). Differences between WAM and WEM broken down into subcategories.

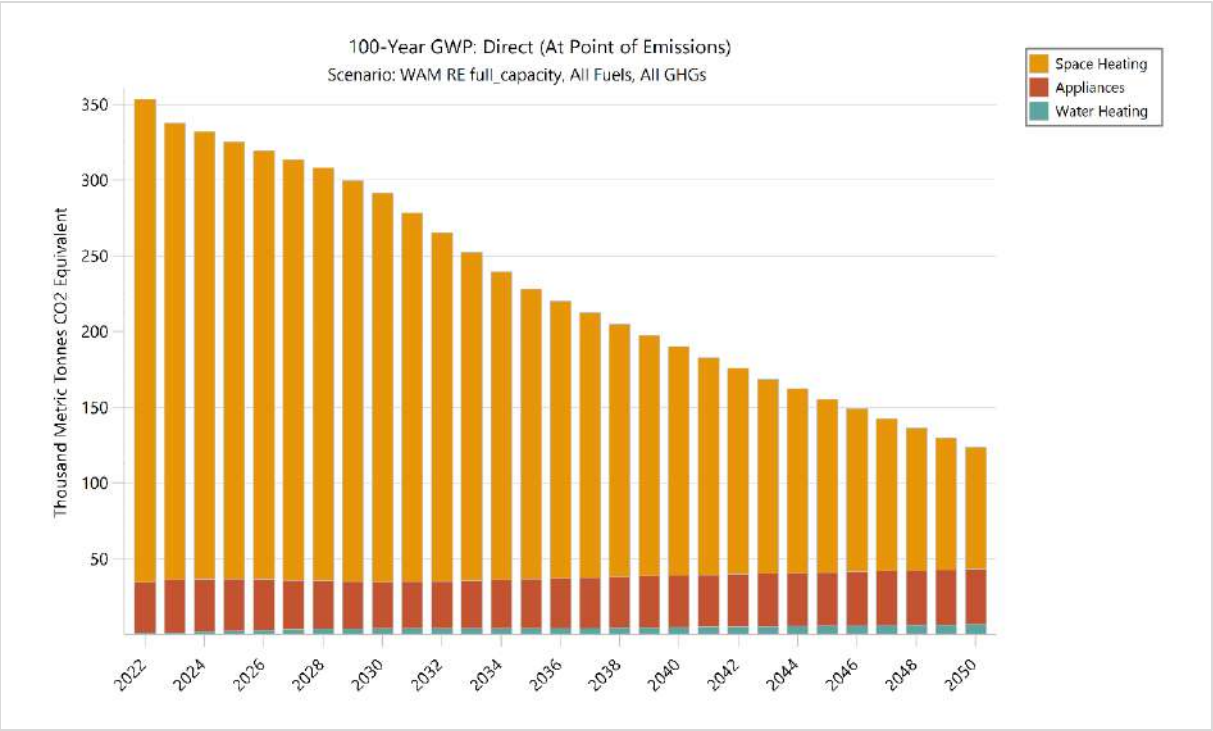

Figure 80: Direct GHG emissions (kt CO_2eq) for the residential sector for the historic years 2016-2023 and as projected for 2024-2050

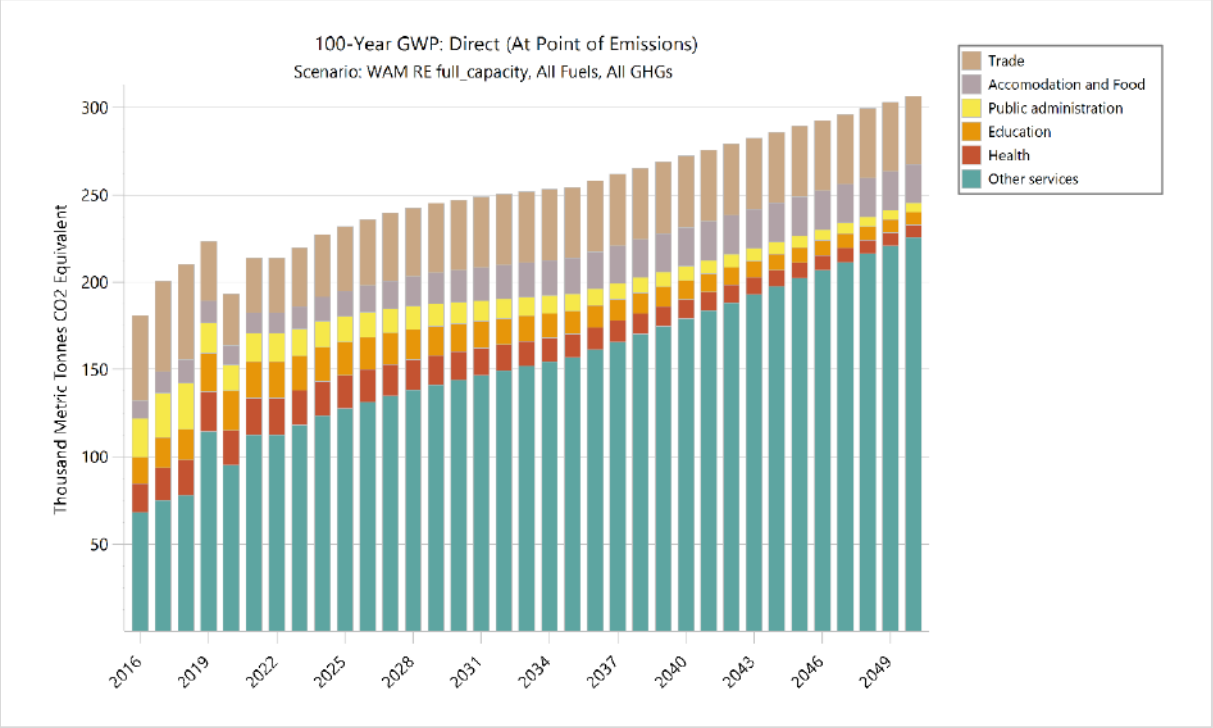

Figure 81: Direct GHG emissions (kt CO_2eq) for the services sector for the historic years 2016-2023 and as projected for 2024-2050

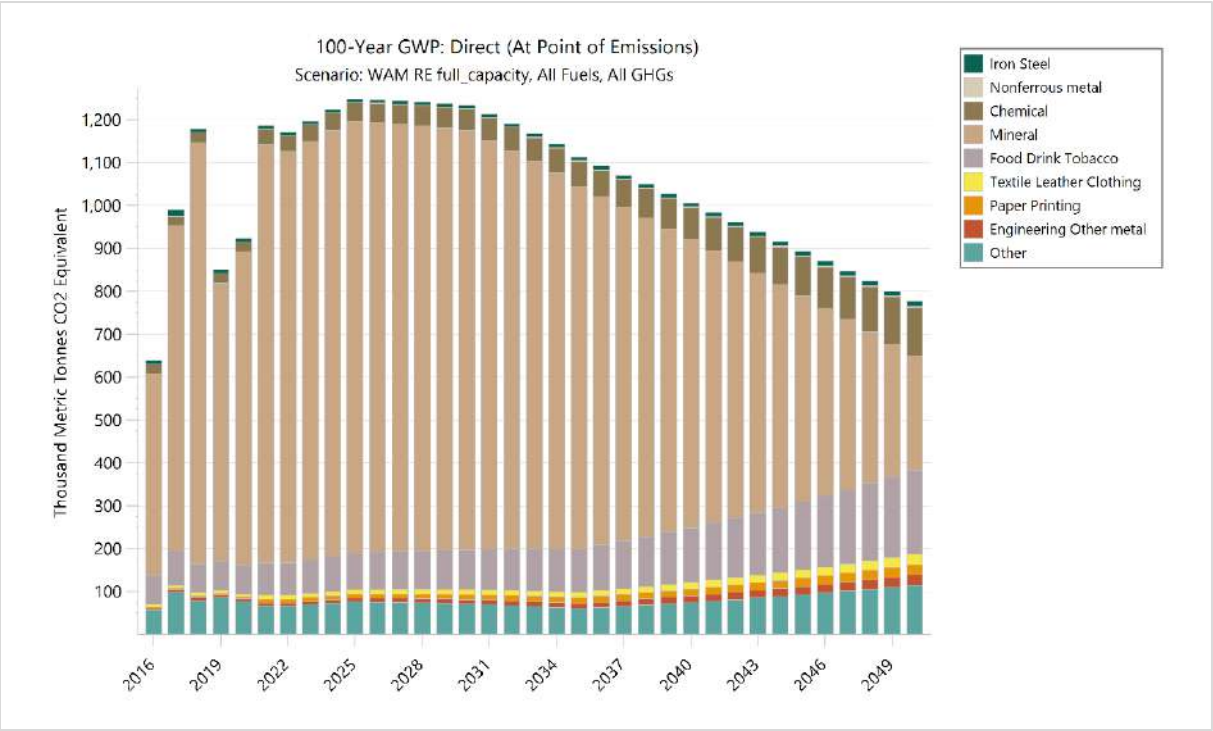

Figure 82: Direct GHG emissions (kt CO_2eq) for industry (energy demand) for the historic years 2016-2023 and as projected for 2024-2050

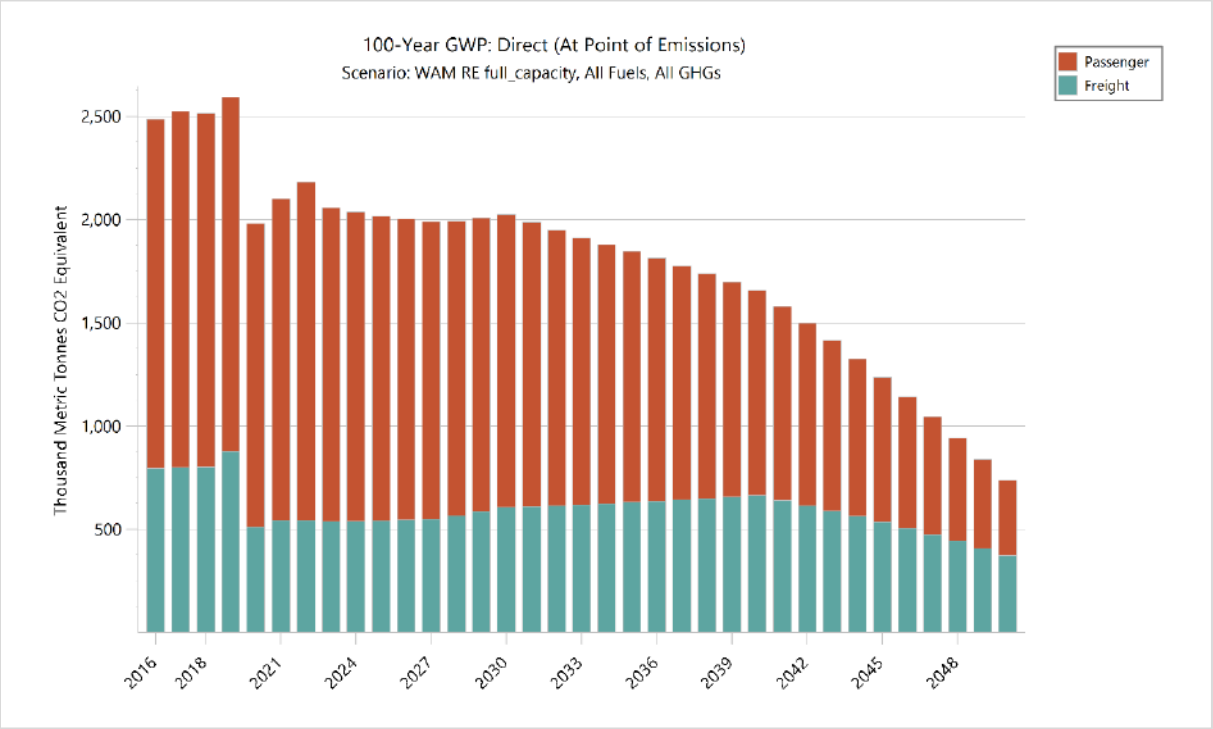

Figure 83: Direct GHG emissions (kt CO_2eq) for the transport sector for the historic years 2016-2023 and as projected for 2024-2050

The following figures show the direct GHG emissions from the transformation sector. This entails electricity generation from gas fired power plants as well as emissions from refineries. The spikes in emissions from electricity production in 2027 and every five years after can be explained by the fact that these years are modelled as dry years with low hydroelectric output.

The gas fired plants of Vlora, Korca and Roskovec, fill the gap and generate the emissions. The emissions are reduced relative to WEM (Figure 85, Figure 86) as additional renewable power plants are commissioned in WAM.

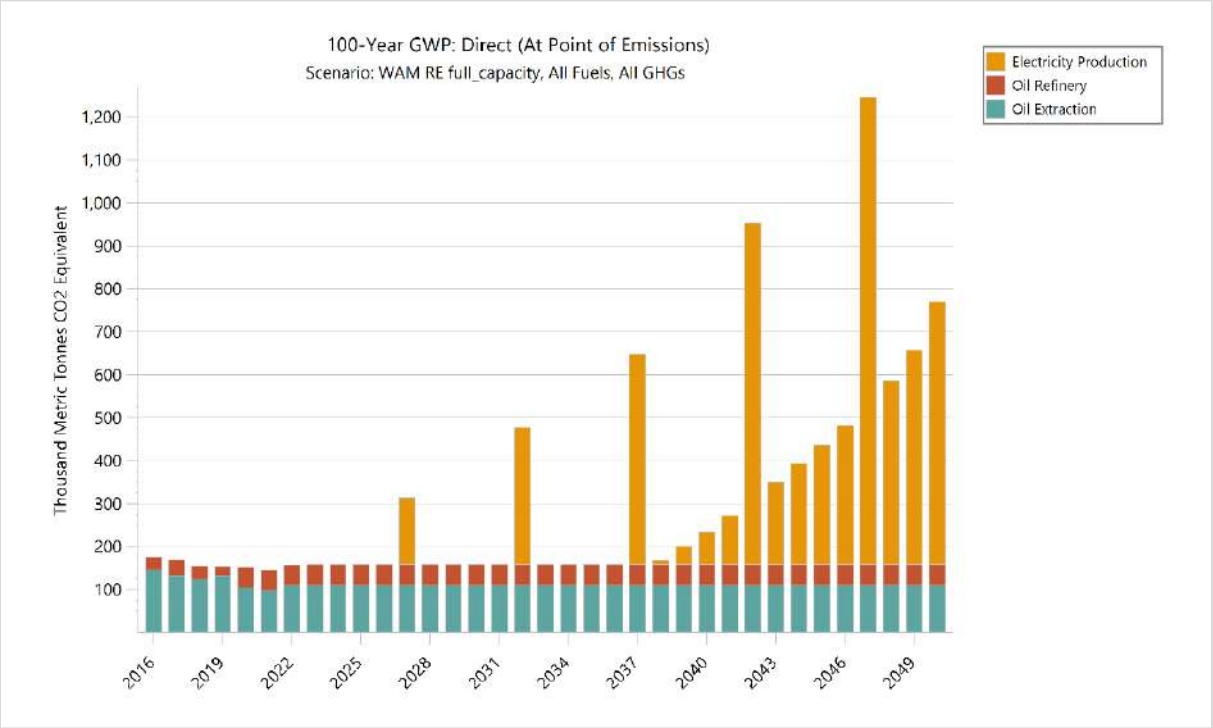

Figure 84: Direct GHG emissions (kt CO_2eq) for the transformation sector for the historic years 2016-2023 and as projected for 2024-2050

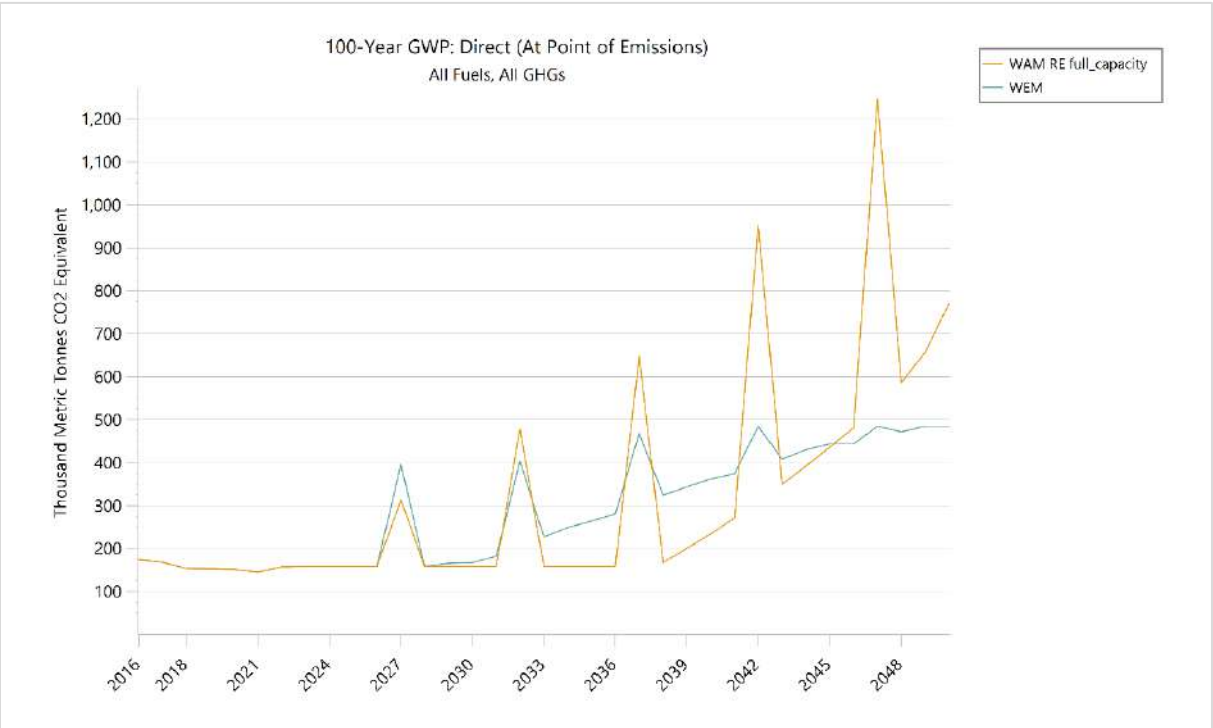

Figure 85: GHG emissions (kt CO_2eq) for the transformation sector for the historic years 2016-2023 and as projected for 2024-2050 (WAM RE full capacity). Scenario comparison with the "with existing measures" scenario presented in Chapter 4.

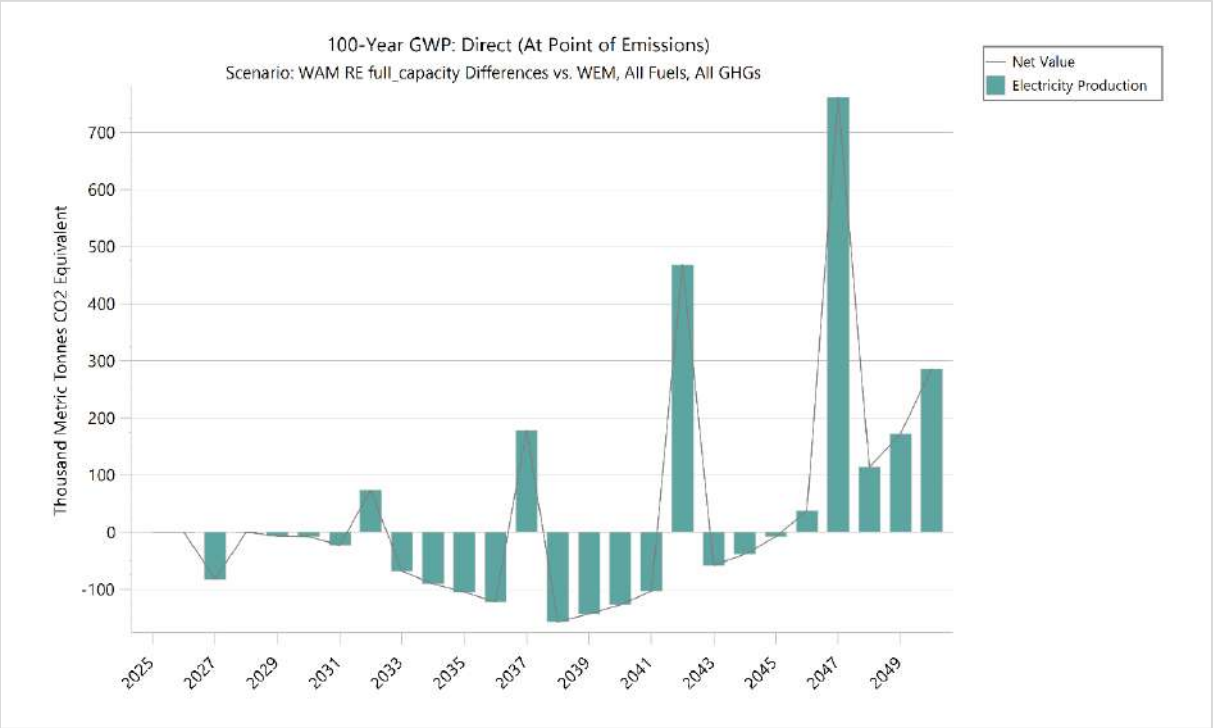

Figure 86: GHG emissions (kt CO_2eq) for the transformation sector for the historic years 2016-2023 and as projected for 2024-2050 (WAM). Differences between WAM and WEM broken down into subcategories.

The figures below show non-energy related GHG emissions. Figure 87 gives an overview over IPPU, agriculture, LULUCF and waste emissions, which are displayed in more detail in the subsequent figures. The difference to WEM is determined by a change in LULUCF management, see also Figure 92. While the actual sink capacity stays constant, the emissions from forest management drop by two ambitious policies. The second change to GHG emissions come from the ambitious plans implemented for the cement sector, see in particular Figure 90. This is assumed to affect the cement plants in the country to implement CCU technologies, avoiding 80% of specific emissions (process and combustion emissions) by 2050. The other subcategories show a small decrease compared to WEM emissions, mainly due to the reduction of emissions from agriculture through the implementation for the reduction of methane emissions due to enteric fermentation. An ambitious waste strategy has recently been adopted and is considered under WEM.

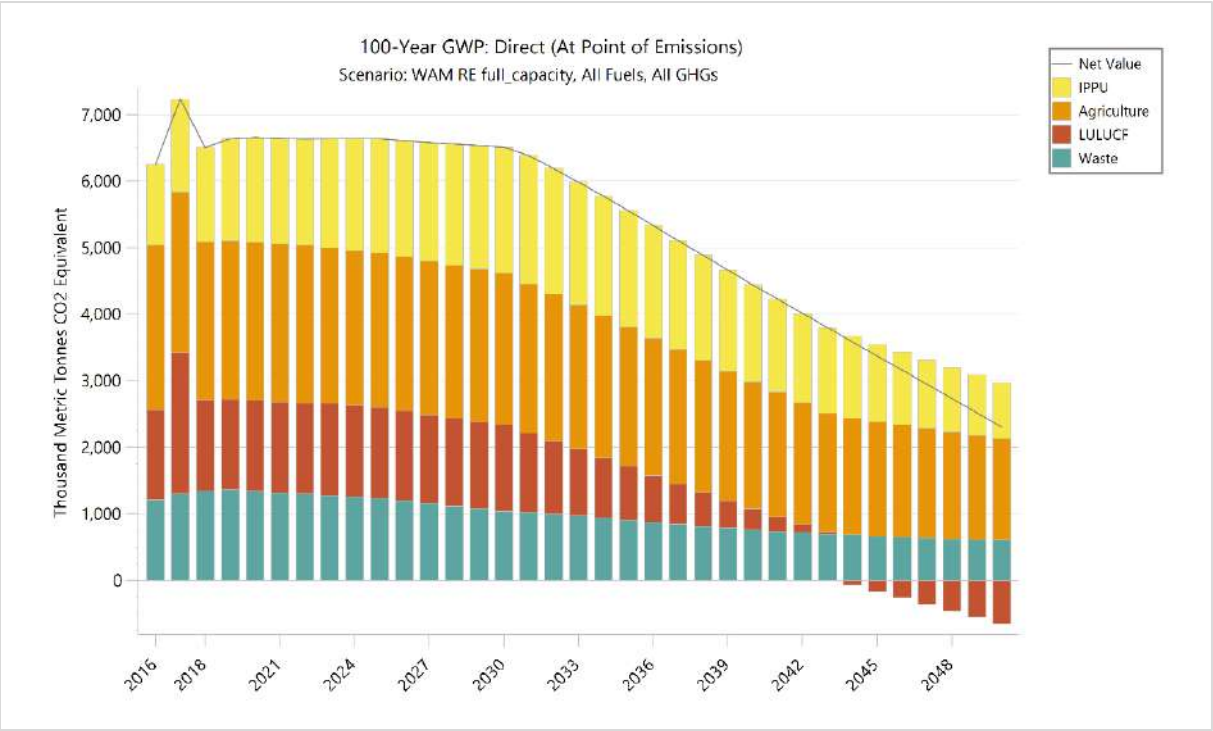

Figure 87: Non-energy related GHG emissions (kt CO_2eq) for the historic years 2016-2023 and as projected for 2024-2050

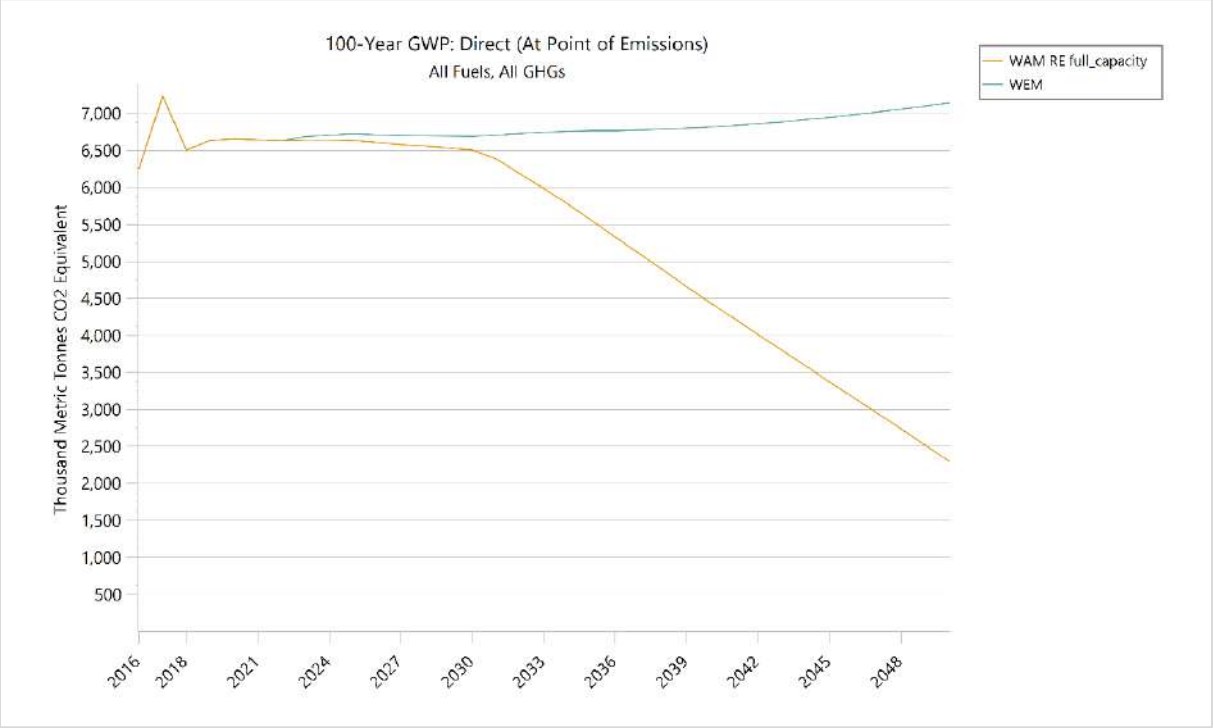

Figure 88: Non-energy related GHG emissions (kt CO_2eq) for the historic years 2016-2023 and as projected for 2024-2050 for WAM and WEM

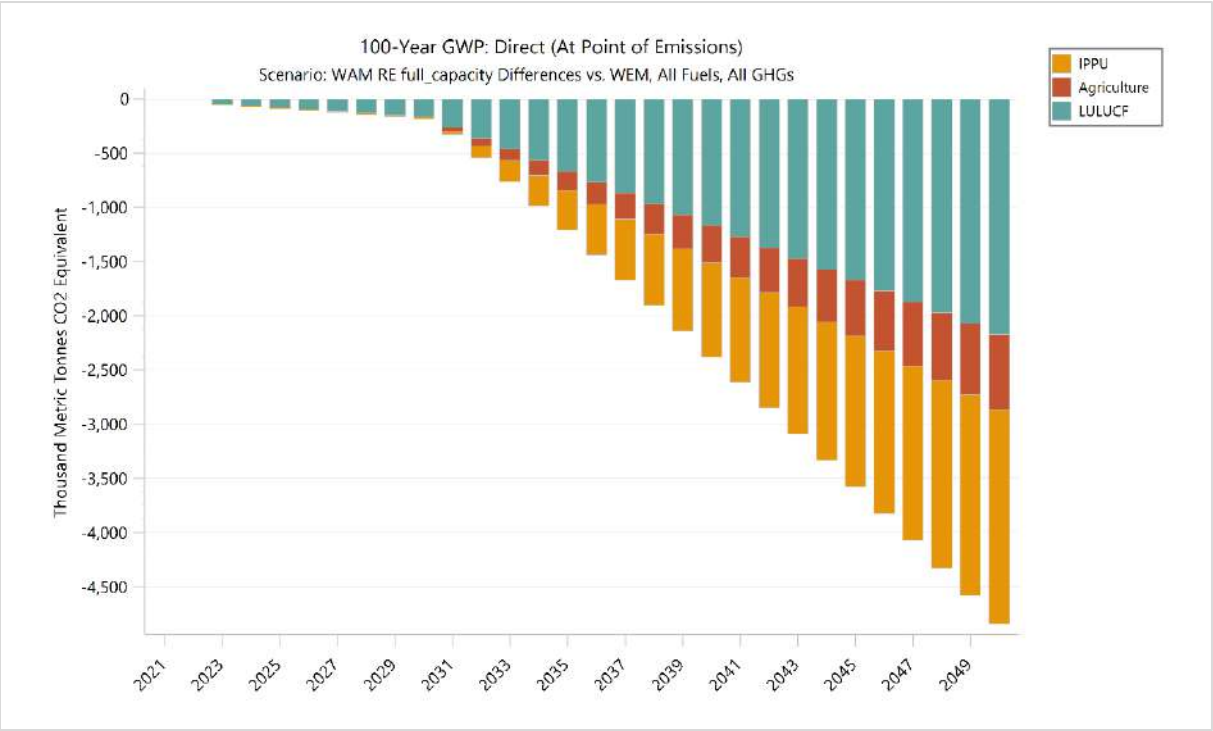

Figure 89: Non-energy related GHG emissions (kt CO_2eq) for the historic years 2016-2023 and as projected for 2024-2050 (WAM). Differences between WAM RE full capacity and WEM broken down into subcategories.

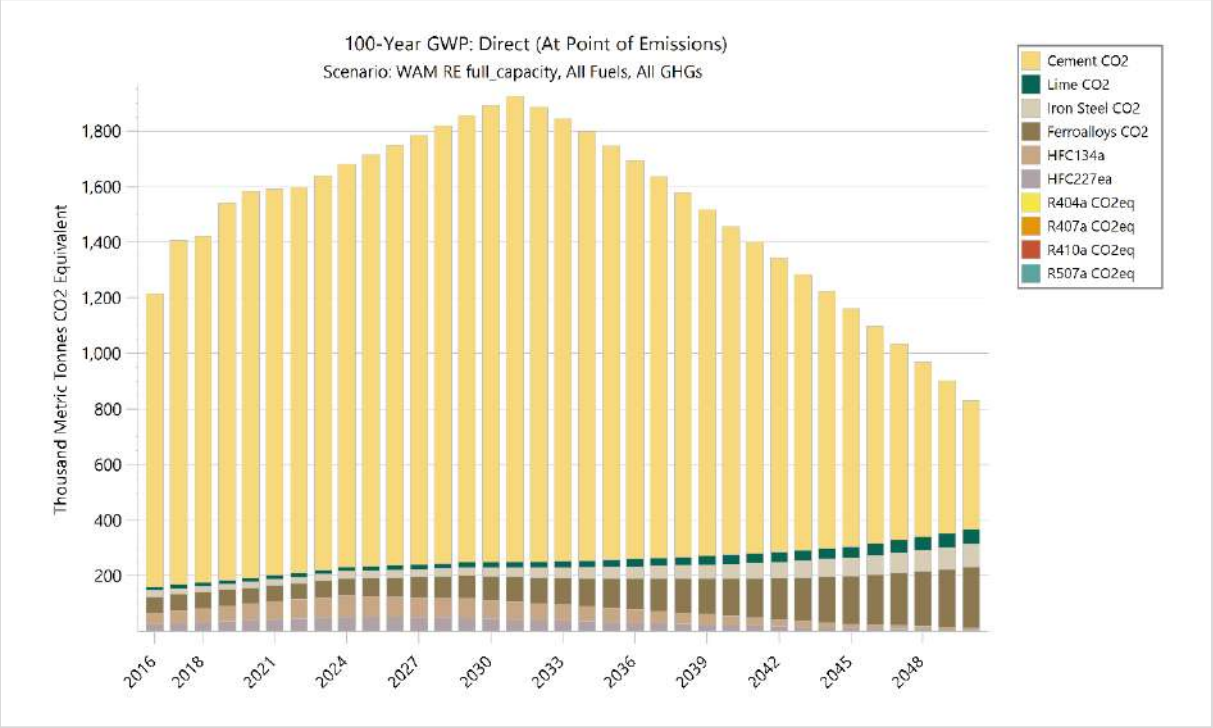

Figure 90: GHG emissions (kt CO_2eq) from industrial processes and product use for the historic years 2016-2023 and as projected for 2024-2050

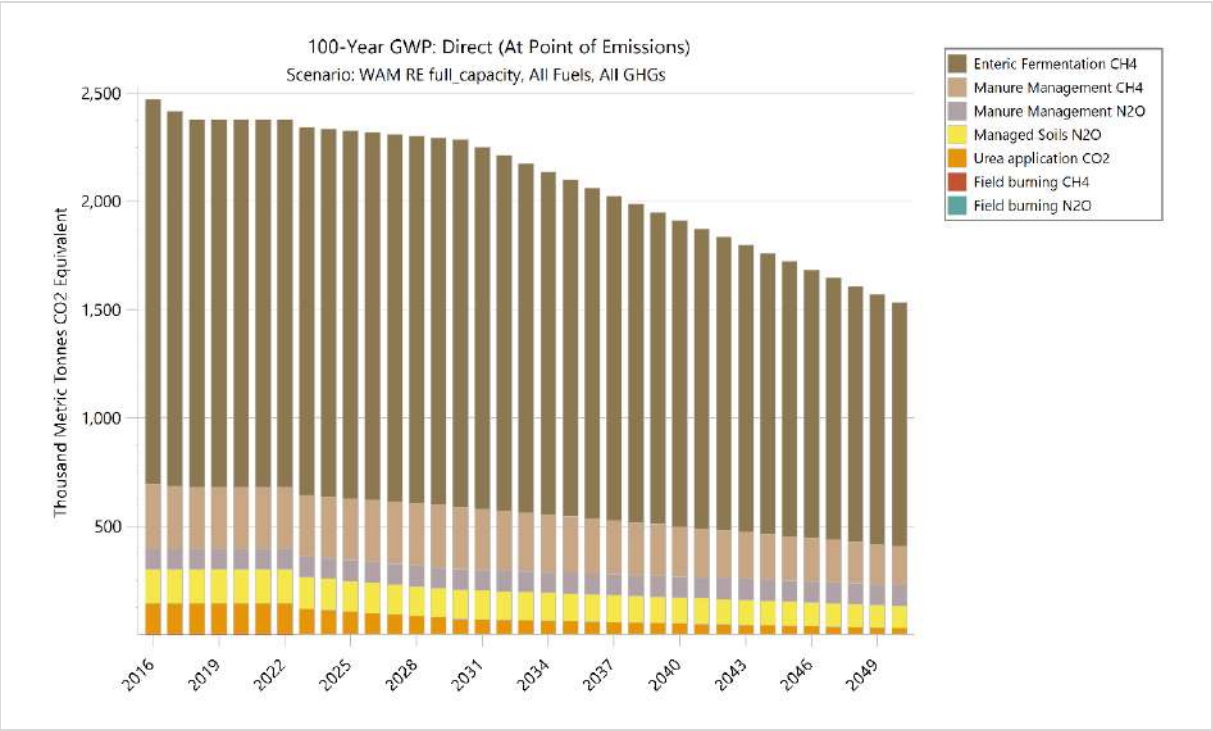

Figure 91: Non-energy related GHG emissions (kt CO_2eq) from agricultural activities for the historic years 2016-2023 and as projected for 2024-2050

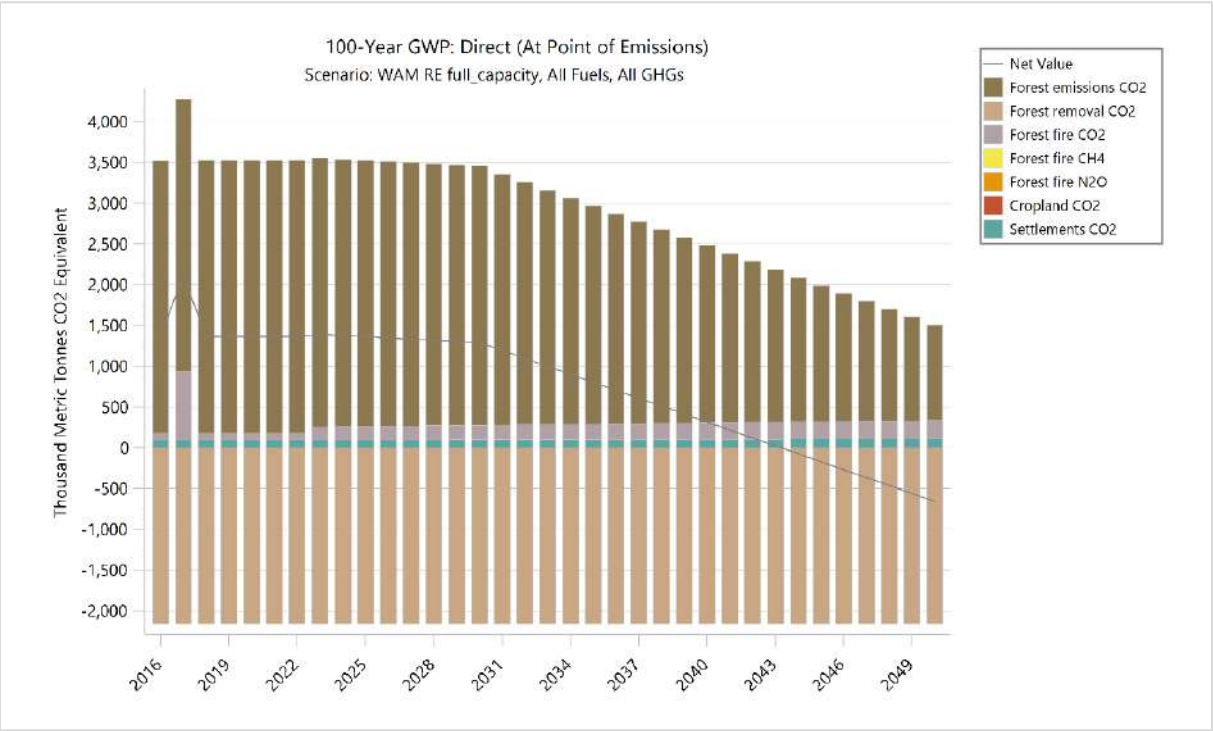

Figure 92: Non-energy GHG emissions (kt CO_2eq) from land-use, land-use change and forestry (LULUCF) for the historic years 2016-2023 and as projected for 2024-2050

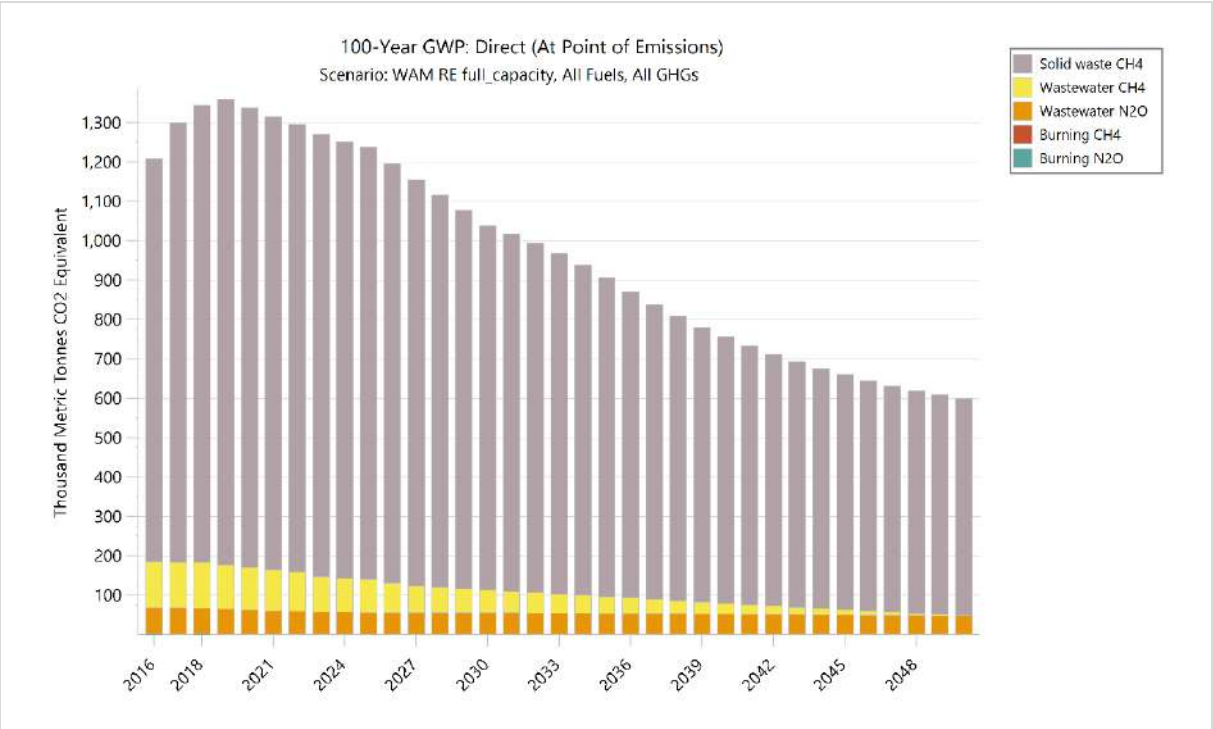

Figure 93: Non-energy GHG emissions (kt CO_2eq) from the waste sector for the historic years 2016-2023 and as projected for 2024-2050

The following table gives GHG emissions (ktCO_2eq, 100-year global warming potential) for different branches of the economy for the scenario with additional measures. Conversion factors of non-CO_2 emissions are given in Chapter 4.

Branch	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE full capacity								
Demand	3,751.7	4,165.1	4,220.2	4,123.5	4,154.8	4,192.7	3,507.1	2,221.5
Transformation	151.4	145.1	157.2	159.0	159.0	159.0	234.3	770.0
Non Energy	6,658.6	6,645.3	6,633.3	6,639.1	6,636.7	6,506.3	4,438.1	2,303.8
Total WAM	10,561.8	10,955.6	11,010.7	10,921.5	10,950.5	10,858.0	8,179.5	5,295.2
Demand								
Residential	359.9	363.5	353.5	337.5	325.3	291.6	190.2	123.4
Services	193.3	213.9	213.9	219.7	231.7	247.0	272.3	306.6
Industry	923.3	1,186.1	1,169.8	1,196.2	1,248.2	1,233.6	1,005.7	776.7
Transport	1,979.4	2,099.3	2,180.7	2,057.5	2,015.5	2,024.9	1,656.0	734.8
Agriculture Forestry	173.6	181.9	181.9	186.4	195.7	221.1	186.2	111.4
Fisheries	122.3	120.4	120.4	126.2	138.4	174.5	196.9	168.7
Total	3,751.7	4,165.1	4,220.2	4,123.5	4,154.8	4,192.7	3,507.1	2,221.5
Residential								
Space Heating	324.6	328.4	319.1	301.5	288.9	257.1	151.3	80.2
Appliances	34.2	34.2	33.6	34.8	34.2	30.8	34.1	36.6
Water Heating	1.0	0.9	0.8	1.3	2.2	3.7	4.8	6.6

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Total	359.9	363.5	353.5	337.5	325.3	291.6	190.2	123.4
Services								
Trade	29.5	31.5	31.5	33.7	36.8	40.3	41.1	39.3
Accomodation and Food	11.1	11.9	11.9	12.9	14.7	18.2	22.0	22.0
Public administration	15.1	16.2	16.2	15.3	14.7	12.3	8.2	5.3
Education	22.6	20.8	20.8	19.8	19.0	16.1	10.9	7.2
Health	19.8	20.9	20.9	19.9	19.1	16.1	11.0	7.2
Other services	95.1	112.6	112.6	118.1	127.5	143.9	179.1	225.5
Total	193.3	213.9	213.9	219.7	231.7	247.0	272.3	306.6
Industry								
Iron Steel	9.5	6.6	6.6	6.9	7.4	7.6	9.3	11.4
Nonferrous metal	-	0.9	0.9	1.0	1.0	1.3	2.0	3.1
Chemical	22.2	37.6	37.6	39.3	42.9	50.1	73.5	113.4
Mineral	728.8	974.7	958.3	974.9	1,007.1	977.2	672.4	265.4
Food Drink Tobacco	68.8	75.0	75.0	78.4	85.4	93.1	127.0	195.9
Textile Leather Clothing	6.6	9.1	9.1	9.6	10.5	11.6	15.7	24.3
Paper Printing	4.3	8.5	8.5	8.9	9.7	11.1	15.8	24.4
Engineering Other metal	6.7	7.1	7.1	7.5	8.1	10.1	15.6	24.1
Other	76.4	66.6	66.6	69.7	76.2	71.4	74.4	114.7
Total	923.3	1,186.1	1,169.8	1,196.2	1,248.2	1,233.6	1,005.7	776.7
Transport								
Passenger	1,468.8	1,555.7	1,637.4	1,522.6	1,475.0	1,417.9	993.4	363.2
Freight	510.6	543.6	543.3	535.0	540.5	607.0	662.6	371.6
Total	1,979.4	2,099.3	2,180.7	2,057.5	2,015.5	2,024.9	1,656.0	734.8
Transformation								
Electricity Production	-	-	-	-	-	-	75.3	611.0
Oil Refinery	47.4	47.4	47.4	49.1	49.1	49.1	49.1	49.1
Oil Extraction	104.1	97.8	109.9	109.9	109.9	109.9	109.9	109.9
Total	151.4	145.1	157.2	159.0	159.0	159.0	234.3	770.0
Non-energy								
IPPU	1,583.9	1,592.1	1,600.2	1,640.4	1,714.7	1,891.3	1,456.2	830.8
Agriculture	2,376.6	2,376.6	2,376.6	2,340.8	2,325.0	2,286.4	1,910.8	1,533.7
LULUCF	1,361.2	1,361.2	1,361.2	1,388.0	1,360.2	1,290.7	315.7	-658.9
Waste	1,336.9	1,315.4	1,295.2	1,269.9	1,236.9	1,037.8	755.3	598.2
Total	6,658.6	6,645.3	6,633.3	6,639.1	6,636.7	6,506.3	4,438.1	2,303.8
IPPU								

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Cement CO_2	1,390.9	1,390.9	1,390.9	1,420.1	1,480.4	1,641.4	1,180.9	464.2
Lime CO_2	13.8	13.8	13.8	14.4	15.9	20.1	32.3	51.9
Iron Steel CO_2	22.1	22.1	22.1	23.2	25.5	32.3	51.9	83.4
Ferroalloys CO_2	57.9	57.9	57.9	60.7	66.8	84.6	135.8	218.1
HFC134a	59.2	63.9	68.6	72.3	74.7	66.8	32.7	7.8
HFC227ea	39.8	43.3	46.7	49.4	51.3	45.9	22.4	5.4
R404a CO_2eq	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
R407a CO_2eq	0.0	0.0	0.0	0.0	-	-	-	-
R410a CO_2eq	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
R507a CO_2eq	0.0	0.0	0.0	0.0	-	-	-	-
Total	1,583.9	1,592.1	1,600.2	1,640.4	1,714.7	1,891.3	1,456.2	830.8
Agriculture								
Enteric Fermentation CH_4	1,697.5	1,697.5	1,697.5	1,697.6	1,697.8	1,698.2	1,412.1	1,125.9
Manure Management CH_4	283.8	283.8	283.8	284.0	284.7	286.6	232.6	177.2
Manure Management N_2O	94.8	94.8	94.8	94.8	95.0	95.4	96.4	97.4
Managed Soils N_2O	155.8	155.8	155.8	146.4	142.9	134.3	119.4	104.5
Urea application CO_2	143.8	143.8	143.8	117.7	104.6	71.9	50.3	28.8
Field burning CH_4	0.7	0.7	0.7	0.3	-	-	-	-
Field burning N_2O	0.2	0.2	0.2	0.1	-	-	-	-
Total	2,376.6	2,376.6	2,376.6	2,340.8	2,325.0	2,286.4	1,910.8	1,533.7
LULUCF								
Harvested wood CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest emissions CO_2	3,344.6	3,344.6	3,344.6	3,294.4	3,260.9	3,177.3	2,174.0	1,170.6
Forest removal CO_2	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6	-2,161.6
Forest fire CO_2	84.7	84.7	84.7	161.2	165.8	177.5	200.9	224.2
Forest fire CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest fire N_2O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cropland CO_2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Grassland CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wetlands CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Settlements CO_2	93.5	93.5	93.5	94.0	94.9	97.4	102.5	107.8
Total	1,361.2	1,361.2	1,361.2	1,388.0	1,360.2	1,290.7	315.7	-658.9
Waste								
Solid waste CH_4	1,166.8	1,151.2	1,136.9	1,123.9	1,097.4	925.3	676.6	550.6
Wastewater CH_4	107.5	103.8	100.1	90.0	83.8	58.0	27.3	-
Wastewater N_2O	62.5	60.3	58.2	56.0	55.6	54.5	51.4	47.6

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Burning CH_4	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Burning N_2O	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Total	1,336.9	1,315.4	1,295.2	1,269.9	1,236.9	1,037.8	755.3	598.2

Table 50: GHG emissions (kt CO_2eq) for different branches of the economy, as determined for historic years (2020-2023) and as projected with additional measures until the year 2050.

Renewable Energy - Primary energy

The contribution of renewable energy to the primary energy is presented in the following table, which gives the current share of renewable energy in TPES and the projection until the year 2050 under consideration of additional measures. The following figures give the absolute values of renewable energy sources in net primary supply of energy for the WAM scenario (Figure 94) and when only running RE power plants to meet domestic demand (Figure 95). Table 51 shows the absolute values of renewable sources in primary energy supply, while Table 52 lists the shares. More details on the split between fuels in primary energy supply are given in the following section on energy efficiency.

In the WEM scenario, the renewable share in TPES changes from 29.2% in 2020 to 34.8% in 2030. In the WAM scenario, the renewable energy share in TPES reaches 58.4%. In case of the WAM RE scenario which considers only domestic electricity demand (WAM RE to meet demand), the share reaches 39.6%.

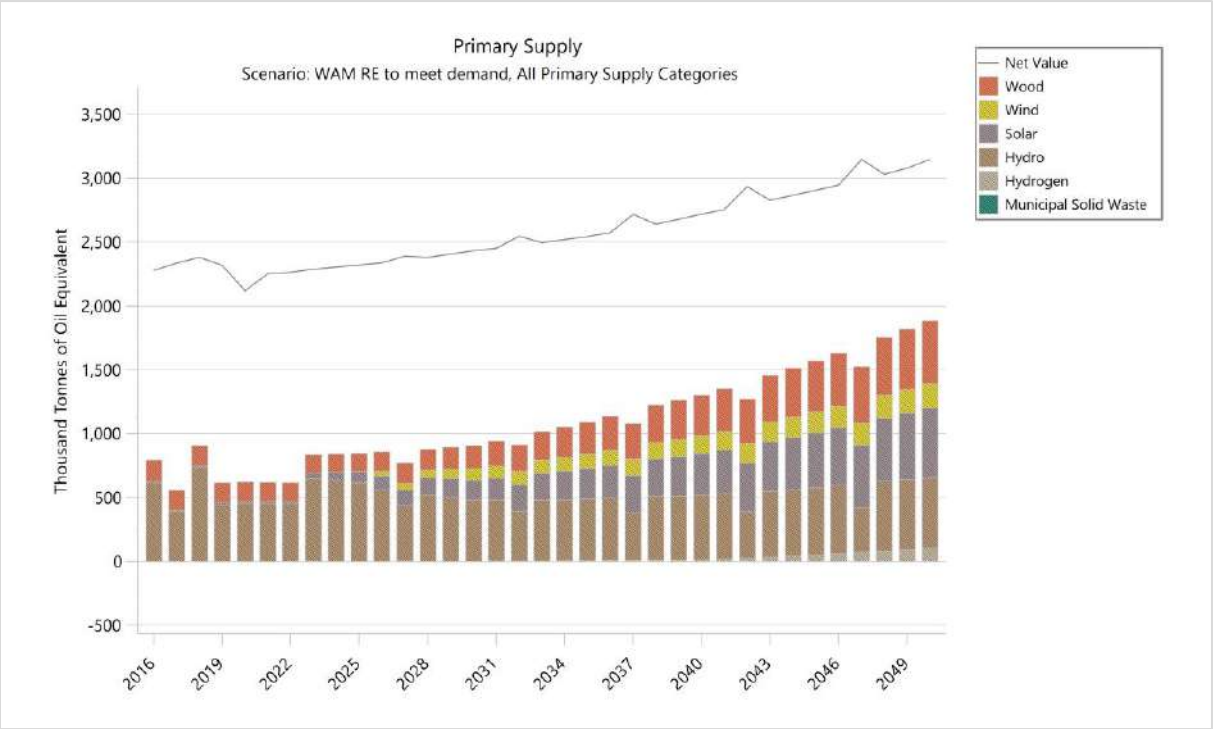

Figure 94: Renewable primary energy sources and total net demand for historic years (2016-2023) and as projected with additional measures until the year 2050 if RE plants run only to meet local demand

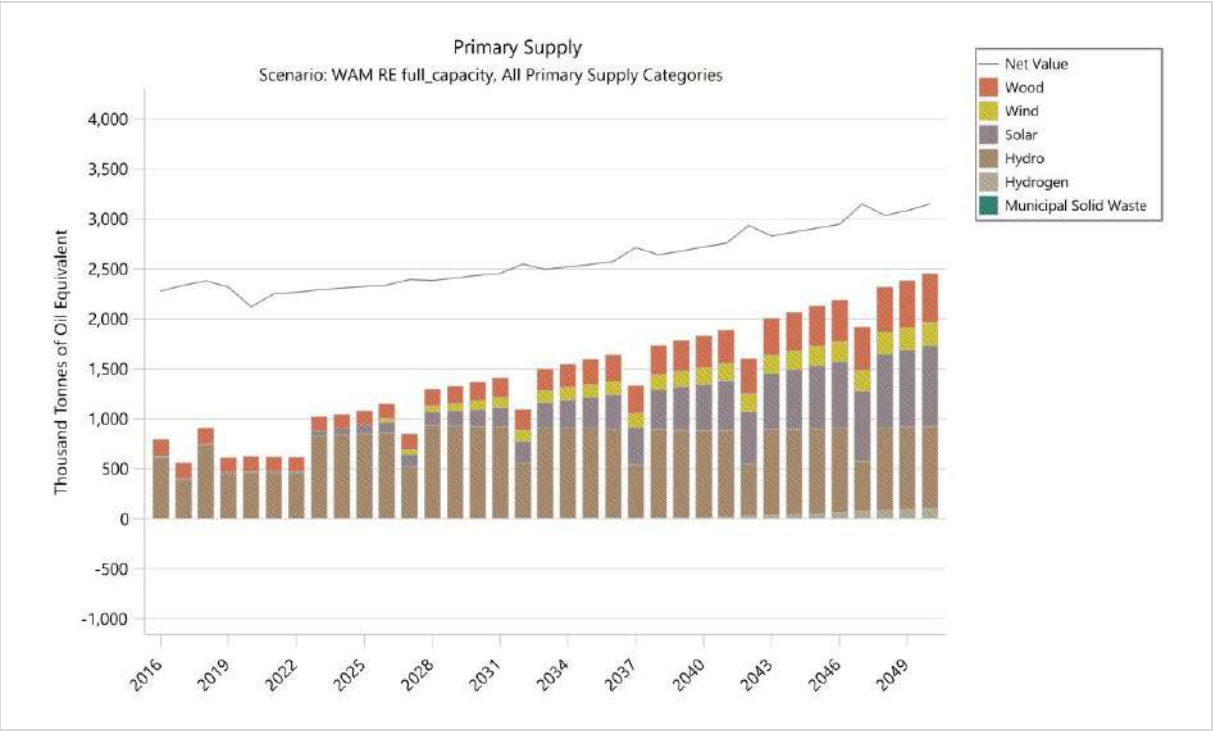

Figure 95: Renewable primary energy sources and total net demand for historic years (2016-2023) and as projected with additional measures until the year 2050 if RE plants run at full capacity (WAM)

Fuel [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE to meet demand								
Wood	149.5	146.3	143.2	142.8	143.2	181.0	321.5	491.1
Wind	-	-	-	-	-	93.8	139.6	193.0
Solar	15.8	16.7	16.5	43.8	88.5	151.5	325.0	546.3
Hydro	454.7	454.7	454.7	643.9	612.6	480.5	505.5	547.0
Hydrogen	-	-	-	-	-	0.1	10.6	104.0
Municipal Solid Waste	-	-	-	1.3	0.9	-	0.1	0.9
Biodiesel	-	-	-	19.4	32.1	56.8	101.6	103.2
Total	620.0	617.6	614.3	851.3	877.2	963.7	1,403.8	1,985.5
WAM								
Wood	149.5	146.3	143.2	142.8	143.2	181.0	321.5	491.1
Wind	-	-	-	-	-	97.9	163.8	229.7
Solar	15.8	16.7	16.5	43.8	88.5	164.4	462.8	808.3
Hydro	454.7	454.7	454.7	830.5	843.7	918.5	867.7	817.0
Hydrogen	-	-	-	-	-	0.1	10.6	104.0
Municipal Solid Waste	-	-	-	3.6	3.6	3.6	3.6	3.6
Biodiesel	-	-	-	19.4	32.1	56.8	101.6	103.2
Total	620.0	617.6	614.3	1,040.2	1,111.0	1,422.3	1,931.6	2,557.0

WEM								
Wood	149.5	146.3	143.2	142.1	142.5	145.0	153.0	179.7
Wind	-	-	-	-	-	41.4	41.4	41.4
Solar	15.8	16.7	16.5	37.7	55.3	61.5	72.3	92.1
Hydro	454.7	454.7	454.7	648.9	649.6	647.1	758.5	757.9
Hydrogen	-	-	-	-	-	0.1	15.3	47.7
Municipal Solid Waste	-	-	-	1.3	0.9	0.1	2.2	3.6
Total	620.0	617.6	614.3	830.0	848.3	895.1	1,042.8	1,122.3

Table 51: Absolute values of renewable energy sources and total values of primary energy supply for different scenarios

Fuel	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE to meet demand								
Wood	7.1%	6.5%	6.3%	6.2%	6.2%	7.4%	11.8%	15.6%
Wind	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	5.1%	6.1%
Solar	0.7%	0.7%	0.7%	1.9%	3.8%	6.2%	12.0%	17.4%
Hydro	21.4%	20.2%	20.1%	28.1%	26.4%	19.7%	18.6%	17.4%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	3.3%
Municipal Solid Waste	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Biodiesel	0.0%	0.0%	0.0%	0.8%	1.4%	2.3%	3.7%	3.3%
Total	29.2%	27.4%	27.1%	37.2%	37.8%	39.6%	51.6%	63.1%
WAM								
Wood	7.1%	6.5%	6.3%	6.2%	6.2%	7.4%	11.8%	15.6%
Wind	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	6.0%	7.3%
Solar	0.7%	0.7%	0.7%	1.9%	3.8%	6.8%	17.0%	25.7%
Hydro	21.4%	20.2%	20.1%	36.3%	36.3%	37.7%	31.9%	26.0%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	3.3%
Municipal Solid Waste	0.0%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%	0.1%
Biodiesel	0.0%	0.0%	0.0%	0.8%	1.4%	2.3%	3.7%	3.3%
Total	29.2%	27.4%	27.1%	45.4%	47.8%	58.4%	71.0%	81.2%
WEM								
Wood	7.1%	6.5%	6.3%	6.2%	6.0%	5.6%	4.7%	4.3%
Wind	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	1.3%	1.0%
Solar	0.7%	0.7%	0.7%	1.6%	2.3%	2.4%	2.2%	2.2%
Hydro	21.4%	20.2%	20.1%	28.2%	27.4%	25.2%	23.5%	18.1%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.1%

Municipal Solid Waste	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%
Total	29.2%	27.4%	27.1%	36.0%	35.7%	34.8%	32.3%	26.8%

Table 52: Shares of renewable energy sources in TPES and total renewable share for different scenarios

Renewable Energy - Final energy

Renewable shares in final energy consumption are determined according to Directive 2009/28/EC (RED; EU (2009); also see European Commission (2018)). The following figures show historic data in RES share for 2016-2021 and projections with additional measures. For the share in transport (RES-T), this includes the multipliers for the use of electricity in road and rail transport, which explains the strong increase. No advanced biofuels (with increased multipliers) are considered. The share of renewable energy in heating and cooling (RES-HC) falls as the share of wood for heating decreases. The share of renewable electricity (RES-E) is largely determined by hydropower, with increases in the projected capacities for solar PV and wind plants. Subsequent figures give technological details on each RES indicator.

As these indicators (in particular RES-E) are determined by the RES-E generation (numerator) and the net electricity demand (denominator), this is strongly influenced by the choice in assuming renewable power plants run full capacity, exporting all surplus electricity. Figures therefore show both variants of the WAM scenario. In overall terms, the additional measures increase the share of renewables in final energy from 37.1% (WEM scenario) in 2030 to 57.1% (WAM scenario). Historic values of 2020 reach 44%, so the WAM scenario leads to an increase by 13%-points in 2030. An increase remains also if only domestic electricity demand is considered (WAM RE to meet demand), in which case 49.4% overall RES share is achieved.

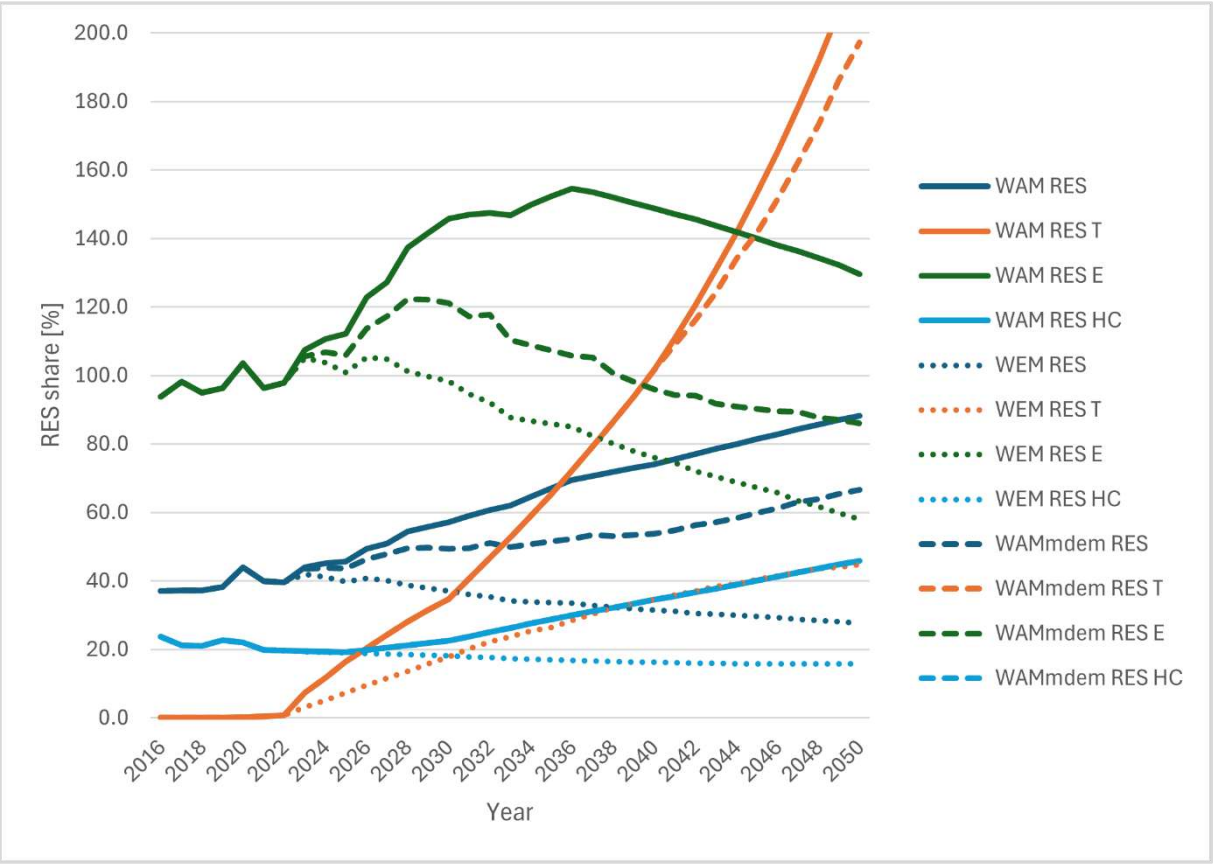

Figure 96: RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) for historic years 2016-2023 and projections up to year 2050 with additional measures. Values from WEM scenario are also indicated.

Values in percent	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE to meet demand								
RES	44.1	39.9	39.6	43.4	43.6	**49.4**	53.8	66.7
RES T	0.3	0.5	0.8	7.3	16.4	**34.8**	101.5	197.3
RES E	103.5	96.3	97.9	105.5	106.0	**121.2**	96.0	86.1
RES HC	22.0	19.8	19.7	19.5	19.1	**22.6**	34.5	45.9
WAM								
RES	44.1	39.9	39.6	44.0	45.6	57.1	74.0	88.1
RES T	0.3	0.5	0.8	7.3	16.4	34.8	101.5	222.7
RES E	103.5	96.3	97.9	107.4	112.1	145.8	148.8	129.6
RES HC	22.0	19.8	19.7	19.5	19.1	22.6	34.5	45.9
WEM								
RES	44.1	39.9	39.6	41.9	39.7	**37.1**	31.5	27.6
RES T	0.3	0.5	0.8	3.1	7.4	**17.8**	34.6	44.8
RES E	103.5	96.3	97.9	105.0	100.9	**98.3**	76.1	58.0
RES HC	22.0	19.8	19.7	19.4	19.0	**18.1**	16.2	15.7

Table 53: RES shares in final energy demand, calculated according to RED (Directive 2009/28/EC) for historic years 2020-2023 and projections up to year 2050 with additional measures (top rows) and existing measures (bottom rows).

The RES-E share is determined to a larger extent by export dynamics (Figure 97, Table 54). All scenarios achieve values greater than 100% in 2030, the WAM scenario achieving 145.8% RES-E share. In all scenarios, this is largely determined by the RES-E share for hydro power, which by itself achieves 112.3% in the WAM scenario. Note that these values are particularly sensitive to the normalisation under the methodology foreseen by the regulation (Eurostat SHARES), where historic availability determines the accounting.

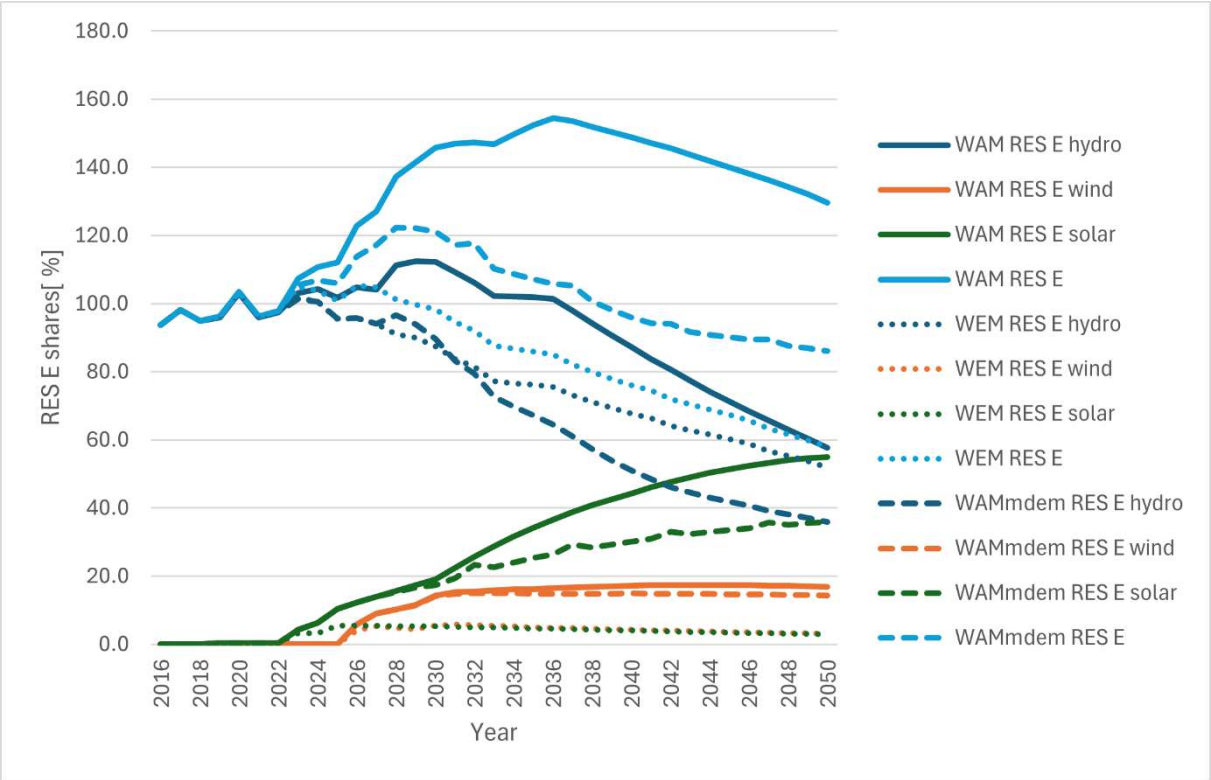

Figure 97: RES-E share, calculated according to RED (Directive 2009/28/EC) for historic years 2016-2023 and projections up to year 2050 with additional measures. WEM values are given for reference.

Values in percent	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE to meet demand								
RES E hydro	103.1	95.9	97.5	101.3	95.6	**89.7**	51.0	36.0
RES E wind	-	-	-	-	-	**14.1**	14.9	14.2
RES E solar	0.3	0.3	0.3	4.2	10.4	**17.4**	30.1	35.8
RES E	103.5	96.3	97.9	105.5	106.0	**121.2**	96.0	86.1
WAM								
RES E hydro	103.1	95.9	97.5	103.1	101.7	**112.3**	87.2	57.7
RES E wind	-	-	-	-	-	**14.4**	17.2	16.9
RES E solar	0.3	0.3	0.3	4.2	10.4	**19.1**	44.3	55.0
RES E	103.5	96.3	97.9	107.4	112.1	**145.8**	148.8	129.6
WEM								
RES E hydro	103.1	95.9	97.5	101.7	95.4	**87.5**	67.8	52.0
RES E wind	-	-	-	-	-	**5.5**	4.3	3.1
RES E solar	0.3	0.3	0.3	3.3	5.5	**5.3**	4.0	2.9
RES E	103.5	96.3	97.9	105.0	100.9	**98.3**	76.1	58.0

Table 54: RES-E share, calculated according to RED (Directive 2009/28/EC) for historic years 2020-2023 and projections up to year 2050 with additional measures. WEM total is given for reference.

In order to allow for a more detailed assessment of the RES E share and how it is linked to the capacity expansion, the following figures show more detail. Figure 98 shows the normalised generation of RE plants (normalised according to SHARES, as they go into the RES E share) as well as the corresponding RES E share for the WAM scenario and WAM RE to meet demand. The use of wind power is rather close in both scenarios. Solar PV differs in its use, the generation in WAM RE to meet demand still showing some influence of the dry years not visible in hydro generation due to the long timespan underlying the normalisation. By far the largest contribution to RES E is provided by hydro power, as already mentioned above.

It is now interesting to bring this in conjunction with the capacities that are actually added to the system. These capacities are given in Figure 99, Figure 100 showing the same for the WEM scenario for comparison. This shows how the large power plants foreseen under the WAM scenario contribute to the change in the RES share. After 2030, only solar PV plants and wind plants are added. This explains why the RES E share goes down after reaching a peak in 2036, since the demand for electricity continues to rise. For reference, Table 55 lists the capacities added to the system under the WAM scenario. Note that that WAM and WAM RE to meet demand differ not in capacities but only in the way these capacities are employed.

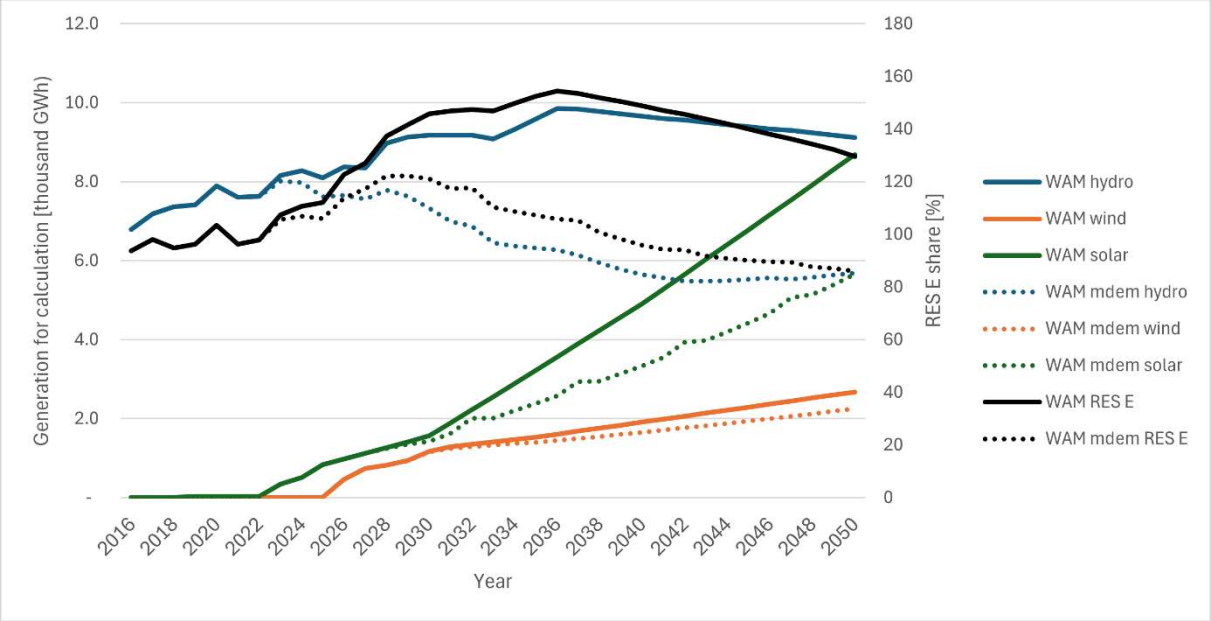

Figure 98: Normalised generation of renewable power plants and the correxponding RES E share for WAM scenario and WAM RE to meet demand (WAM mdem)..

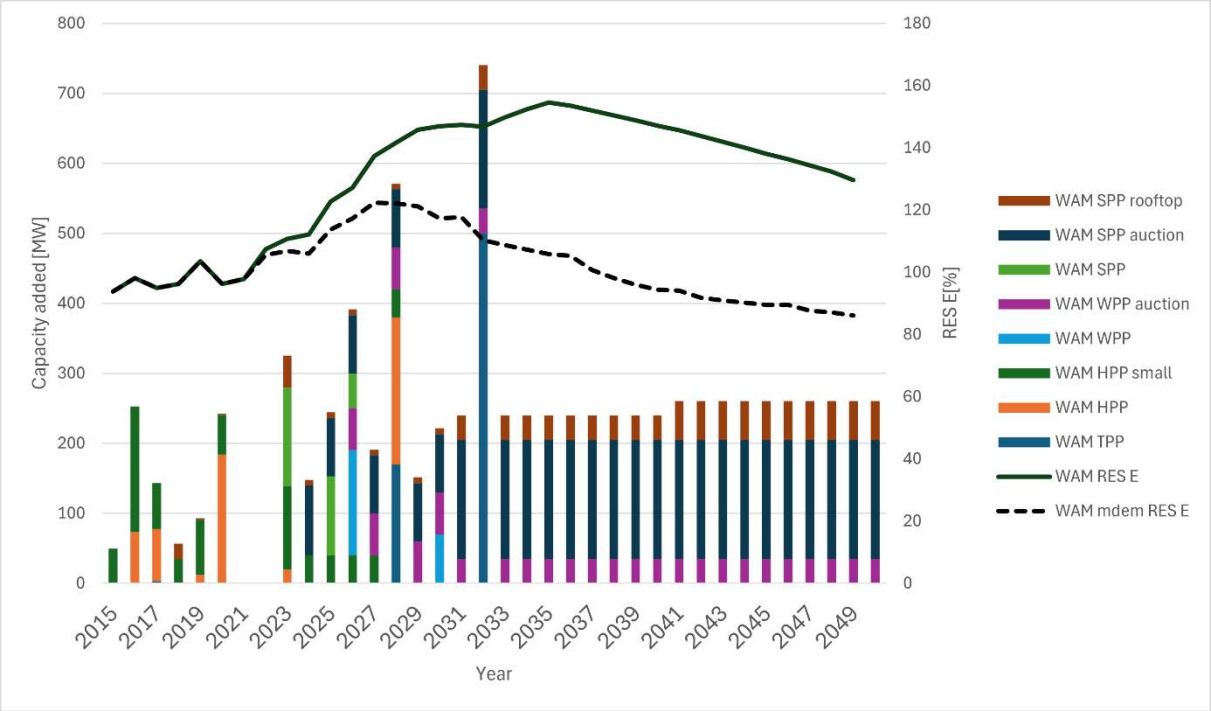

Figure 99: Capacities added to the modelling system. Note that the projects are not all listed for readability, but grouped according to technology. However, large projects in separate years still stand out. Note also that WAM and WAM RE to meet demand differ not in capacities but only in the way these capacities are employed.

	2020-2025	2026-2030	2031-2040	2041-2050
TPP Korca	-	-	500.0	-
HPP Ashta	-	-	-	-
HPP Moglice	197.0	-	-	-
HPP Banje	-	-	-	-
HPP Fangu	6.6	-	-	-
HPP Skavica	-	210.0	-	-
sHPP Run of River	256.3	120.0	-	-
SPP Vau Dejes Floating PV	12.9	-	-	-
SPP Belshi PV	-	50.0	-	-
SPP Karavasta	140.0	-	-	-
SPP Spitalla	100.0	-	-	-
SPP auctioned	183.3	416.7	1,700.0	1,700.0
SPP rooftop	63.1	38.9	350.0	550.0
WPP Lezhe	-	220.0	-	-
WPP auctioned	-	300.0	350.0	350.0
TPP Waste to Energy	-	-	-	-
TPP Roskovec	-	170.0	-	-

Table 55: Power genearation capacities [MW] added to the system under the WAM scenario.

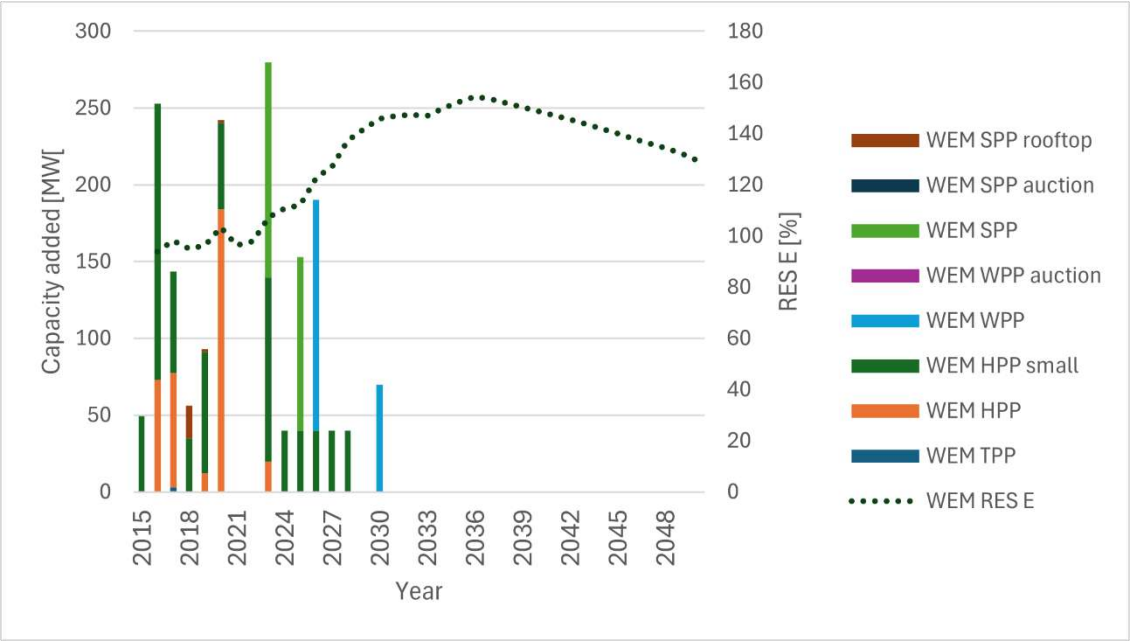

Figure 100: As Figure 99 but for the WEM scenario.

	2020-2025	2026-2030	2031-2040	2041-2050
HPP Ashta	-	-	-	-
HPP Moglice	197.0	13.0	13.0	13.0
HPP Banje	-	-	-	-
HPP Fangu	6.6	6.6	6.6	6.6
sHPP Run of River	256.3	240.0	280.0	320.0
SPP Vau Dejes Floating PV	12.9	12.9	12.9	12.9
SPP Karavasta	140.0	140.0	140.0	140.0
SPP Spitalla	100.0	100.0	100.0	100.0
SPP rooftop	2.0	-	-	-
WPP Lezhe	-	150.0	150.0	150.0
TPP Waste to Energy	-	-	-	-
TPP Vlora	197.0	13.0	13.0	13.0

Table 56: Power genearation capacities [MW] added to the system under the WEM scenario.

The following figure shows fuels currently used in the transport sector and projections until 2050 in the scenario with additional measures. Biodiesel share is relatively limited and is gradually taken over by electricity and hydrogen. Electricity is used to meet more than 40% of the energy demand in transportation by 2050 and the majority is of renewable origin.

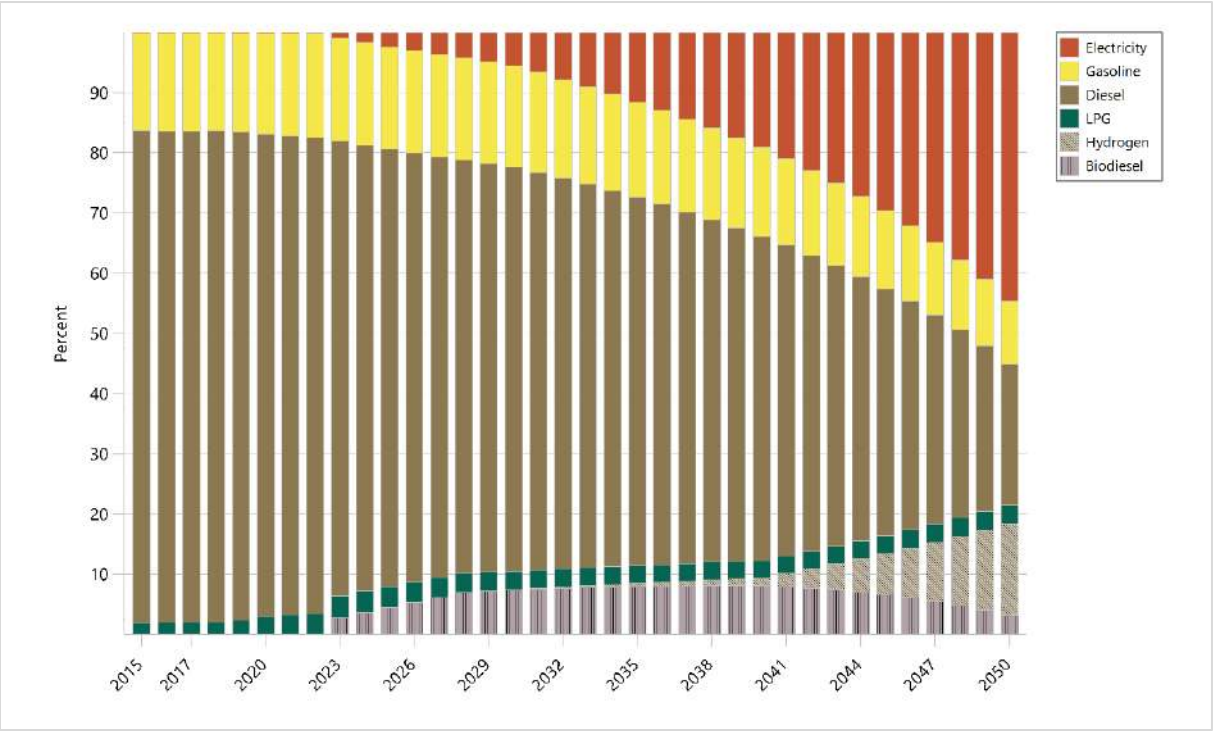

Figure 101: Energy sources in the transport sector, shown to accompany and explain the RES-T share given in Figure 43

Fuel	2020	2021	2022	2023	2025	2030	2040	2050
Electricity	0.1%	0.1%	0.2%	0.9%	2.4%	**5.5%**	19.1%	44.7%
Gasoline	16.8%	17.1%	17.2%	17.1%	17.0%	**16.9%**	14.8%	10.5%
Diesel	80.2%	79.6%	79.2%	75.7%	72.6%	**67.2%**	53.9%	23.4%
LPG	2.9%	3.2%	3.4%	3.6%	3.5%	**3.1%**	2.9%	3.2%
Hydrogen	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	1.3%	15.1%
Biodiesel	0.0%	0.0%	0.0%	2.7%	4.5%	**7.4%**	8.1%	3.1%

Table 57: Shares of energy sources in the transport sector for historic years 2020-2023 and projected up to year 2050 with additional measures

The RES-HC share combines all renewable energies other than electricity, heat and bioliquids in sectors other than transport. This concerns the residential, services, industry, agriculture and fisheries sectors and the fuels wind, solar, wood, hydro and biomass. Of these, only solar and wood play a substantial role, both are used for space and water heating as well as some industrial processes. Agriculture and fisheries do not use renewable energies (other than through electricity, which remains unconsidered here). The following table gives the share of wood and solar energy in relation to the total final energy in each of the remaining three sectors. Note that the RES-HC share reports the share of renewable energy in relation to the final energy demand other than electricity, which explains the higher percentage in RES-HC compared to the values shown in the following table.

	2016	2017	2018	2020	2025	2030	2040	2050
Residential								
Wood	22.4%	21.4%	21.3%	21.4%	21.6%	22.4%	22.7%	20.4%
Solar	1.5%	1.6%	1.6%	1.7%	2.1%	3.3%	5.2%	7.8%
Services								
Wood	6,1%	6,1%	6,1%	6,1%	6,1%	6,1%	6,1%	6,1%
Solar	2,3%	2,3%	2,3%	2,3%	2,3%	2,3%	2,3%	2,3%
Industry								
Wood	2.1%	1.7%	1.7%	1.8%	1.8%	8.7%	26.3%	37.0%
Solar	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.6%	0.9%
Total FE Demand								
Wood	7.8%	7.1%	6.9%	6.9%	6.8%	8.0%	12.9%	17.8%
Solar	0.7%	0.7%	0.7%	0.7%	0.8%	1.0%	1.4%	2.0%

Table 58: Shares of wood and solar energy in final energy demand of the sectors, which make use of these fuels as, projected for the WAM scenario. Note that the shares here do not equal the RES HC share, as the reference in RES HC is not final energy, but final energy other than electricity.

Dimension Energy Efficiency

This section details projections with additional measures for the energy consumption of the economy. It starts with an overview of primary energy supply for all fuels, which completes the discussion of differences in renewable shares in primary energy supply between WEM and WAM in the previous section. This is followed by an assessment of final energy demands, also in a sectoral view of final energy consumption patterns.

Primary energy supply

As an introduction to primary energy supply in the Albanian economy, Table 59 shows a comparison of primary energy supply in the WEM scenario (from Chapter 4) and the WAM scenarios (this chapter), considering also the variant of WAM in which RE power plants run to meet domestic demand only.

In all scenarios, net energy demand is increasing in total. While in the WEM scenario, net primary energy consumption increases (compared to 2020) by 21.3% until 2030 and 97.3% until 2050, it increases only by 14.8% until 2030 and 48.5% until 2050 in the WAM scenario. Comparatively, the consumption in the WAM scenario decreases compared to the WEM scenario by 6.4 % in 2030 and 48.8% in 2050. Note that the difference between 'WAM RE to meet demand' and WAM is not in net values but in the primary production and exports. Excess electricity is exported in 'WAM RE to meet demand', while net consumption remains almost equal.

[ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
WAM RE to meet demand								
Primary production and imports	2,660.2	2,775.2	2,872.5	2,755.1	2,785.5	2,897.3	3,190.3	3,629.9
Exports	-540.3	-522.6	-606.2	-466.0	-464.2	-464.2	-472.2	-482.6
Net value	2,119.9	2,252.6	2,266.2	2,289.2	2,321.3	2,433.2	2,718.1	3,147.3
Net value change rel. to 2018 [%]		6.3%	6.9%	8.0%	9.5%	14.8%	28.2%	48.5%
WAM								
Primary production and imports	2,660.2	2,775.2	2,872.5	2,937.5	3,018.8	3,355.9	3,717.3	4,200.5
Exports	-540.3	-522.6	-606.2	-647.2	-696.1	-920.9	-997.8	-1,052.3
Net value	2,119.9	2,252.6	2,266.2	2,290.3	2,322.7	2,435.0	2,719.5	3,148.2
Net value change rel. to 2020 [%]		6.3%	6.9%	8.0%	9.6%	14.9%	28.3%	48.5%
WEM								
Primary production and imports	2,660.2	2,775.2	2,872.5	2,769.0	2,837.9	3,029.1	3,681.1	4,619.3
Exports	-540.3	-522.6	-606.2	-465.9	-463.9	-458.6	-447.8	-436.0
Net value	2,119.9	2,252.6	2,266.2	2,303.1	2,374.0	2,570.5	3,233.3	4,183.3
Net value change rel. to 2020 [%]		6.3%	6.9%	8.6%	12.0%	21.3%	52.5%	97.3%
Net value relative change (WAM minus WEM)				-0.6%	-2.4%	-6.4%	-24.2%	-48.8%

Table 59: Primary energy supply [ktoe] in WAM and WEM scenarios

Figure 47 to Figure 105 give the primary energy demand by fuels as projected in the WAM scenario. By comparing Figure 47 (WAM) and Figure 103 (WAM RE to meet demand), it becomes clear that the difference is again determined by the mode of operation of renewable plants, which in particular determines the RE share discussed above. This is also one of the main drivers between WEM and WAM in terms of primary energy supply (Figure 105), others being the reduction of fossil fuel use in transport and industry by fuel switch and energy efficiency measures.

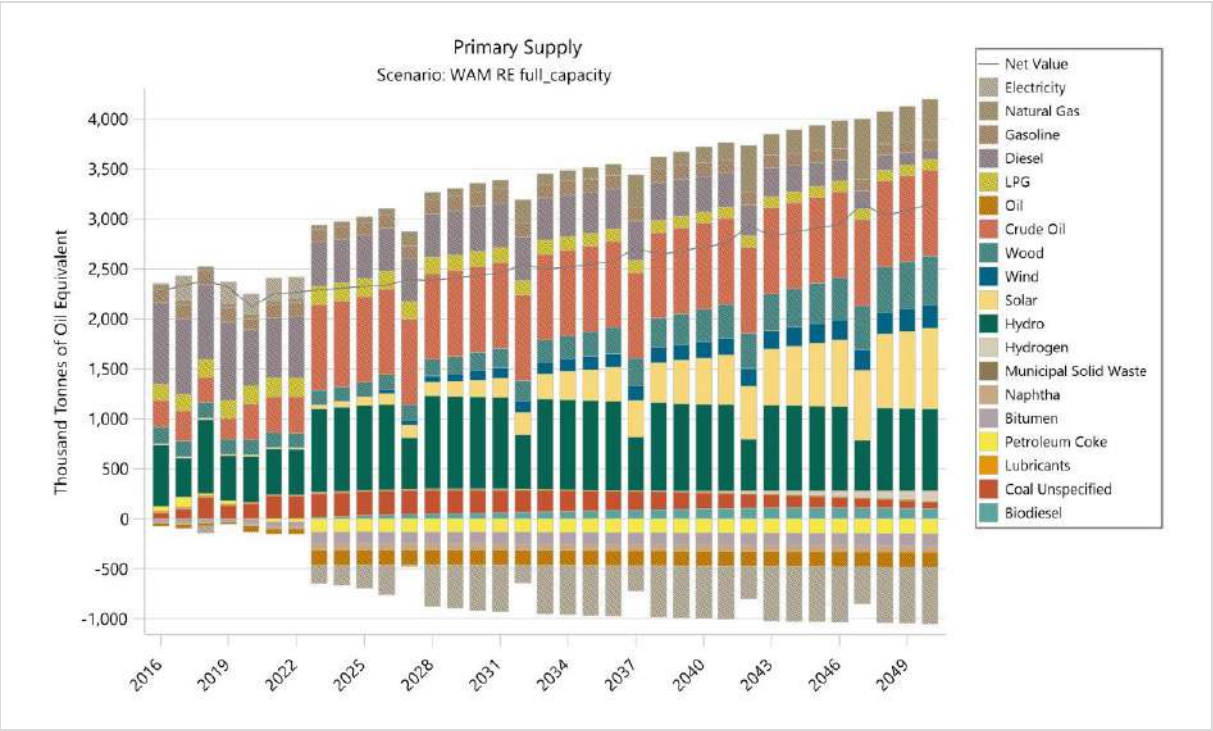

Figure 102: Primary energy supply for historic years 2016-2023 and as projected up to the year 2050 with additional measures

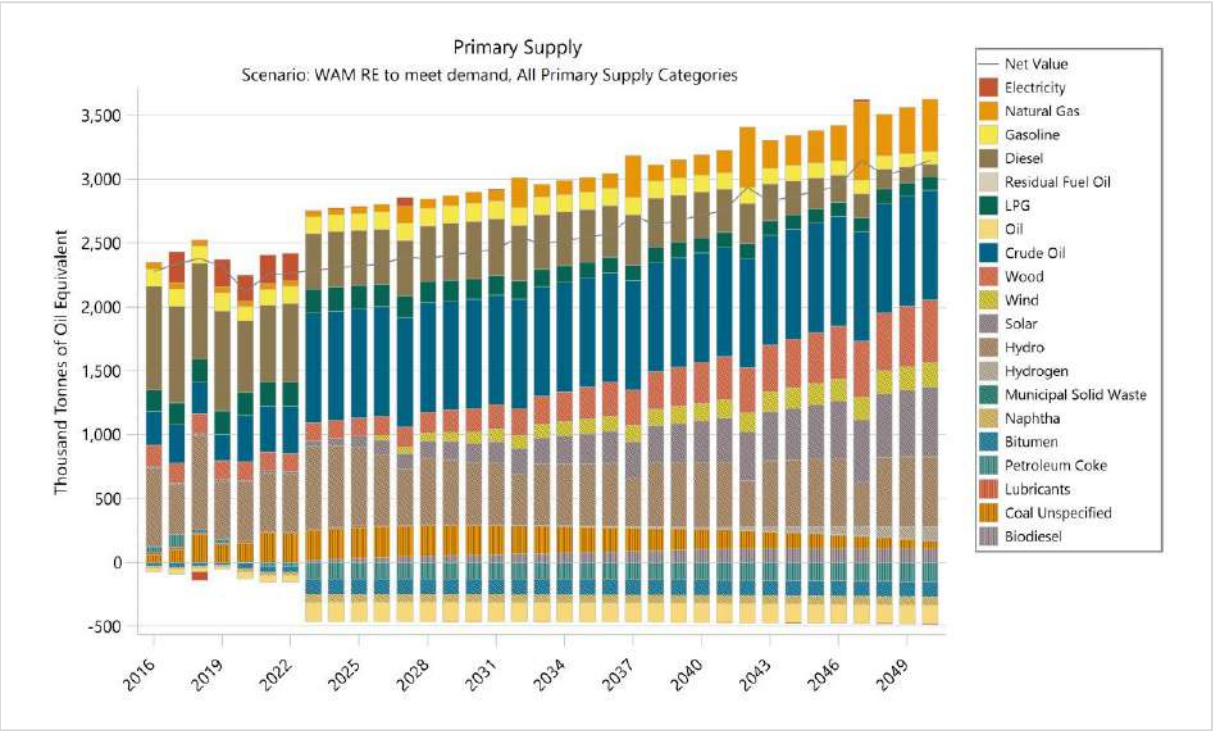

Figure 103: Primary energy supply for historic years 2016-2023 and as projected up to the year 2050 with additional measures when renewable energy plants run only to meet the domestic energy need

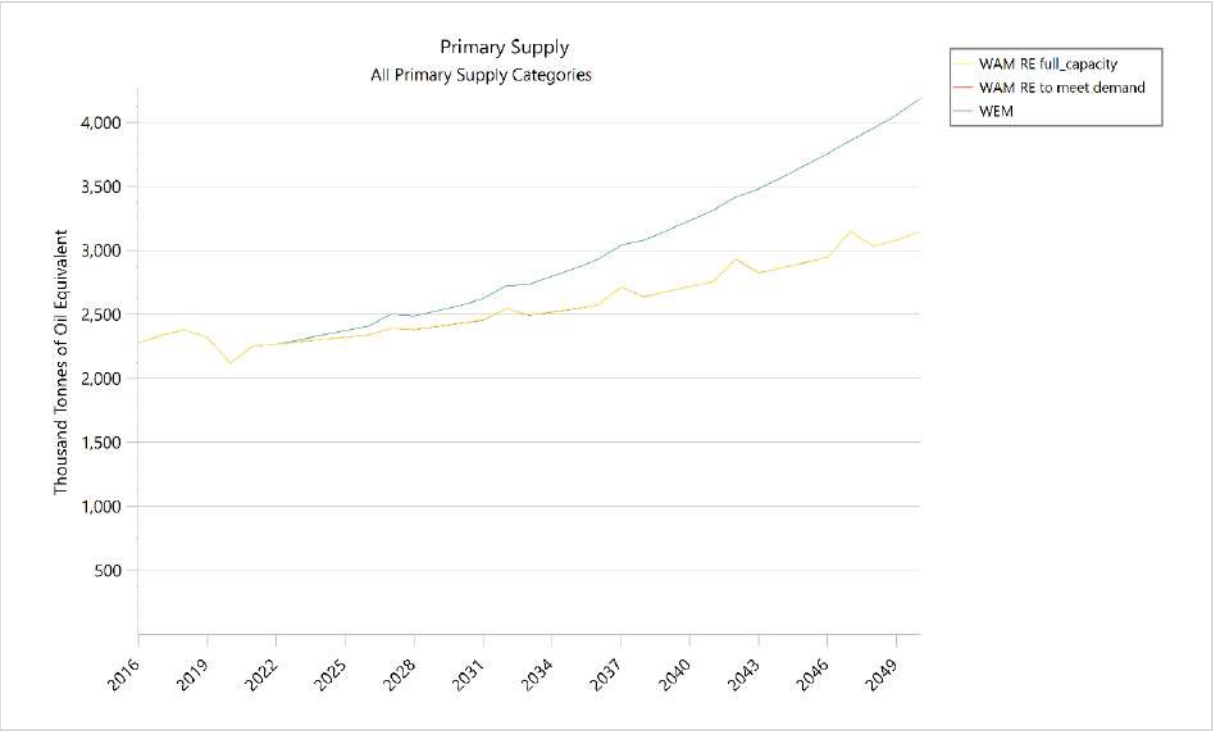

Figure 104: Net value of primary energy supply for historic years 2016-2023 and as projected up to the year 2030 and for 2040 and 2050 with additional measures (both variants) and with existing measures

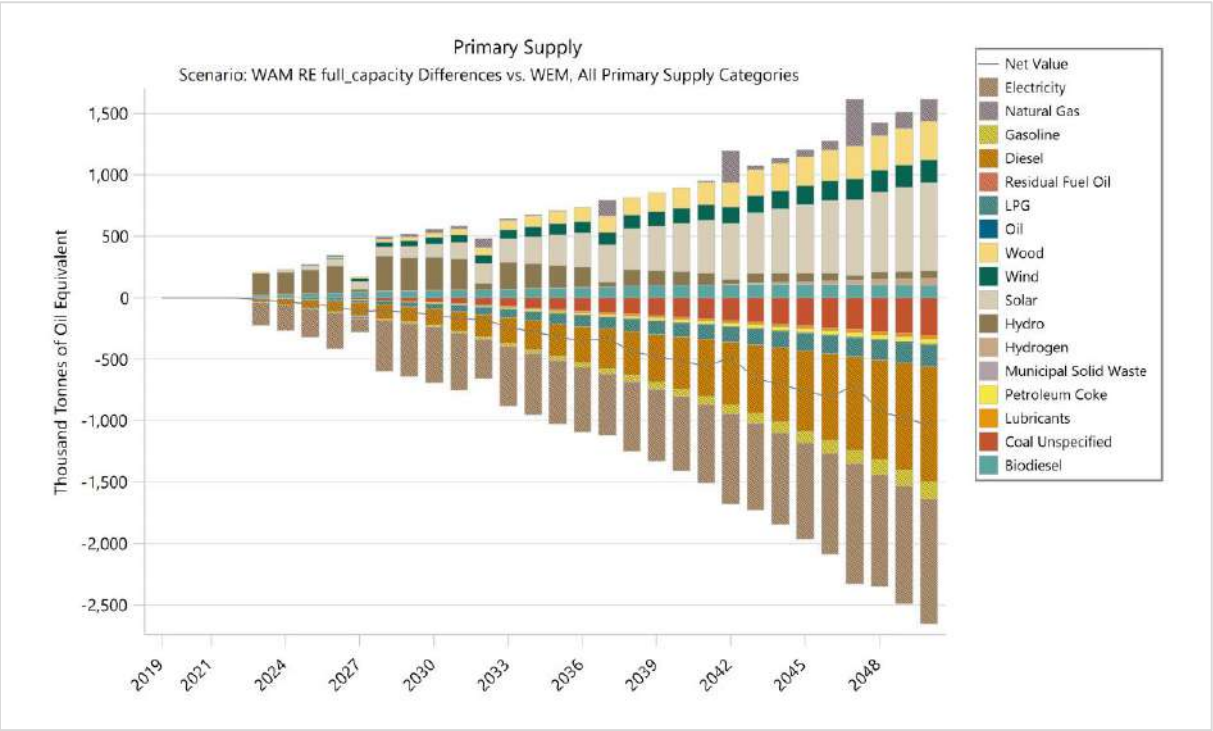

Figure 105: Primary energy supply for historic years 2016-2023 and as projected up to the year 2050. Differences between WAM (RE full capacity) and WEM broken down into subcategories.

The following table gives an overview of the primary energy supply in the WAM scenario.

Fuel [in ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Electricity	201.2	225.3	215.7	-181.2	-231.8	-456.7	-525.6	-569.7
Natural Gas	44.7	44.0	44.0	45.6	54.9	85.4	157.8	412.0
Gasoline	111.8	127.6	133.4	129.9	132.2	142.4	133.1	100.2
Diesel	561.6	599.6	619.0	434.5	429.4	449.5	358.5	94.5
LPG	178.8	191.6	190.7	187.4	182.1	158.9	117.1	109.2
Oil	-55.6	-54.9	-54.9	-153.5	-153.0	-152.1	-150.6	-149.4
Crude Oil	362.8	359.5	365.8	857.2	857.2	857.2	857.2	857.2
Wood	149.5	146.3	143.2	142.8	143.2	181.0	321.5	491.1
Wind	-	-	-	-	-	97.9	163.8	229.7
Solar	15.8	16.7	16.5	43.8	88.5	164.4	462.8	808.3
Hydro	454.7	454.7	454.7	830.5	843.7	918.5	867.7	817.0
Hydrogen	-	-	-	-	-	0.1	10.6	104.0
Municipal Solid Waste	-	-	-	3.6	3.6	3.6	3.6	3.6
Naphtha	-24.2	-24.2	-24.2	-62.6	-62.6	-62.6	-62.6	-62.6
Bitumen	-46.3	-46.3	-46.3	-120.0	-120.0	-120.0	-120.0	-120.0
Petroleum Coke	-2.7	-29.4	-29.4	-129.8	-128.6	-129.5	-138.9	-150.6
Lubricants	15.3	10.4	10.4	10.9	11.9	9.0	4.9	7.6
Coal Unspecified	152.5	231.8	227.7	231.8	240.0	231.2	156.9	62.8
Biodiesel	-	-	-	19.4	32.1	56.8	101.6	103.2
Total	2,119.9	2,252.6	2,266.2	2,290.3	2,322.7	2,435.0	2,719.5	3,148.2

Table 60: Primary energy supply for historic years 2020-2023 and as projected up to the year 2030 and for 2040 and 2050 for WAM. Negative values indicate exports.

Final energy demand

As an introduction to final energy demand in the Albanian economy, Table 61 shows a comparison of final energy consumption of energy demand sectors between the WEM scenario (from Chapter 4) and the WAM scenario (this chapter). In both scenarios, energy demand is increasing in total.

While in the WEM scenario, final energy consumption increases (compared to 2020) by 24.4% until 2030, 55.3% until 2040 and 101% in 2050, it increases only by 17.4% until 2030, 30% until 2040 and 43.8% in 2050 in the WAM scenario. Comparatively, the final energy consumption in the WAM scenario decreases compared to the WEM scenario by 6.9% in 2030, 25.3% in 2040 and 57.4% in 2050.

Branch	2020	2021	2022	2023	2025	2030	2040	2050
WAM								
Residential	520.2	524.5	512.4	504.1	489.2	453.4	426.0	483.4
Services	197.7	218.8	218.8	224.7	239.3	268.4	313.0	353.1
Industry	370.6	437.2	433.0	445.6	471.1	540.7	713.1	956.1
Transport	653.8	694.3	721.9	706.9	716.4	769.7	768.2	670.0
Agriculture Forestry	76.8	79.5	79.5	81.5	85.5	96.7	111.1	104.6
Fisheries	42.3	41.7	41.7	43.7	47.9	60.4	86.5	101.3
Nonenergy	54.7	54.7	54.7	53.9	56.1	61.4	72.8	86.9
Total WAM	1,916.1	2,050.7	2,062.0	2,060.4	2,105.7	2,250.6	2,490.7	2,755.3
WAM change relative to 2020 [%]		7.0%	7.6%	7.5%	9.9%	17.5%	30.0%	43.8%
WEM								
Residential	520.2	524.5	512.4	505.2	498.2	481.5	485.6	579.2
Services	197.7	218.8	218.8	225.7	243.3	288.4	377.1	458.2
Industry	370.6	437.2	433.0	446.0	473.5	551.6	749.8	1,036.0
Transport	653.8	694.3	721.9	718.7	752.5	842.1	1,065.6	1,374.6
Agriculture Forestry	76.8	79.5	79.5	81.5	85.5	96.7	123.4	157.6
Fisheries	42.3	41.7	41.7	43.7	47.9	60.4	96.1	152.7
Nonenergy	54.7	54.7	54.7	54.1	56.5	62.4	78.2	97.2
Total WEM	1,916.1	2,050.7	2,062.0	2,074.8	2,157.4	2,383.0	2,975.7	3,855.4
WEM change relative to 2020 [%]		7.0%	7.6%	8.3%	12.6%	24.4%	55.3%	101.2%
Relative reduction (WAM minus WEM)			-0.7%	-2.7%	-6.9%	-25.3%	-57.4%	-0.7%

Table 61: Final energy consumption (ktoe) for energy demand sectors in the WEM and WAM scenarios

The consumption patterns of energy demand sectors are expected to change in the future and more so with additional measures. As can be seen from the following figures, the share of energy consumption of the transport sector is slightly decreased in percentage, as well as the share of the residential sector.

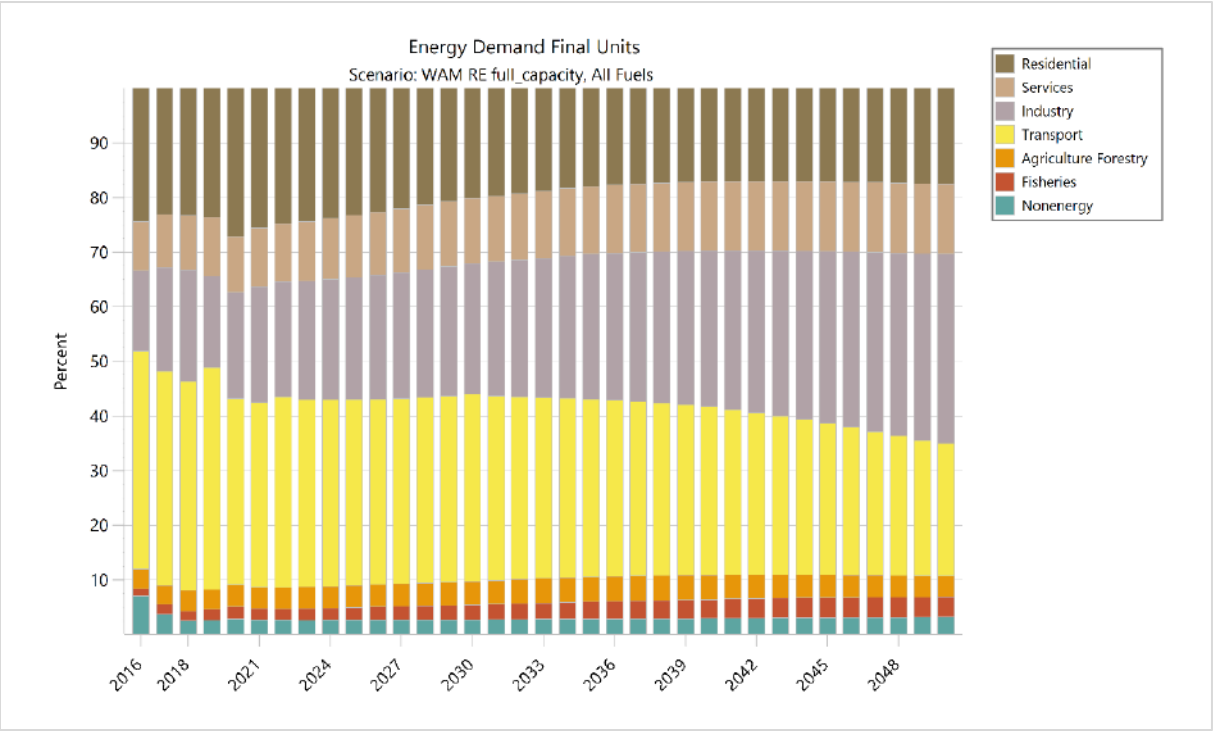

Figure 106. Shares of final energy demand for the demand sectors for historic years 2016-2023 and as projected up to the year 2050 with additional measures

Branch	2020	2021	2022	2023	2025	2030	2040	2050
Residential	27.1%	25.6%	24.9%	24.3%	23.1%	20.2%	16.3%	15.0%
Services	10.3%	10.7%	10.6%	10.9%	11.3%	12.1%	12.7%	11.9%
Industry	19.3%	21.3%	21.0%	21.5%	21.9%	23.1%	25.2%	26.9%
Transport	34.1%	33.9%	35.0%	34.6%	34.9%	35.3%	35.8%	35.7%
Agriculture Forestry	4.0%	3.9%	3.9%	3.9%	4.0%	4.1%	4.1%	4.1%
Fisheries	2.2%	2.0%	2.0%	2.1%	2.2%	2.5%	3.2%	4.0%
Nonenergy	2.9%	2.7%	2.7%	2.6%	2.6%	2.6%	2.6%	2.5%

Table 62: Shares of final energy demand for the demand sectors for historic years 2020-2023 and as projected up to the year 2030 and for 2040 and 2050 with additional measures

Energy consumption in absolute values is presented and compared to the WEM scenario in the following figures. First, total numbers are given, followed by details for each demand sector. Table 63 gives the numbers shown in the figures for reference.

Figure 107 to Figure 110 shows overall WAM scenario values and the comparison with the WEM scenario. The overall energy demand continues to grow in the WAM scenario, however the PaMs considered in addition to WEM lead to a decrease in the energy demand compared to the WEM projection (Figure 110). Transportation, residential and services sector are the sectors which see a notable decrease of energy demand in the WAM scenario compared to the WEM scenario (Figure 110).

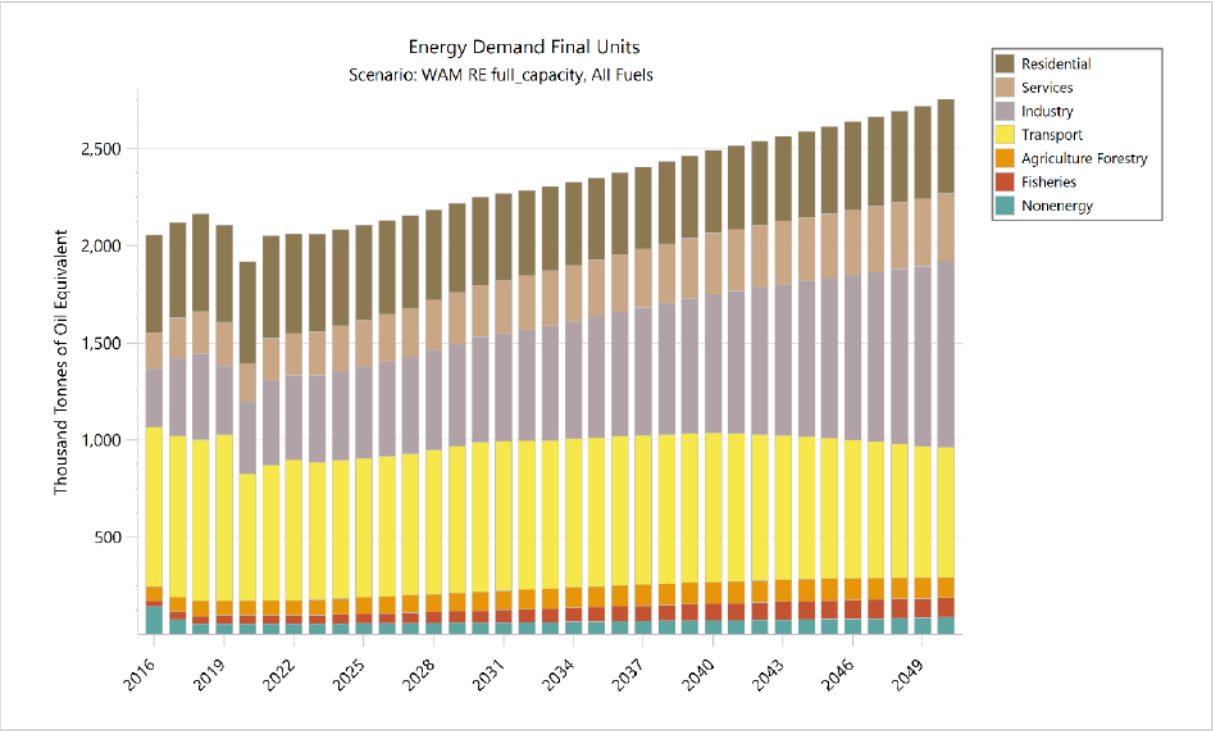

Figure 107: Final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected until 2050

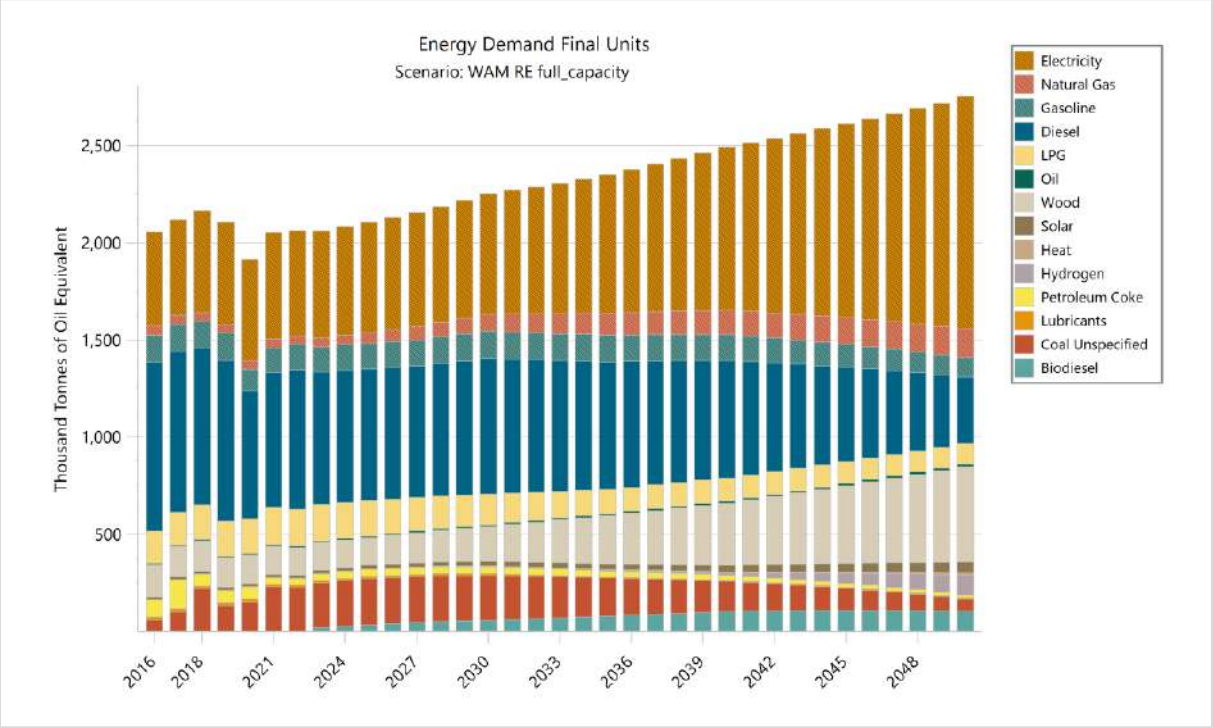

Figure 108: Fuel split underlying the final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected until 2050

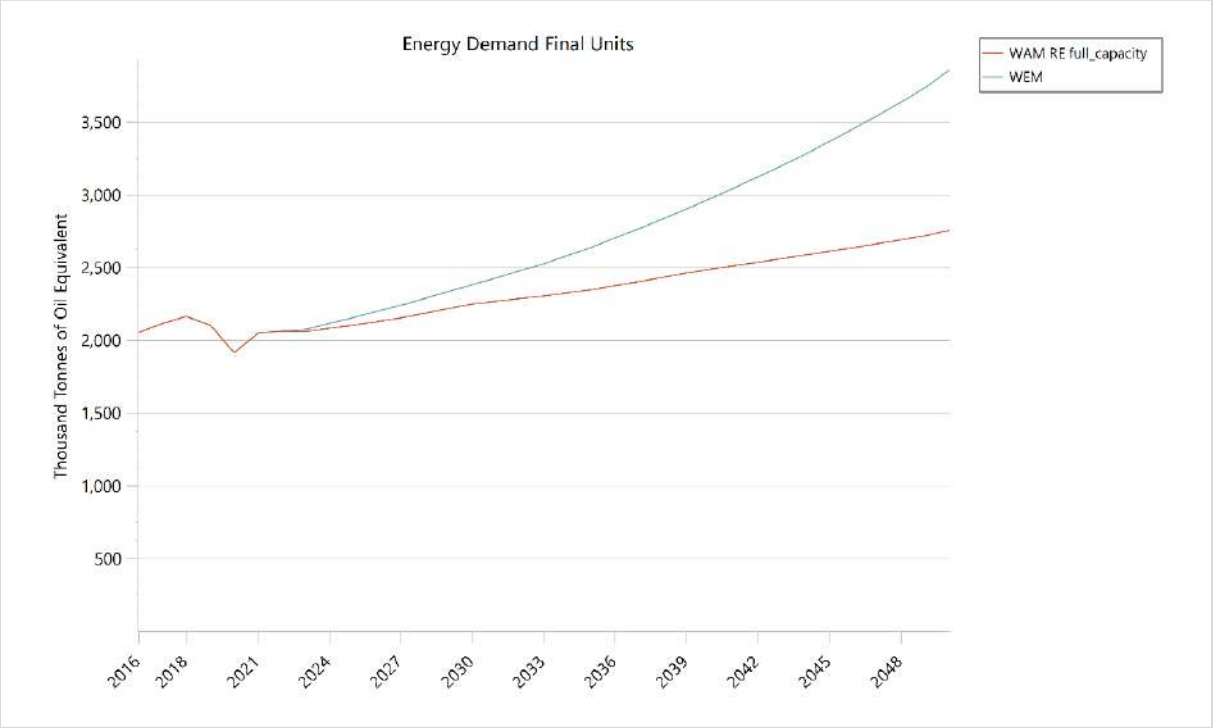

Figure 109: Final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected until 2040, given for 2019-2030 and for 2040 and 2050. Scenario comparison with the "with existing measures" scenario presented in Chapter 4.

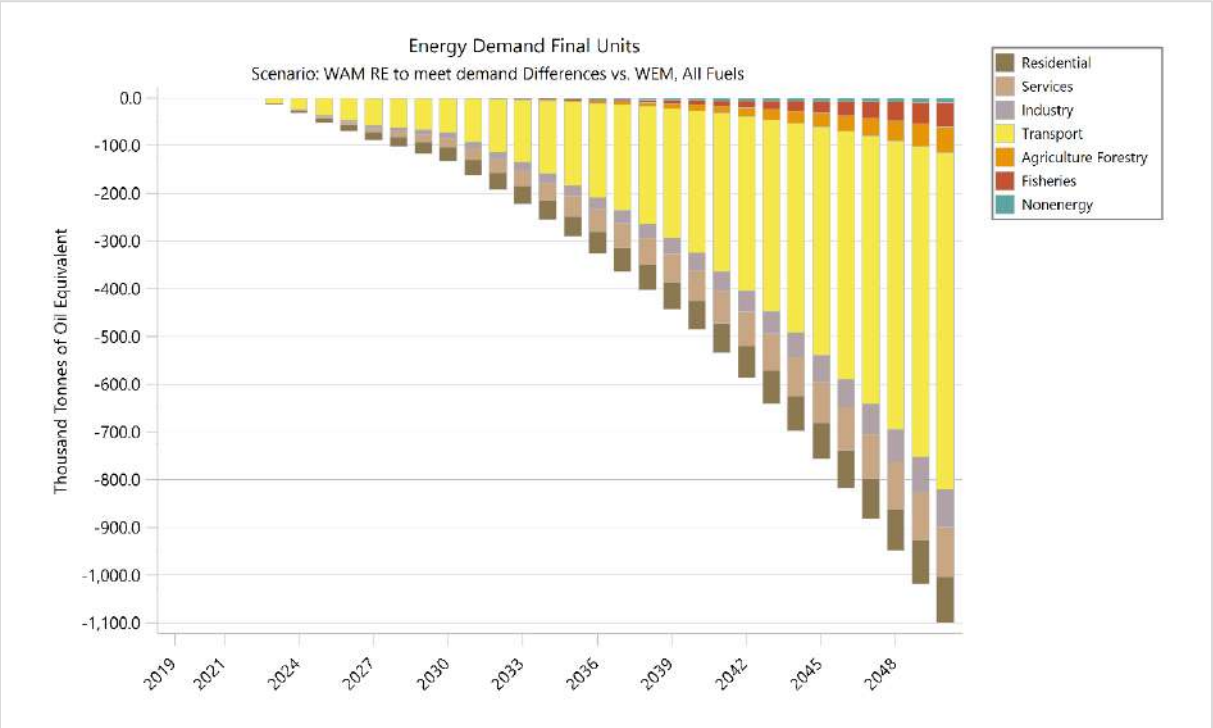

Figure 110: Final energy consumption (ktoe) for all main demand sectors for historic values from 2016-2023 and as projected until 2040, given for 2019-2030 and for 2040 and 2050. Differences between WAM final and WEM broken down into subcategories.

The residential sector (Figure 111) is expected to show a decrease in energy demand until 2035 due to a high construction rate and therefore a rapid introduction of more energy efficient buildings. The rise in penetration of space cooling technologies in Albanian households, leads to an increase of the energy consumption for space cooling, but his is kept at a moderate level due to the improved energy performance of buildings. In the services sector (Figure 113), the public subsectors (public administration, education and health) are expected to decrease energy consumption. However, the private services subsectors are targeted by fewer policies and at the same time show a very strong expected growth, leading to a further growing path in energy consumption. In the industrial sector, energy demand is expected to rise in every subsector, with the Minerals sector still dominating (Figure 115). The rise is lower than in the WEM scenario, however a growth in this sector is still prevalent. In the transport sector, although economic growth and the growing need for mobility lead to an increase of the demand for transportation, the introduction of efficient vehicles (mainly electric vehicles) and model shift to public transportation and rail, lead to a stabilisation of the energy demand between 2030 and 2040 and a decrease towards 2050 (Figure 117). This applies to both passenger transport and freight (Figure 119, Figure 121). Consumption from non-energy demand (Figure 123) has been decreasing significantly in the past but is expected to increase with an increasing demand in transport.

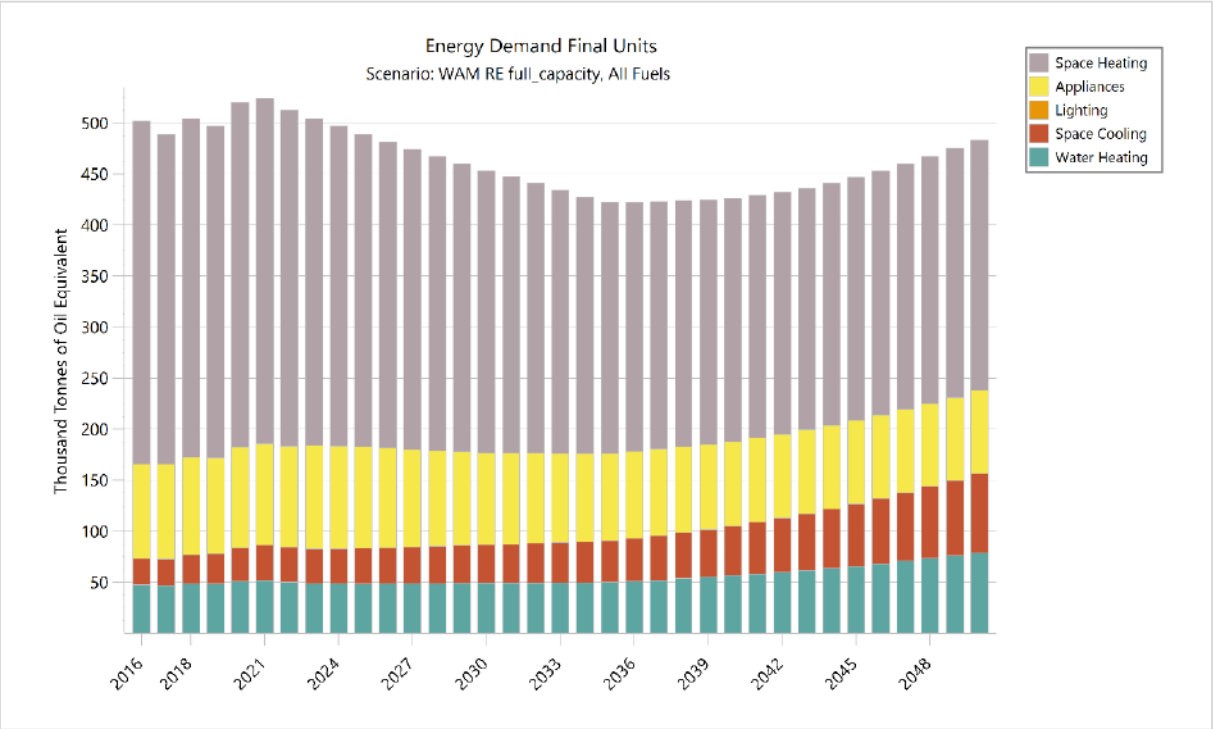

Figure 111: Final energy consumption (ktoe) for the residential sector for historic values from 2016-2023 and as projected with additional measures until 2050

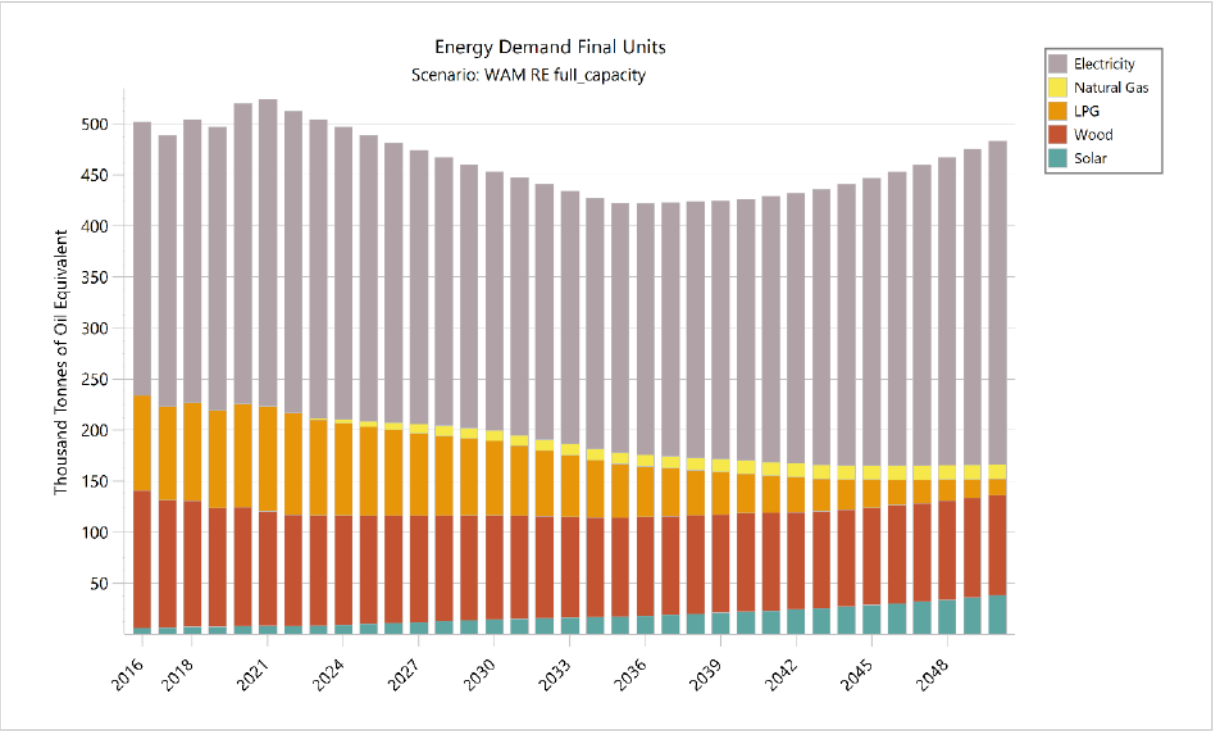

Figure 112: Fuel split underlying the final energy consumption (ktoe) for the residential sector for historic values from 2016-2023 and as projected with additional measures until 2050

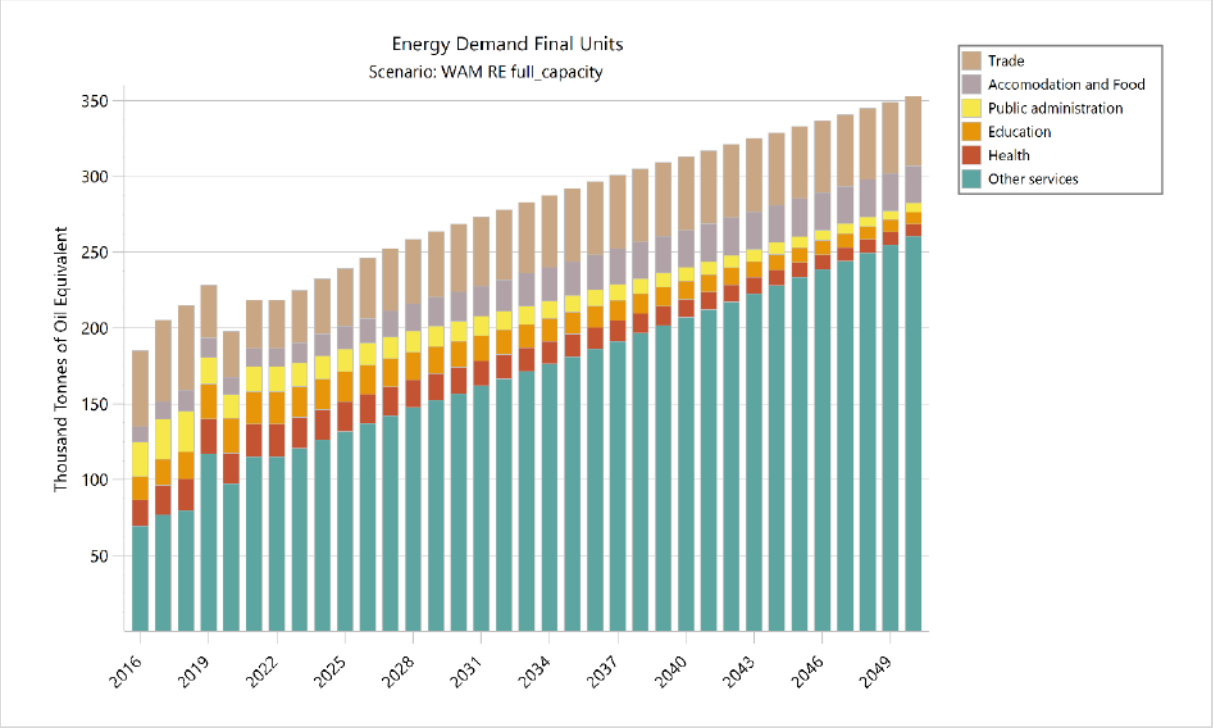

Figure 113: Final energy consumption (ktoe) for the services sector for historic values from 2016-2023 and as projected with additional measures until 2050

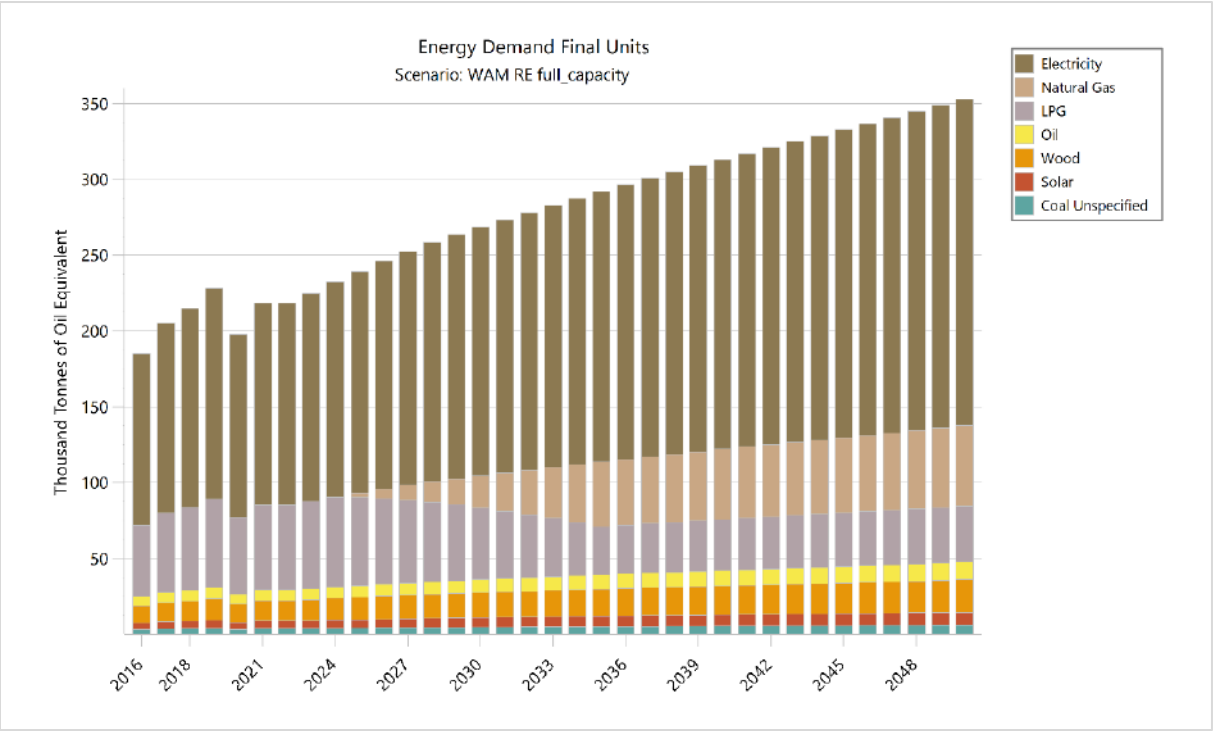

Figure 114: Fuel split underlying the final energy consumption (ktoe) for the services sector for historic values from 2016-2023 and as projected with additional measures until 2050

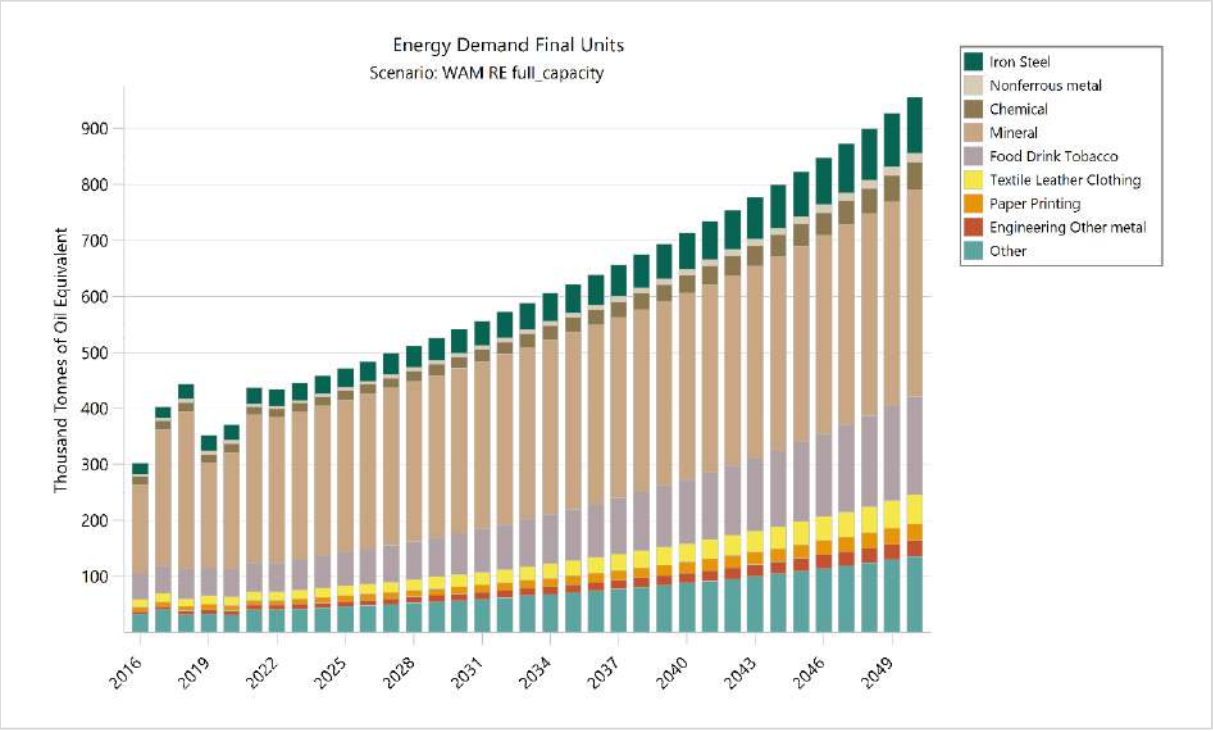

Figure 115: Final energy consumption (ktoe) for the industry sector for historic values from 2016-2023 and as projected with additional measures until 2050

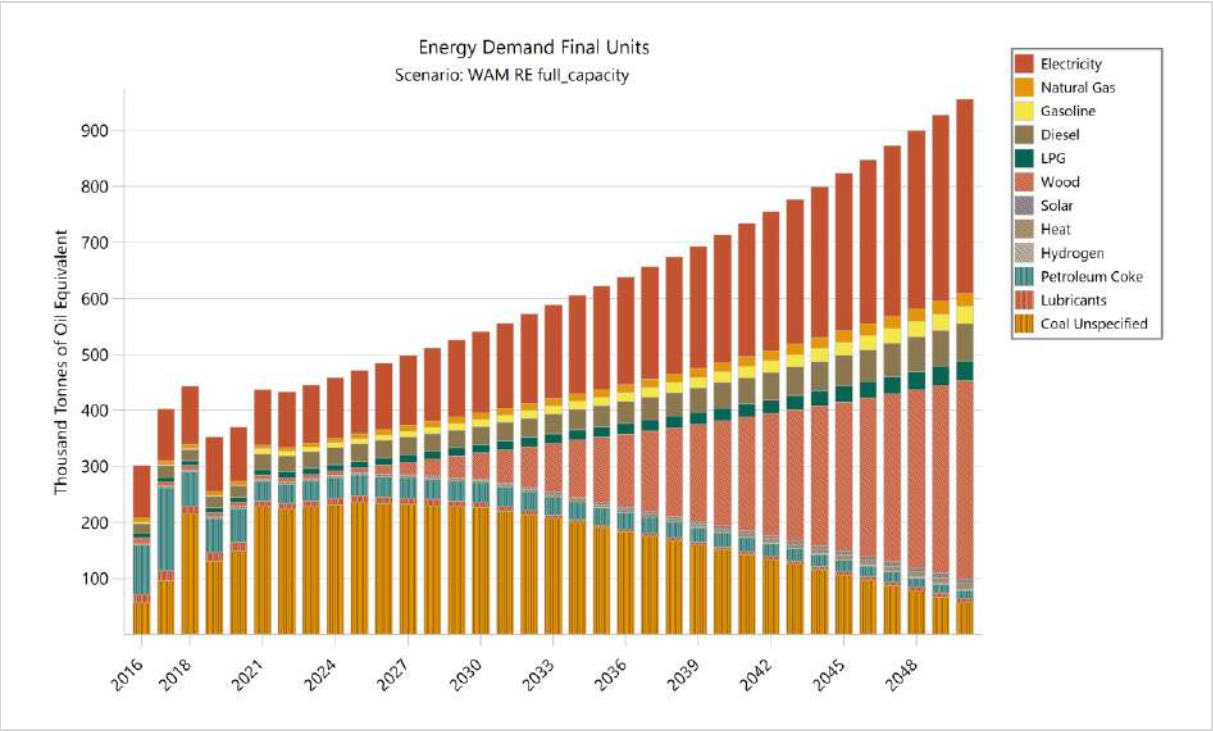

Figure 116: Fuel split underlying the final energy consumption (ktoe) for the industry sector for historic values from 2016-2023 and as projected with additional measures until 2050

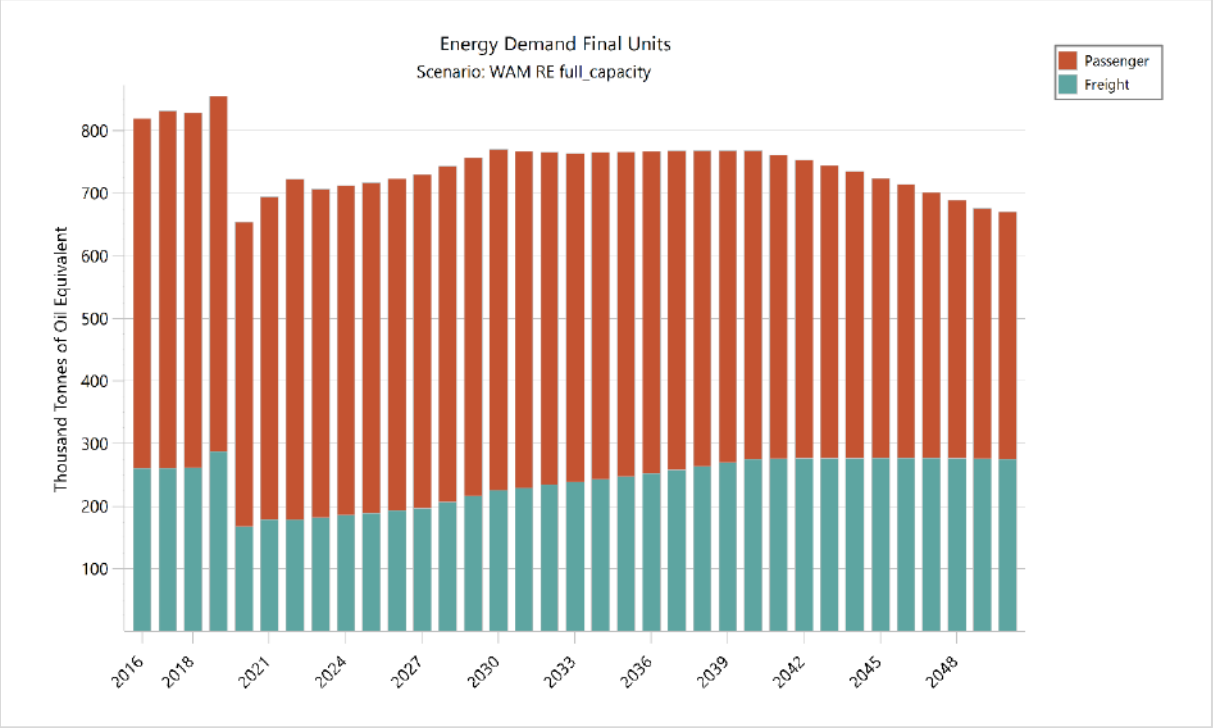

Figure 117: Final energy consumption (ktoe) for the transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

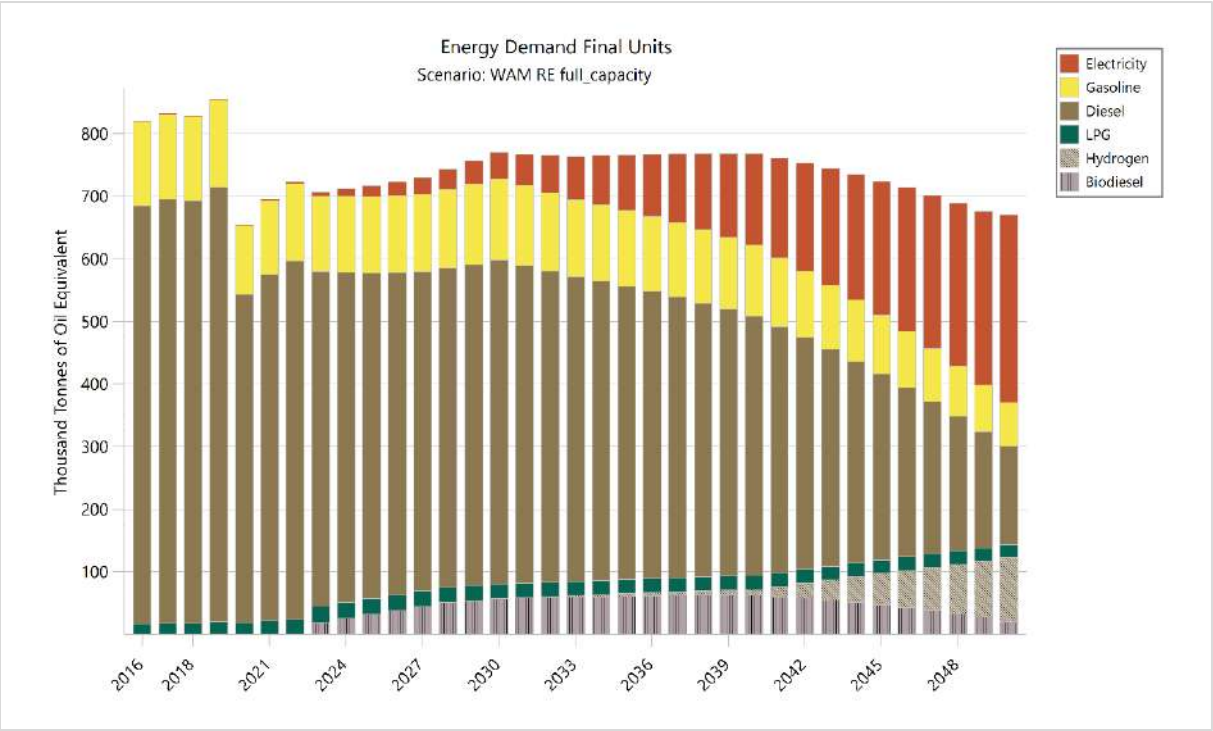

Figure 118: Fuel split underlying the final energy consumption (ktoe) for the transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

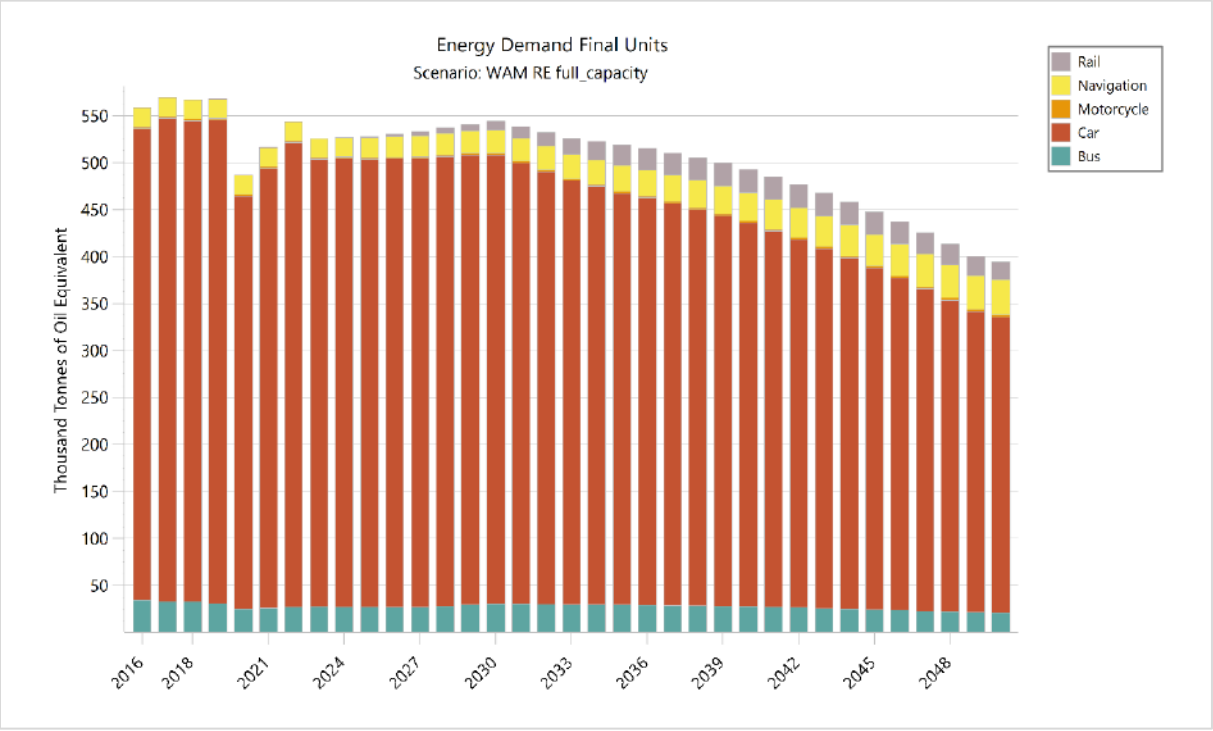

Figure 119: Final energy consumption (ktoe) for the passenger transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

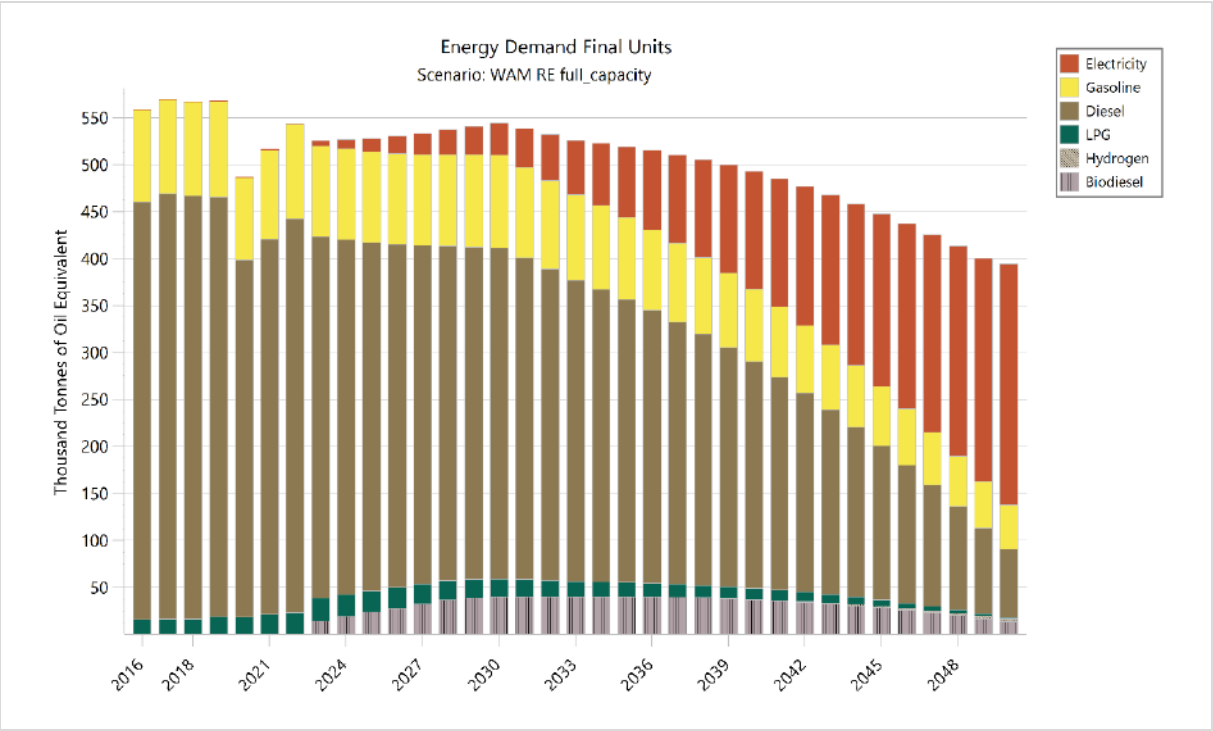

Figure 120: Fuel split underlying the final energy consumption (ktoe) for the passenger transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

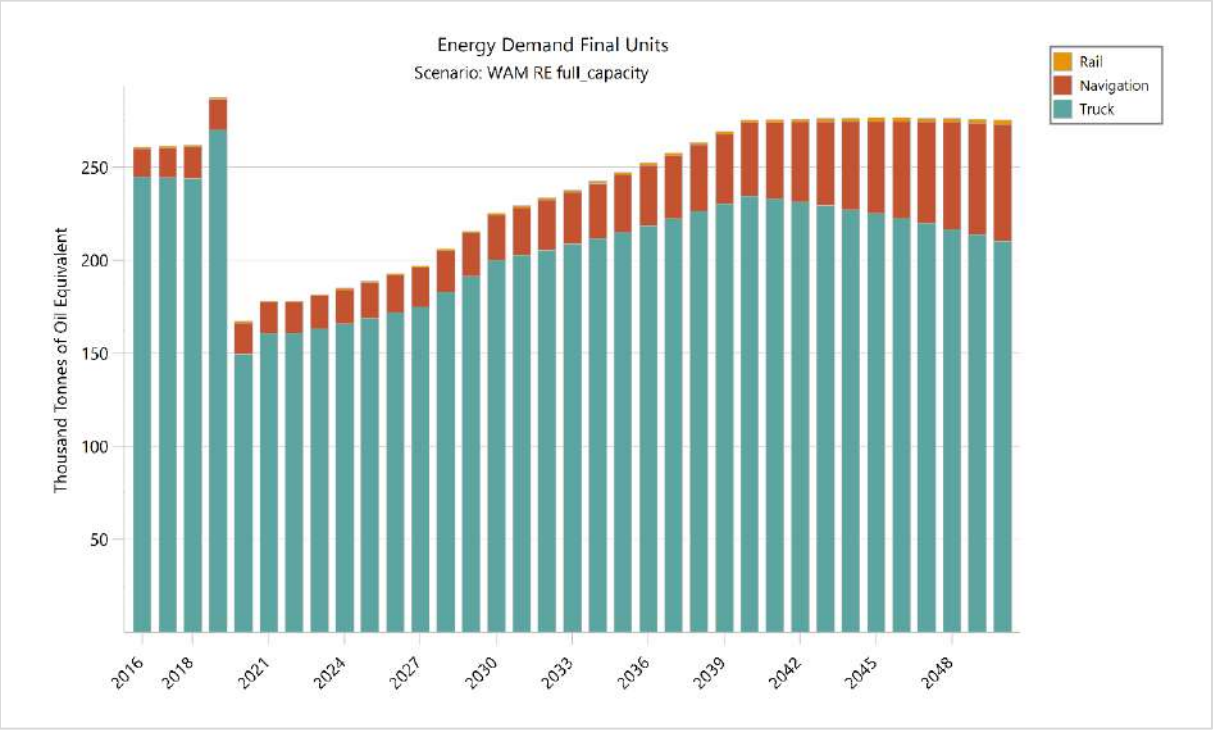

Figure 121: Final energy consumption (ktoe) for the freight transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

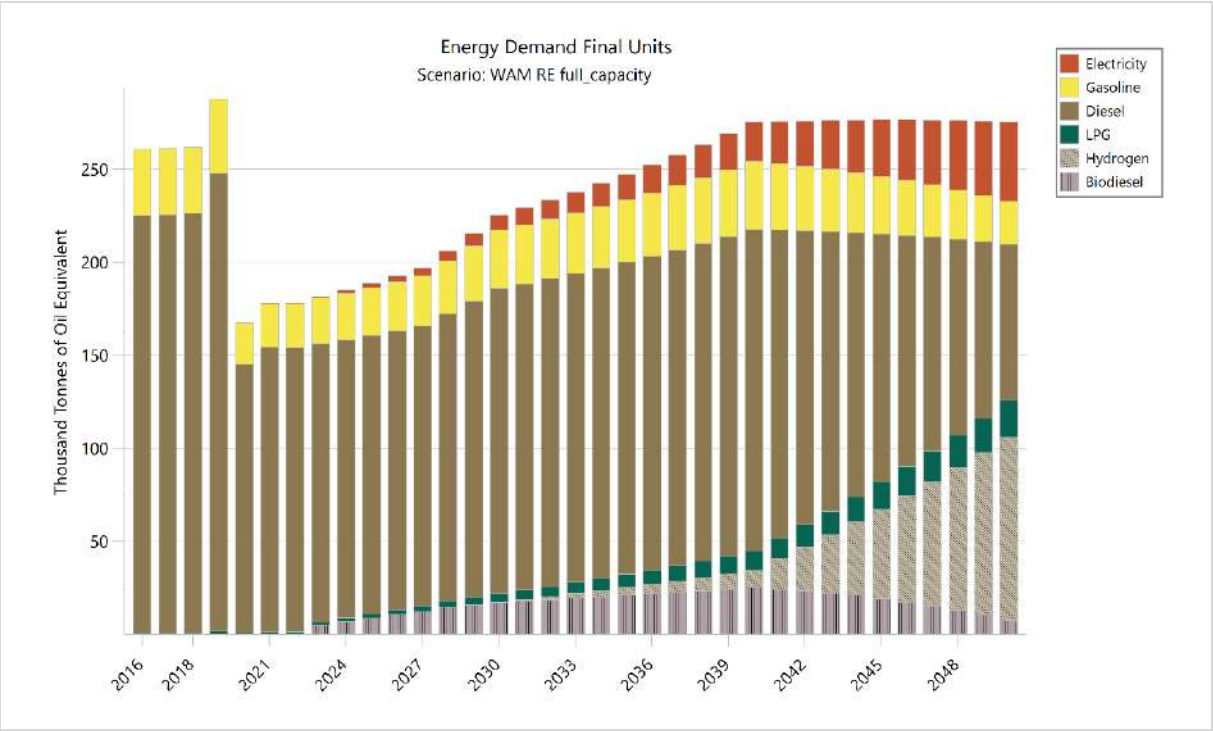

Figure 122: Fuel split underlying the final energy consumption (ktoe) for the freight transport sector for historic values from 2016-2023 and as projected with additional measures until 2050

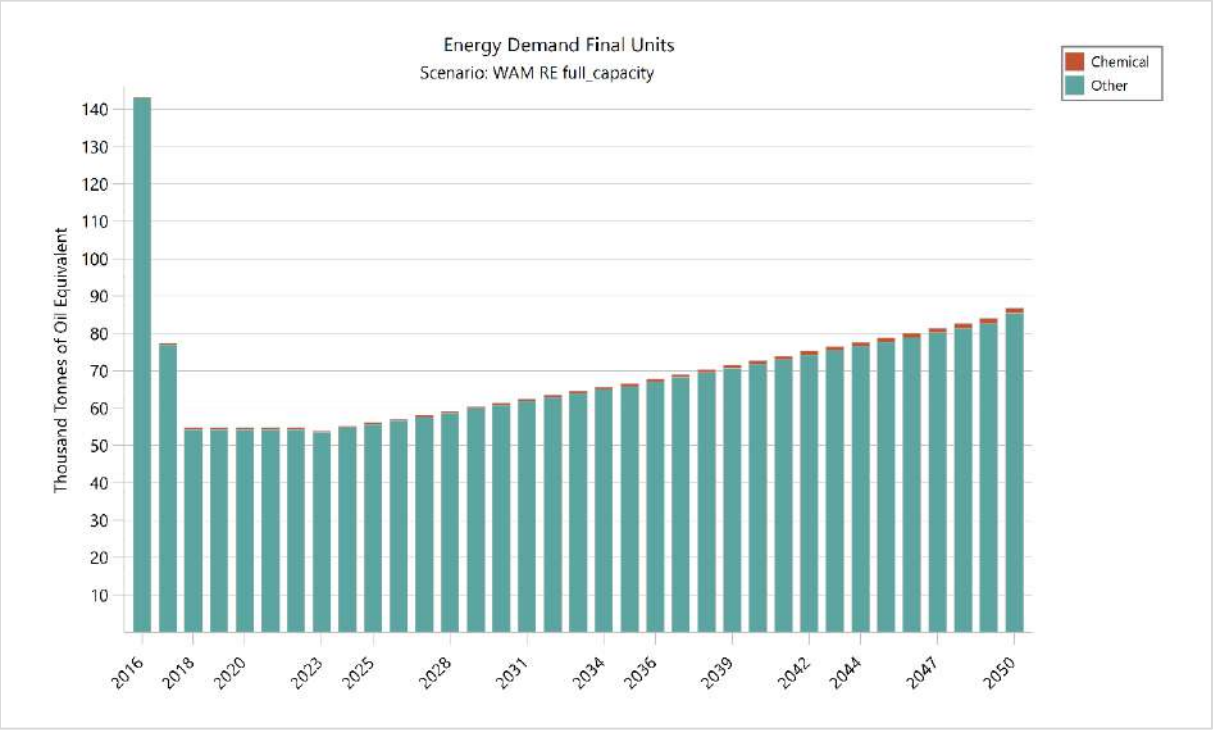

Figure 123: Consumption (ktoe) for the non-energy demand of energy carriers for historic values from 2016-2023 and as projected with additional measures until 2050

The following table shows final energy demand in the different subsectors in units of ktoe.

Branch [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Residential	520.2	524.5	512.4	504.1	489.2	453.4	426.0	483.4
Services	197.7	218.8	218.8	224.7	239.3	268.4	313.0	353.1
Industry	370.6	437.2	433.0	445.6	471.1	540.7	713.1	956.1
Transport	653.8	694.3	721.9	706.9	716.4	769.7	768.2	670.0
Agriculture Forestry	76.8	79.5	79.5	81.5	85.5	96.7	111.1	104.6
Fisheries	42.3	41.7	41.7	43.7	47.9	60.4	86.5	101.3
Nonenergy	54.7	54.7	54.7	53.9	56.1	61.4	72.8	86.9
Total	1,916.1	2,050.7	2,062.0	2,060.4	2,105.7	2,250.6	2,490.7	2,755.3
Space Heating	338.1	338.8	329.4	320.6	306.4	276.5	238.3	245.8
Appliances	98.2	99.0	98.4	100.9	99.3	89.9	82.5	81.4
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	32.4	34.4	34.1	33.8	34.7	37.5	48.7	77.4
Water Heating	51.4	52.2	50.5	48.8	48.7	49.4	56.6	78.8
Total	520.2	524.5	512.4	504.1	489.2	453.4	426.0	483.4
Services								
Trade	30.2	32.2	32.2	34.5	38.1	44.4	48.5	46.4
Accomodation and Food	11.4	12.2	12.2	13.1	15.1	19.5	24.4	24.4
Public administration	15.5	16.5	16.5	15.7	15.1	13.1	9.1	5.9
Education	23.1	21.3	21.3	20.3	19.6	17.2	12.1	8.0
Health	20.3	21.4	21.4	20.3	19.6	17.2	12.1	8.0
Other services	97.3	115.2	115.2	120.8	131.8	157.0	206.8	260.5
Total	197.7	218.8	218.8	224.7	239.3	268.4	313.0	353.1
Industry								
Iron Steel	27.8	29.8	29.8	31.1	34.0	42.3	65.2	100.6
Nonferrous metal	6.4	4.7	4.7	4.9	5.4	6.7	10.3	16.0
Chemical	14.3	14.4	14.4	15.0	16.4	20.4	31.5	48.5
Mineral	208.9	263.6	259.4	263.9	272.6	294.2	332.8	369.4
Food Drink Tobacco	50.0	52.1	52.1	54.5	59.6	74.0	114.2	176.1
Textile Leather Clothing	15.1	15.2	15.2	15.9	17.4	21.6	33.3	51.3
Paper Printing	9.7	8.9	8.9	9.4	10.2	12.7	19.6	30.2
Engineering Other metal	7.8	8.4	8.4	8.8	9.6	11.9	18.3	28.3
Other	30.5	40.1	40.1	42.0	45.9	57.0	87.9	135.6
Total	370.6	437.2	433.0	445.6	471.1	540.7	713.1	956.1
Transport								

Branch [ktoe]	2020	2021	2022	2023	2025	2030	2040	2050
Passenger	486.4	516.0	543.6	525.3	527.5	544.2	492.8	394.6
Freight	167.4	178.3	178.3	181.6	188.9	225.5	275.4	275.4
Total	653.8	694.3	721.9	706.9	716.4	769.7	768.2	670.0
Passenger Transport								
Rail	0.2	0.2	0.2	-	1.3	10.2	24.7	19.5
Navigation	20.5	20.5	20.5	20.3	21.3	24.2	30.4	37.7
Motorcycle	1.5	1.6	1.7	1.7	1.7	1.8	2.0	2.1
Car	439.4	468.0	494.1	476.1	476.2	477.5	407.9	314.5
Bus	24.9	25.7	27.2	27.3	26.9	30.6	27.7	20.8
Total	486.4	516.0	543.6	525.3	527.5	544.2	492.8	394.6
Freight Transport								
Rail	1.2	0.7	0.7	0.7	0.8	1.0	1.5	2.3
Navigation	16.7	16.7	16.7	17.5	19.2	24.4	39.2	62.9
Truck	149.6	160.9	160.9	163.4	168.8	200.1	234.7	210.2
Total	167.4	178.3	178.3	181.6	188.9	225.5	275.4	275.4
Non-energy								
Chemical	0.4	0.4	0.4	0.4	0.4	0.6	0.9	1.4
Other	54.4	54.4	54.4	53.5	55.7	60.8	71.9	85.5
Total	54.7	54.7	54.7	53.9	56.1	61.4	72.8	86.9

Table 63: Final energy consumption (ktoe) for different sectors and subsectors for historic values from 2020-2023 and as projected with additional measures until 2050

Dimension Energy Security

Two principal areas are most important for the Energy Security of Albania, the electricity production and the oil products sector.

With the additional measures, the import dependency in dry years (assumed in 2022, 2027, 2032, 2037, etc.) is almost eliminated as shown in Figure 124. In other years, Albania is expected to be a net exporter of electricity when running hydroelectric plants on full capacity. In normal (not dry) years, the export of electricity is almost at parity with local demand.

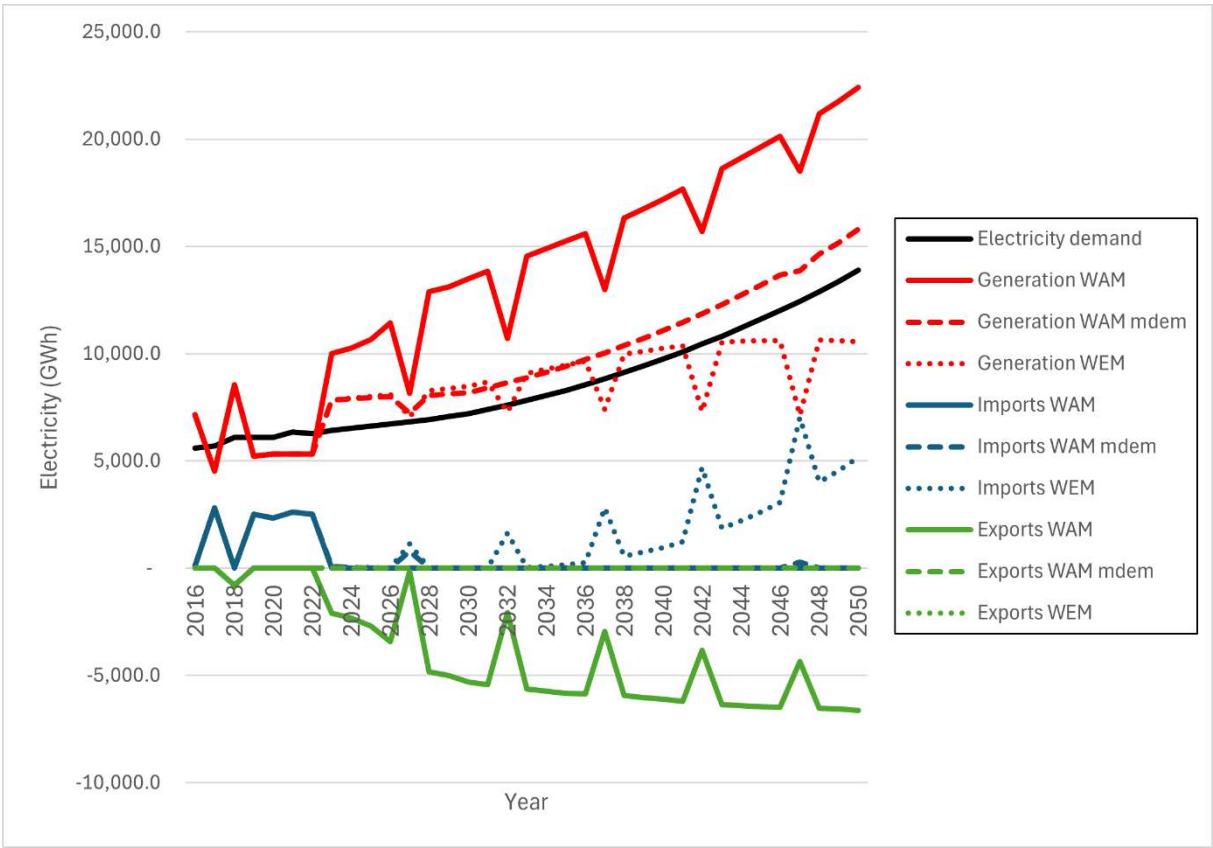

Figure 124: Electricity demand, generation, exports and imports with additional measures scenarios with renewable energy generation running at full capacity and exporting surpluses (projection 2019 - 2040). WEM and 'WAM RE to meet demand' (denoted 'WAM mdem') are also indicated

As shown in Figure 125, the bulk of electricity generation is taken over by hydro power plants, which are heavily affected by dry years and the effect of climate change (modelled as a decrease to hydro availability, see Chapter 4), and solar PV installations towards 2050. Gas fired power plants are mainly used in the dry years as they serve principally as a backup in case of shortage in hydro or other renewable availability, and contribute to a smaller amount in the normal years towards 2050.

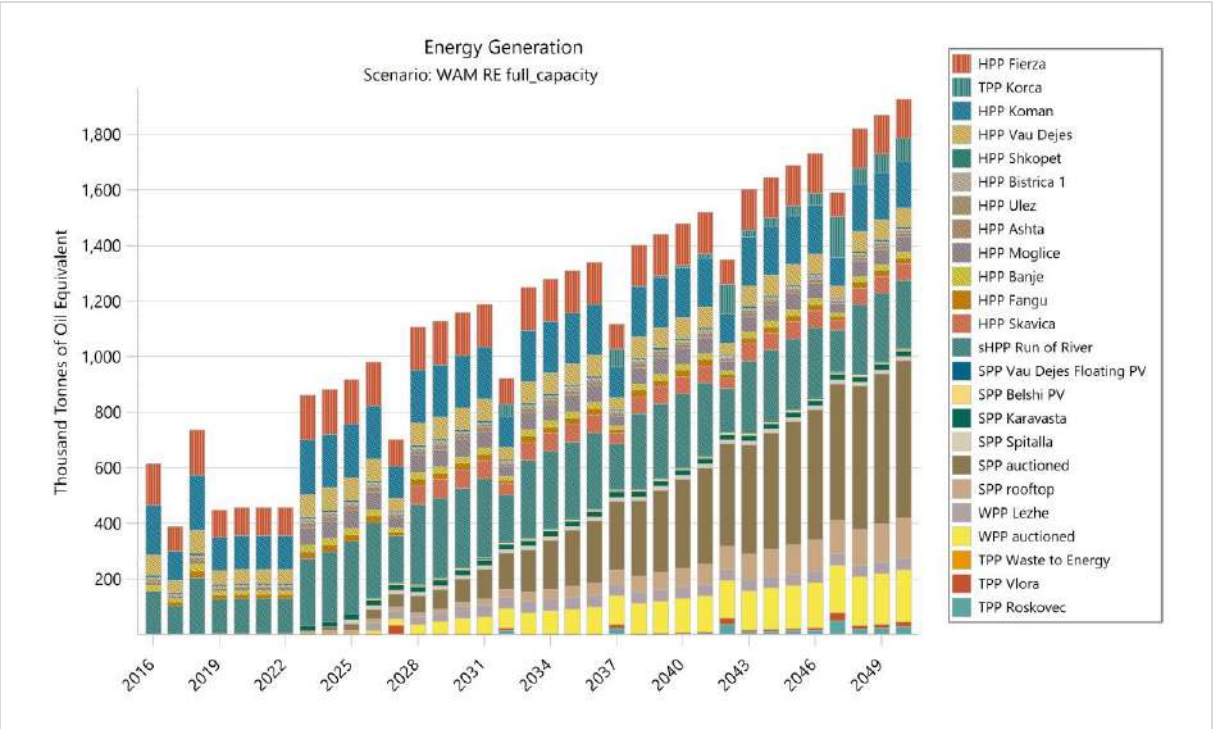

Figure 125: Electricity generation under the WAM scenario for the different power plants (PP, H - hydro, S- solar PV, W - wind, T - thermal gas). sHPP are small HPPs that are accounted for together, as are auctioned SPPs and WPPs.

With respect to fuel production, there is no change compared to WEM, see Figure 126. There is an increase in the demand for natural gas, which is imported through the TAP pipeline (Figure 127 on imports). The natural gas is used for power generation, but also in the residential (2% of FEC in 2030) and services sector (8.0% of FEC in 2030), where it replaces the use of LPG. There is also a limited use of natural gas in industry (remaining at the level of 2% of FEC).

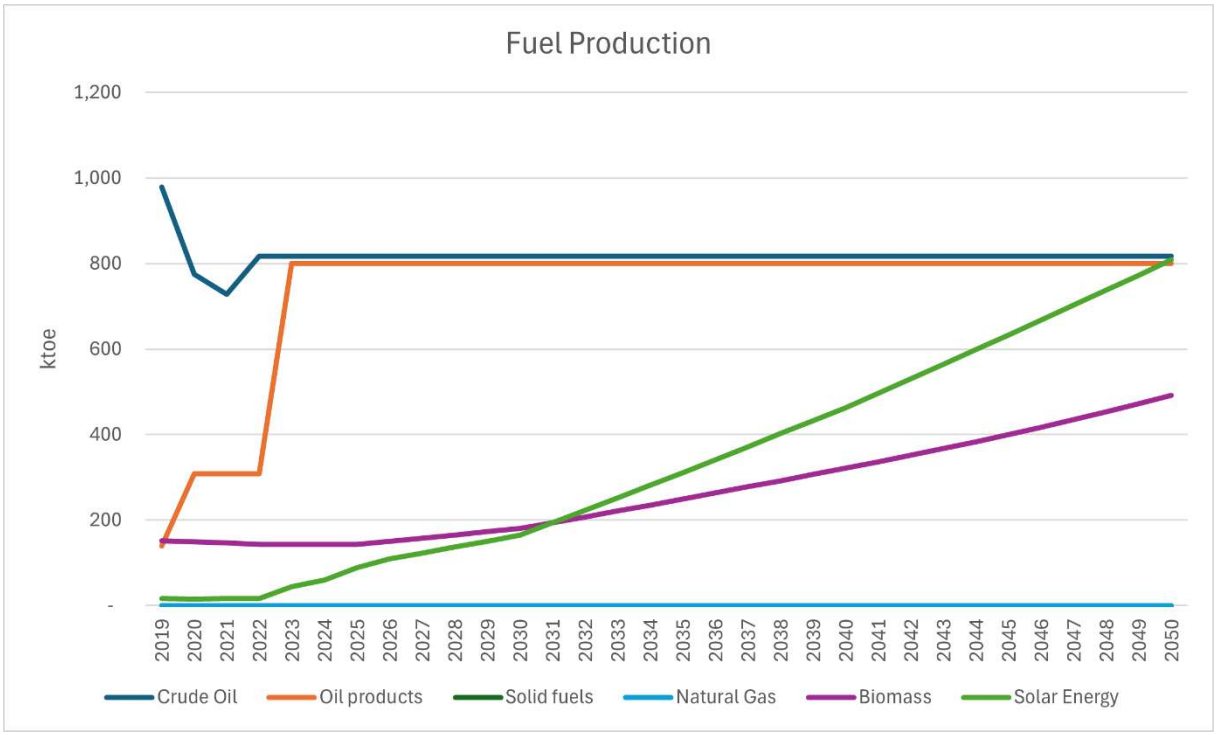

Figure 126: Fuel production with additional measures (projection 2019-2040)

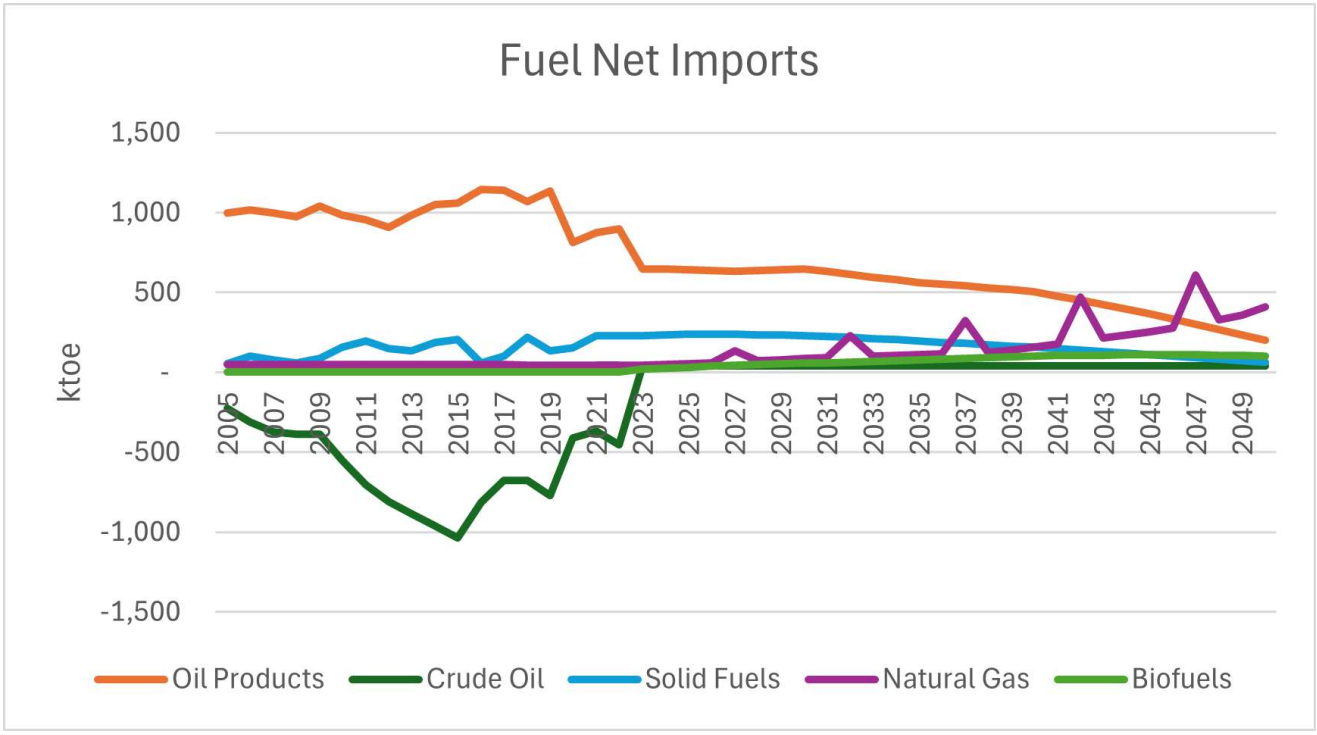

Figure 127: Fuel Net imports with additional measures (projection 2019-2040)

ii. Assessment of policy interactions (between existing policies and measures and planned policies and measures within a policy dimension and between existing policies and measures and planned policies and measures of different dimensions) at least until the last year of the period covered by the plan, in particular to establish a robust understanding of the impact of energy efficiency/ energy savings policies on the sizing of the energy system and to reduce the risk of stranded investment in energy supply

The modelling results presented in this chapter and for existing measures in Chapter 4 describe the energy system in aggregated form, considering the policies outlined in Chapter 3.

Each individual policy has an individual effect if implemented to the existing system. However, the interactions of policies need to be considered as this can increase or decrease their effect on the final saving values. An example is a policy in the building sector which targets the replacement of wood fired stoves for space heating with electricity powered heating and heat pumps. The fuel switch itself will lead to a decrease in energy consumption (especially in the case of heat pumps) but the stronger effect in terms of GHG emissions savings occurs if renewable electricity generation is also guaranteed. All measures that lead to an increase in electricity consumption in favour of another fuel require a corresponding increase of renewable electricity production capacity. Similarly, energy efficiency improvements have to be part of planning for electricity supply to plan without overcapacities.

Without energy efficiency measures, a stronger capacity increase for electricity generation is necessary to avoid import dependency. Energy efficiency measures can reduce the pressure on both the electricity generation and transmission capacity. By accounting for supply, network and demand sides of the energy systems in one integrated plan, costs for overinvestments in production capacities can be avoided.

Figure 128 shows the GHG emission savings for policies and measures implemented in the WAM scenario separately, while the corresponding values are given in Table 64. The effects of the PaMs with the emissions reduction are not included in the figure for readability but are given separately in Figure 130, together with the combined effect of the WAM scenario. Note that this analysis cannot show the single effect of a PaM in the combined system, as the combined WAM scenario takes into account the effect of interactions described above. As can be estimated from the figure, the summed effect of the single PaMs is larger than their combined effect. This difference is due to the interactions of the different policies, particularly of energy efficiency and renewable energy PaMs described above. However, the sum of the different PaMs is not a meaningful variable to assess, since the model (correctly) assumes that all PaMs are implemented together. A simple example is the renewable share: If this is increased to 100% in a system of high energy demand, the effect is much stronger than in system which is more energy efficient. The same is true vice versa. The sum of both is therefore not meaningful.

Renewable energy plants only lead to emission savings when replacing thermal power plants. In other years, they may be replacing imported electricity, the emissions of which are accounted for in the country of electricity generation. Their effect on values of GHG emission savings is therefore limited, while renewable energy is an important building block to decarbonisation. Energy efficiency PaMs have only a small effect as long as they only reduce the demand for electricity in the system, since there is ample of supply of renewable electricity, so their effect is strongest towards the end of the modelling horizon, where gas generated electricity also appears in the system. There are only few PaMs acting on non-energy emissions in the WAM scenario. In terms of total emission savings, the forest management has the largest effect until 2030, while the reduction of emissions in the cement industry through the introduction of CCU/S technologies leads to strong emission savings towards the end of the modelling horizon.

This discussion shows the limitations of attributing emission savings to individual PaMs. The reference system in which the PaM is implemented needs to be considered. As the NECP attempts to draw up an integrated plan, the effect of interactions between PaMs is of essential importance.

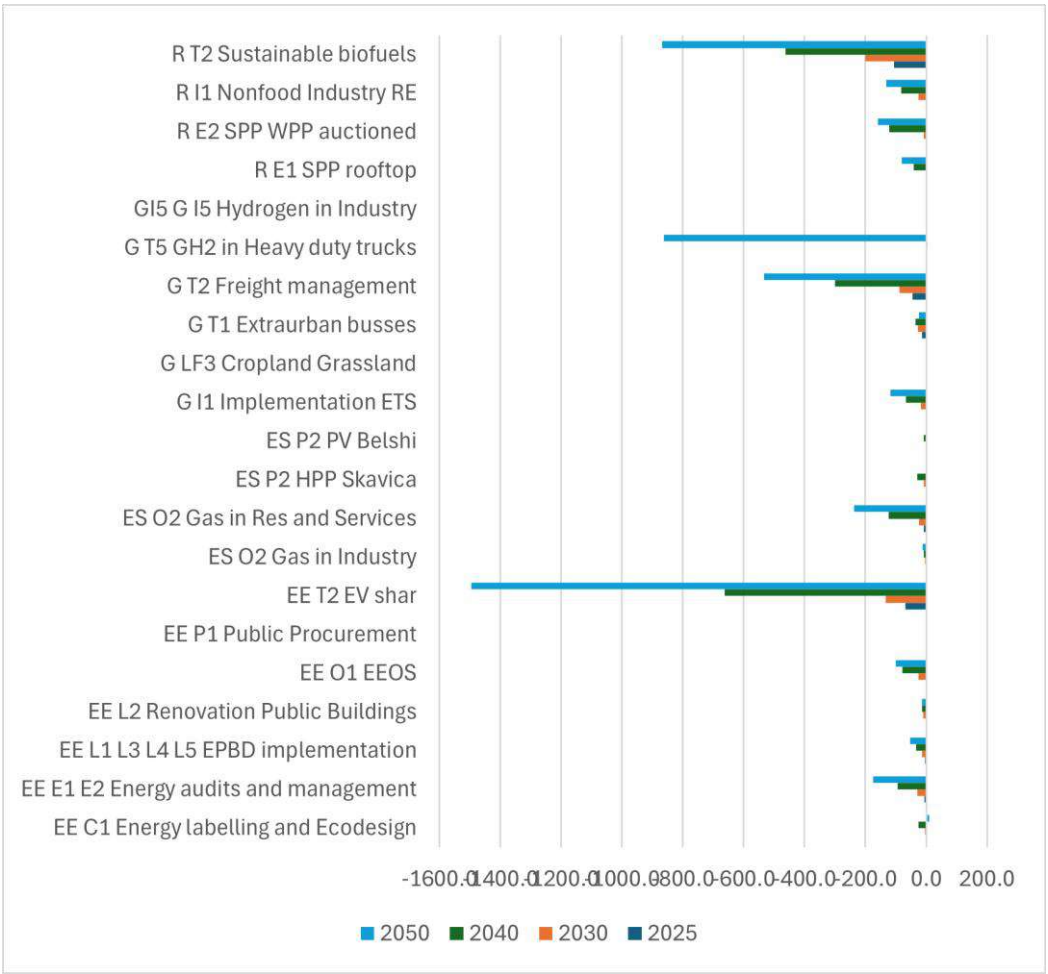

Figure 128: GHG emission savings [kt CO_2eq] for selected measures underlying the WAM scenario. Forest management is not shown for readability

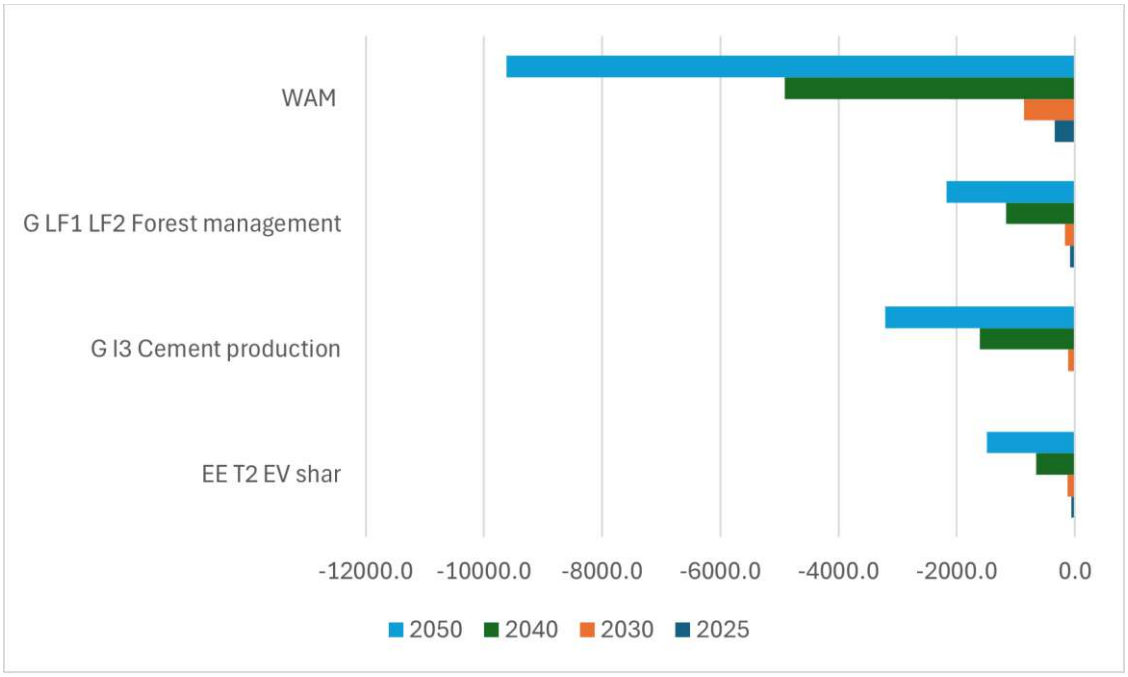

Figure 129: GHG emission savings for all policies and measures implemented separately (top columns) and implemented jointly in WAM (second columns). The GHG savings of those three PaMs with strongest are given here for completeness.

Abbr.	Short name	2020	2025	2030	2040	2050
EE C1	Energy labelling and Ecodesign	0,2	1,6	3,0	6,3	-24,9
ES P2	Floating PV Banja and Vau Dejes	0,0	0,0	0,0	0,0	-1,5
ES P2	HPP Skavica	0,0	0,0	0,0	-6,0	-52,4
R E1	SPP rooftop	0,0	0,0	0,0	-1,2	-33,7
R E2	PP WPP auctioned	0,0	0,0	0,0	-49,8	-81,1
G I3	Cement production	0,0	0,0	0,0	-1470,8	-2045,7
EE P1	Public Procurement	0,0	-0,2	-0,4	-0,6	-0,7
EE L2	Renovation Public Buildings	0,0	-3,2	-5,9	-8,6	-14,8
G I1	Implementation ETS	0,0	0,0	-11,7	-32,3	-33,3
EE L2, P1, O1	Energy effiency in services	0,0	-5,3	-17,1	-38,6	-86,8
EE L1 L3 L4	EPBD implementation	-0,8	-11,0	-22,3	-58,8	-130,0
R I1	Nonfood Industry RE	0,0	0,0	-27,0	-74,7	-86,8
G T1	Extraurban busses	0,0	-20,3	-36,8	-38,5	-40,9
EE E1 E2	Energy audits and management	-1,0	-14,7	-38,7	-111,3	-256,7
EE O1	EEOS	0,0	-16,6	-46,3	-105,3	-136,9
EE L1, O1	Energy efficiency in residential	-0,8	-25,0	-53,7	-150,5	-156,7
G T2	Freight management	0,0	-81,9	-125,5	-149,2	-183,9
EE T2	EV shar	0,2	-47,1	-169,6	-394,4	-686,3
R T2	Sustainable biofuels	0,0	-106,2	-214,3	-216,5	-201,5
G LF1, LF2	Forest management	0,0	-836,1	-1672,3	-1672,3	-1672,3
	WAM	-1,3	-1131,7	-2306,7	-4148,2	-4863,4

Table 64: GHG savings in ktCO_2eq for selected PaMs underlying the WAM scenario

iii. Assessment of interactions between existing policies and measures and planned policies and measures, and between those policies and measures and Union climate and energy policy and measures

Three policies that are active on the EU level are part of the PaMs included in the WAM scenario modelling of the Albanian energy system: New construction is required to follow the rules of the EPBD, an ETS is implemented and Ecodesign and Energy Labelling are introduced. Other EU policies already form part of the Energy Community Treaty.

5.2 Macroeconomic and other impacts of the planned policies and measures, including comparison to projections with existing policies and measures

This section addresses Macroeconomic and other impacts, to the extent feasible, the health, environmental, employment and education, skills and social impacts, including just transition aspects (in terms of costs and benefits as well as cost-effectiveness) of the planned policies and measures described in section 3 at least until the last year of the period covered by the plan, including comparison to projections with existing policies and measures.

This section specifically provides an assessment on the non-energy impacts of energy and climate policies, as comprised in this NECP. The environmental effects of energy and climate policies aiming to increase the share of renewable energies (RE) in the energy system, as well as improve energy efficiency (EE) across different consumption sectors, are mostly evident and well researched. To a large extent, the implementation of measures related to EE and to increase the share of RE is driven by the aim to reduce greenhouse gas emissions, mitigate climate change and comply with the goals of the Paris Agreement. However, both EE and RE measures can have a range of impacts towards households, employment, private companies, and the public sector. These impacts might be substantial, and can be documented in different dimensions, e.g. ranging from macro-economic effects (impacts on employment, public budgets, value creation, etc.), health impacts (due to reduced local air and water pollution) social impacts (alleviation of energy or fuel poverty, improved comfort and well-being, reduction of inequality), among many others (for an overview, see Bouzarovski (2014)). A comprehensive estimation of the multiple effects of energy and climate policies across actors and dimensions is beyond the scope of this study. This section provides a brief overview on non-energy impacts across three key dimensions, namely: 1) disposable household incomes, as a key indicator to measure the impacts on fuel and energy poverty 2) public budgets, to understand if measures have the potential to increase or decrease public revenue streams and 3) employment, as energy and climate policies bear great potential to provide green jobs.

Disposable household incomes

Achieving a substantial decarbonization of the energy sector will require major efforts in the building sectors. At EU level, greenhouse gas emissions in the building sector represent more than a third of total emissions. Residential buildings account for 75 % of the European building stock, from which more than 40 % was built before 1960 and more than 90 % before 1990. Low income households represent about 17 % of households in the EU (Eurostat, 2014), while estimates of EU-inhabitants suffering from fuel poverty ranging between 50-160 million inhabitants, corresponding to roughly 6–21 % of the total EU-population (Bouzarovski (2014); BPIE (2015); Bird et al. (2010)). Energy efficiency policies in the residential sector bear great potential to improve the disposable income of households. Disposable household incomes can be increased by improved EE in space heating, hot water generation or energy-using products like fridges or televisions, given that the overwhelming share of all implemented measures are cost-effective (Yushchenko and Patel 2017; Dodoo et al. 2017). Derived from this, EE bears a great potential for the alleviation of energy poverty, but additionally induce the multiple benefits of EE, such as improving human health, lowering energy subsidies through social policies, increased the value of properties, local spending and employment, reduced emissions, etc. Initial investments in EE for renovation of buildings usually pay off in terms of heating cost reduction, which enables consumers to spend their money elsewhere in the long run. However, as the evaluation of the German KfW Energy-efficient Refurbishment Programme emphasizes, it must be noted that these investments

are profitable after a period of several decades (KfW Group (2018)). Disregarding investment costs is hence a simplification and likewise the neglect of rebound and spill-over effects.

Public budgets

Public Budgets can be affected by EE and RE policies in multiple ways. For example, changes in public budgets can be triggered by new jobs generated (e.g. by EE measures the building sector). On the other hand, policies comprising tax cuts and subsidies towards targeted activities to improve EE and deploy a higher share of RE can go along with higher public spending or reduced tax incomes. As an indicator for the impact on public budgets, additional income tax revenues) for a typical average job in the related sectors/subsectors can be computed, using country specific income tax rates. Losses of income tax in the energy sector can also be considered in this way here. The approach can be extended to other impacts related to the public budget, such as VAT and energy taxes to calculate positive or negative effects on public budgets.

Employment effects

Employment effects can be of great importance, as providing employment opportunities and reducing unemployment rates represent key political objectives. Direct effects of EE on employment are based on two main drivers: investments in EE measures and related energy savings. While the former triggers demand impulses in industries producing relevant technologies, the latter reduces demand related to energy supply in the long run. In both cases, these impacts indirectly affect other sectors, e.g. energy producers and distributors. As various studies have shown, net employment gains are likely to occur when shifting from spending on energy consumption to investing in EE measures (Wei et al. 2010; Scott et al. 2008; Bacon and Kojima 2011). Provided that EE measures are cost-effective they also increase disposable incomes, which further stimulates job creation in the long-run. Measures improving energy efficiency by construction-intensive activities, such as buildings envelope refurbishment, have also shown to have great potential for employment creation.

Table 65 presents a qualitative assessment of non-energy impacts of selected PaMs, addressing the dimensions disposable household incomes, public budgets and employment12[1]. The values indicated in the table are “low”, “middle”, “high” (i.e. low meaning a PaM only has a minor positive effect on the respective non-energy impact) if a PaM has the potential for respective effects on the examined dimensions, and “neutral”, if it has no effect. Some PaMs require either public funds to operate, or comprise tax exemptions to incentive certain activities, thus impacting public budgets in a negative way. These effects are indicated by a value of “negative” in the respective impact towards public budgets. In general terms, policies improving EE in the residential sector, both in the building stock, as well as of appliances and devices, bear potential to improve household´s disposable incomes and reduce energy poverty. Regarding employment, policies requiring construction works, such as building's refurbishments or infrastructure related projects, bear potential to create green jobs. With regard to public budgets, policies triggering high employment might also improve income-tax revenue, thus improving public budget. Likewise, policies improving EE of public energy use, such as improved EE in public buildings, can reduce public expenditures for energy and benefit public budgets.

12 Of note, several not-included PaMs are of cross-cutting nature or are supportive or enabling to considered PaMs to achieve its non-energy impacts. A prominent example might be Feed-in tariffs, which as such do not lead to employment effects, but the induced development of power plants does.

Nr	PaM Name	Qualitative Assessment of non-energy impacts of PaMs		
		Disposable houshold incomes	Public Budgets	Employment
EE-E1	Energy audits for large energy consumers with focus on industrial activities	neutral	neutral	low
EE-O1	Energy efficiency obligation scheme and alternative measures for Albania	medium	low	low
EE-T1	Energy labeling of new cars	low	neutral	neutral
EE-T2	Increase the share of Electrical Vehicles in the national car fleet	low	negative	neutral
EE-T3	Support mechanisms for EE and clean vehicles	low	negative	neutral
EE-L1	Implementation of the Minimum Energy Performance Requirements in buildings	high	medium	high
EM-P1	Eradicate energy poverty	high	negative	neutral
ES-O2	Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan (Industry)	neutral	medium	medium
ES-O2	Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan (Residential and Services)	low	medium	medium
ES-O2	Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan Plan (Korca Gas)	neutral	low	medium
EE-C1	Introducing the Energy labelling and Eco-design requirements	medium	low	neutral
G-I1	Implementation of the ETS in Albania	negative	low	neutral
G-T1	Improvement of intra-urban/intercity bus network lines	low	neutral	neutral
G-T2	Integrated freight management	neutral	low	neutral
ES-O4	Hydrocarbons exploration, production and processing	neutral	neutral	low
EE-P1	Energy efficiency measures related to purchasing by public authorities	neutral	low	neutral
R-T2	Sustainable / Advanced biofuels	neutral	negative	low
EE-L2	Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024	neutral	medium	high
R-E1	Mechanism of Feed-in-Tariff for small renewable capacity	low	negative	medium

Table 65: Qualitative assessment of non-energy impacts of selected PaMs considered in the WAM scenario

Employment effects - Energy efficiency

Regarding employment effects PaMs triggering building renovation action usually have the highest impacts. Most of the job creation is taking place in the branches construction and manufacturing while having slightly negative effects in the sectors mining and quarrying and branches directly related to the supply of energy. PaM EE-L1 and EE-L2 can be expected to have substantial impact on the employment derived from the energy savings they generate and the additional investments related to these. The combined effect can be estimated to create 3,500 to 12,000 full-time equivalents[13] in the period 2019 to 2030. As the share of public buildings in the total building stock is relatively small the main share of these additional employment effects will be generated by the implementation of energy performance standards for buildings and its effect on the renovation activity improving residential buildings.

Employment effects - Renewable energy

The development of renewable energy power plants bears great potential for the creation of employment. While the renewable plants would not be manufactured in Albania, there is also a notable effect that can be attributed to the construction phase of RE power plants, while its operation is not employment intensive. Most of the employment is therefore expected to be created during the construction phase of the power plants. Figure 130 shows an estimate of expected employment creation during the construction and operation and maintained phases of solar PV and wind power plants. It is based on normalized employment factors, whereas normalization is carried out from the commonly used unit person-years/MW into the unit jobs/MW by assuming a 20-year lifetime of projects. Results are based on employment factors reported by Cameron and van der Zwaan (2015) in the high bound estimate, who analyses the body of available peer-reviewed scientific literature with this regard. In particular, solar PV bears potential for green jobs creation.

In the WEM scenario, around 113 MW of solar PV are added to the power system until 2030. This results in around 185 jobs in the installation phase, and 185 further jobs in the operation and maintenance phase, resulting in a total of 370 solar PV related jobs until 2030. By a similar metric, a total of around 230 jobs are created due to wind power plants, with a higher share (two thirds) attributed to the operation and maintenance phase.

The WAM scenario comprises a capacity addition of 817 MW until 2030 for solar PV and 520 MW in the same timeframe for wind. This results in around 1340 jobs in each the installation and operation and maintenance phase for solar PV, or a total of 2680 jobs. As for wind, a total of around 540 jobs are created in the WAM scenario.

13 Gross effect not taking to account second order effects and limitations such as labour force shortages.

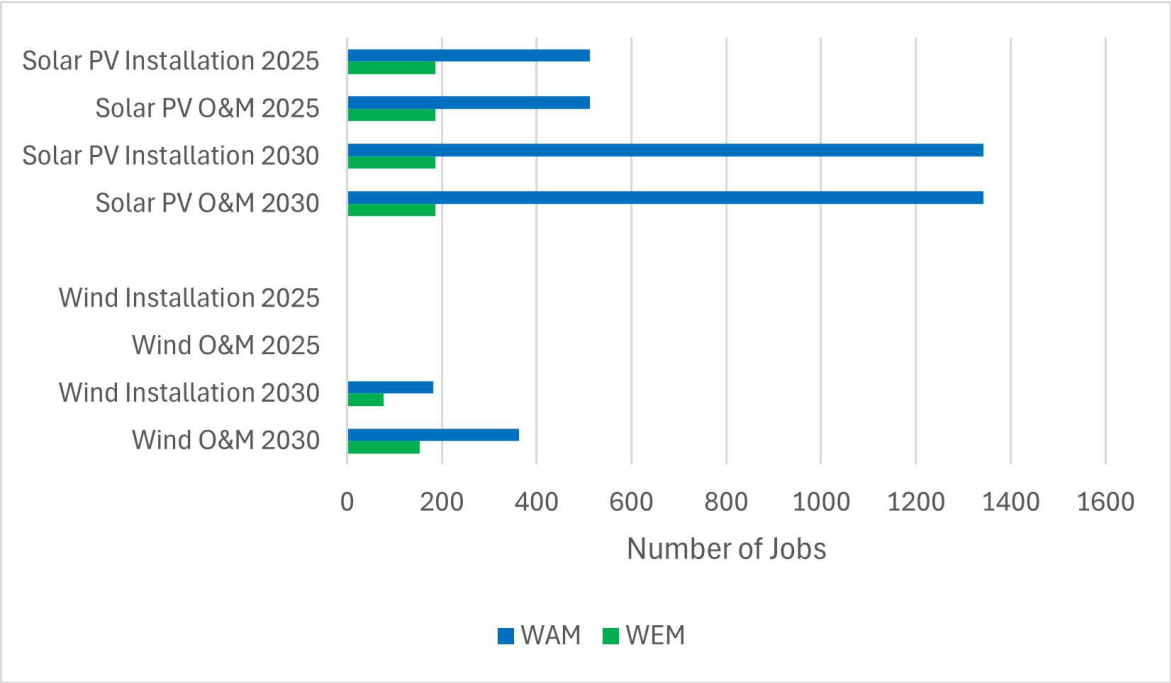

Figure 130: Cumulative employment until 2025 and 2030 for solar PV and wind for the installation and O&M phases (own elaboration based on Cameron and van der Zwaan (2015))

5.3 Overview of investment needs

Existing investment flows and forward investment assumptions with regard to the planned policies and measures

In the PaM description in chapter 3, the budget and investment are presented per PaM. The table below provides an overview of investment assumptions.

Dimension	Nr.	Code of PaM	PaM name	Financial - investments	Allocated to Scenario
Decarbonisation / GHG emissions & removals	1	G-T1	Improvement of intra-urban/intercity bus network lines	Specific budget not available but the total budget foreseen for investments in the transport sector for a period of 20 years (2019-2038) is 4,888.03 MEur of these 4,458.53 MEur are for projects developed by the public sector while, 429.5 MEur are private investments. Estimate: 20,000 EUR per feasibility study	WAM
	2	G-T2	Integrated freight management		WAM
	3	G-T3	Efficiency-based car fees and incentives for fleet renewal		WEM
	4	G-T4	Clean vehicles in public procurement		WAM
	5	G-T5	Green hydrogen in heavy-duty transport		WAM
	6	G-B1	Policies to support RES in Heating and Cooling Sector	Estimated at 1.6 Meur for solar thermal, and 50 kEur for technical assistance for the preparation and implementation of the legal framework	WEM

	7	G-I1	Implementation of the ETS in Albania	2 MEur (as an indicative figure based on benchmarking)	WAM
	8	G-I2	Establishment of a mechanism for implementation of MMR	1 MEuro	WEM
	9	G-I3	Reduction of GHG emissions from cement production	Approx. 0.3 MEur for feasibility study	WAM
	10	G-I4	Reduction of Fluorinated Gases (F-Gases) Emissions	Approx. 0.5 MEur	WAM
	11	G-I5	Green hydrogen for the ferrochrome and steel producing industry	Estimate: 0.5 MEur for studies at strategic and feasibility level	WAM
	12	G-I6	Green hydrogen strategy	Approx. 0.3 MEur for strategy development	WAM
	13	G-A1	Promotion of organic agriculture	The budget for Agri-environmental, climatic and organic farming measures is 2.5 Meur after 2020. Estimated 150 kEur for training and awareness creation.	WEM
	14	G-A2	Improve the Agricultural Monitoring in Albania	No budget identified specifically	WEM
	15	G-A3	Regulating the Agricultural burning practices	No budget identified specifically	WEM
	16	G-W1	Emission reduction from waste	The estimated value for landfill rehabilitation is approx. 76 MEur; Collection of dry recyclables approx. 18.5 MEur and collection of organic waste and composting approx. 13 MEur. (All values have been calculated until for the period 2018-2032.)	WEM
	17	G-W2	Use of Waste Incineration Plants for the waste integrated management process in Albania	Awareness creation and training approx. 100 kEur.	WEM
	18	G-W3	Increase of Wastewater Treatment Plants and their related coverage	The (draft) Water Supply and Sewerage National Strategy 2019-2030 costs approximately 1,500 MEur, with infrastructure representing 99.2% of the total and technical assistance 0.8%.	WEM
	19	G-W4	Waste and wastewater related capacity building and organisational development for municipalities	Estimated at 150 kEur	WEM
	20	G-LF1	Increasing the natural carbon sink capacity of forestry and pastures	6.5 MEur (annually for the forest sector although not specified by measures) from the State funds	WAM
	21	G-LF2	Environmentally friendly forest management		WAM
Renewable Energies	22	R-E1	Mechanism of Feed-in-Tariff for small renewable capacity	No state budget foreseen because the cost of scheme would be covered by the electricity tariffs. Nevertheless, there is an impact for the budget of the offtaker, which is owned by the government.	WEM & WAM
	23	R-E2	Auctions for new renewable capacity (wind and solar) and storage; Approval of the 3 year auction plan		WEM & WAM

	24	R-E3	Energy spatial planning for increasing the share of renewable energy and improve energy efficiency	Approx. 0.5 MEur	WAM
	25	R-E4	Mechanism of net metering for installations up to 500 kW	No state budget foreseen because the cost of scheme would be covered by the electricity tariffs.	WEM
	26	R-E5	Robust power grid to accommodate increased renewable energy capacity, investment in renewable energy capacity in the free market	According to some preliminary estimates, some EUR 40 to 80 MEur investments are required in order to refurbish the distribution network to better handle variable renewable energy injection in the immediate term.	WEM
	27	R-E6	Facilitate regulatory and physical connection to the electricity grid	No budget foreseen since it mainly related to the regulatory action	WEM
	28	R-E7	Demand side management and electricity storage systems for power grid flexibility	Technical assistance estimated 150kEuro	WAM
	29	R-E8	Metering strategy and digitalization of the power sector	According to the metering strategy, the medium-term investment required are estimated at 3,691 mil ALL (approx. 29,5 mil Euro).	WEM
	30	R-E9	Supporting the formation of renewable energy communities	Technical Assistance Program, approx. EUR 150,000. Support for pilot projects with selected renewable energy communities to be financed by a Technical Assistance Program, approx. EUR 20,000 per renewable energy community	WAM
	31	R-E10	Participation in a regional system for guarantee of origin (GO)	To be determined	WAM
	32	R-E11	Heat maps	Estimated at 0,5 MEur	WAM
	33	R-T1	Electrification of the transport sector	Cost for the policy and results evaluation study is estimated at EUR 15,000	WAM
	34	R-T2	Sustainable / Advanced biofuels	124,000 Euro (Source: National Action Plan for Renewable Energy Resources in Albania 2015-2020)	WAM
	35	R-T3	Installation of charging stations for Electric Vehicle and installation of photovoltaic panels	13.5 MEur (IPA III Window 3: Green agenda and sustainable connectivity)	WAM
	36	R-I1	Supporting the deployment of small-scale renewable energy applications in the non-food industrial sector	Indicative Budget: 2 MEur	WAM
	37	R-W1	Assessment of energy use and opportunities for implementation of renewable energy sources in the water sector	Overall cost 14.7 MEur IPA III (2023 – 2027), Window 3: Green agenda and sustainable connectivity	WAM
Energy	38	EE-O1	Energy efficiency obligation scheme and alternative measures for Albania	Since it has regulatory issues, the budget is more related to the technical assistance (first evaluation is 10-20 kEur)	WAM

	39	EE-I1	Inspection of Building Technical Systems	Inspection costs expected to be evaluated.	WAM
	40	EE-L1	Implementation of the Minimum Energy Performance Requirements in buildings	There is no overall calculated budget, but some funds dedicated are: (i) State Aid for “New Green Businesses” in Tirana with a total value of the fund for two years approx. 0.3 MEur; and (ii) 6.5 MEur "For Energy Efficiency for the Student City" from KfW bank. Setting up an EPC data base which meets the requirements of interoperability is estimated at 0.2 Meur. The cost for operating and maintaining the EPC database as well as related software-tools, and for offering trainings, is estimated at EUR 25,000 per year.	WAM
	41	EE-L2	Long-term building renovation plan (for public and private buildings) according to EPBD recast 2024	Initial estimate at 1MEur	WAM
	42	EE-L3	Minimum energy performance standards for non-residential buildings and trajectories for progressive renovation of the residential building stock	See EE-L2	WAM
	43	EE-L4	Retrofitting of the existing central governmental building *(excluding other public buildings owned by municipalities, etc.)*	Total investment costs are 500 MEur for the 2020- 2030 period.	WAM
	44	EE-L5	Retrofitting of the public building stock *(all public buildings except central government buildings)*	Total investment costs for public buildings retrofits are 1800 MEur for the 2015- 2030 period.	WAM
	45	EE-L6	Financial support schemes for improving energy efficiency in buildings (private sector)	Budget for free energy advice / energy audits to be financed by technical assistance programmes estimated at EUR 25,000 per year.	WAM
	46	EE-L7	Energy auditing and retrofitting the public building stock	Energy audits costs expected to be evaluated.	WAM
	47	EE-L8	Energy Efficiency Rehabilitation Programme Student City I- Tirana, Albania - pilot project	Overall cost 42 MEur	WAM
	48	EE-S1	Uptake of ESCO models	Estimated at EUR 20,000	WAM
	49	EE-P1	Energy efficiency measures related to purchasing by public authorities	Approx. 50 kEur	WAM
	50	EE-P2	Municipalities Energy Efficiency Action Plans, implementation, and reporting	Approx. 6 MEur	WEM
	51	EE-P3	Establishment of integrated municipal / regional	Estimated 0.3 MEur	WAM

			development plans which are linked with the NECP		
	52	EE-E1	Energy audits for large energy consumers with focus on industrial activities	Energy audits costs expected to be evaluated.	WEM
	53	EE-E2	Energy management systems for SMEs	3 MEur (considering the multiannual support) has been calculated.	WAM
	54	EE-C1	Introducing the Energy labelling and Eco-design requirements	70 MEur	WAM
	55	EE-T1	Energy labelling of new cars	2 MEur	WAM
	56	EE-T2	Increase the share of Electrical Vehicles in the national car fleet.	Approx. 5 MEur CAPEX (capital expenses) of charging towers infrastructures. Upgrade to taxi fleet with hybrid or electric models with a capital cost approx. 0.5 MEur	WAM
	57	EE-T3	Support mechanisms for EE and clean vehicles	To achieve the target of 15.5% for EE by 2030 there is an estimation about 228 MEur to be invested.	WEM
	58	EE-T4	Increasing the share of public transport for passengers and freight (roads, railways and waterways)	Not a single value because there are several projects related to several interventions for the transport system. Durrës -Tirana- Rinas 129 MEur	WEM
	59	EE-T5	Improvement of railway transport network, linking Albania with the international railway transport network	To be determined	WEM & WAM
Energy Security	60	ES-P1	Gas supply for Vlora Thermal Power Plant	Approx. 58 MEur	WEM
	61	ES-P2	Construction of new state owned power plants – Skavica, Vau Dejës, Belsh PV	Skavica Hydro Power Plant (308 – 510 MEur), floating PV plant Vau Dejës 13,9 MEur (12.9MW), Belshi 50 MW PV appr. 36 MEur.	WEM & WAM
	62	ES-O1	Fully functional legal framework for a reliable and safe gas supply to customers	Cost estimation is 1 MEur	WAM
	63	ES-O2	Development and implementation of the domestic distribution and transmission project identified in Gas Master Plan	New gas transmission line budget is foreseen from 150 MEur until 185 MEur, from which 67 MEur for 168km are for Ionian Adriatic Pipeline (IAP)	WAM
	64	ES-O3	Linking Albania with the international gas network	"Pre-feasibility Study for Albania to Kosovo Gas Pipeline" (ALKOGAP project), implemented by IPF4 TA, financed by the WBIF with a grant 0.3Meur. Approx.150 MEur for Albania - Kosovo Gas Pipeline (ALKOGAP project, Albanian section). 67 MEur for 168km are for Ionian Adriatic Pipeline (IAP).	WEM
	65	ES-O4	Hydrocarbons exploration, production and processing	No budget assessed since Investment costs for rehabilitation and modernization studies of the two refineries depends directly on the actual	WEM

				situation of installations, equipment and environment pollution level.	
	66	ES-O5	Emergency plan for natural gas	No budget assessed	WEM
	67	ES-O6	Approval of Law "On the establishment, maintenance and management of the minimum reserves of crude oil security and its products"	No specific budget foreseen for this measure	WEM
	68	ES-R1	Ionian Adriatic Pipeline & Albania Kosovo Gas Pipeline	67 MEur for 168 km are for Ionian Adriatic Pipeline. Approx.180 MEur for Albania - Kosovo Gas Pipeline (ALKOGAP project, Albanian section)	WEM
Energy Market	69	EM-I1	Electricity interconnectors	Budget to be determined by the transmission system operator	WEM
	70	EM-I2	Electric Energy Sector Reform	Indicative budget: 1 MEur	WEM
	71	EM-I3	Establish RES operator and transform Feed-in-Tariffs	No budget calculated for this PaM	WAM
	72	EM-P1	Eradicate energy poverty	This measure provided support for 213,000 households with a cost for state budget at 1.76 billion ALL (14.22 MEur) a year as of 2019/2020. To be used as a guideline for annual costs in the future.	WAM
Research, Innovation and Competitiveness	73	RIC-E1	Improvement of the regional and international collaboration in the scientific research related to the energy sector	Budget forecast is approx. 8.24 MEur	WEM
	74	RIC-E2	National program of R&D	Annual budget should be 2% of GDP.	WEM
	75	RIC-E3	Business Investment Development Strategy (BIDS)	Not assessed	WAM
	76	RIC-E4	Demonstrating Innovation and Competitiveness	Feasibility study: cost estimation 150 kEUR. Cost and financing of demonstration project to be determined by feasibility study.	WAM
	77	RIC-E5	Supporting innovative SMEs by means of tax relief (RIC-E5)	Estimated at 0.5 MEur per year	WAM
	78	RIC-E6	Formation of clusters to support innovation and competitiveness	Approx. 0.2 MEur	WAM
	79	RIC-E7	Innovation and excellence in the public administration	Approx. 0.3 MEur	WAM

Table 66: Overview of investment assumptions

Sector or market risk factors or barriers in the national and regional context

One of the risks that might limit the increase of RES is the constraint on state budget. Indeed, the majority of new capacity would be supported, either with FIT/CfD or net metering. These support schemes have an impact on the state budget, through the national utilities and the electricity price.

5.4 Impacts of planned policies and measures on other Member States and regional cooperation, including comparison to projections with existing policies and measures

This section addresses Impacts of planned policies and measures described in section 3 on other Member States and regional cooperation at least until the last year of the period covered by the plan, including comparison to projections with existing policies and measures.

Impacts on the energy system in neighbouring and other Member States in the region to the extent possible

No impact is foreseen for the petrol sector. The impacts in the gas sector are the increased capacity to transmit gas through TAP and the Ionian Adriatic Pipeline (IAP).

The most important impact is within the electricity sector. The increase of renewable energy as well as the on-going reforms in the electricity sector, most notably the introduction of a power exchange, will allow the export of electricity to the neighbouring countries. Indeed, comparatively, the electricity from Albania would be cheaper than the neighbouring countries leading to a reduction of domestic generation in these countries. This is especially true thanks to the large transmission capacity already existing in the region. Figure 124 shows the amount electricity that could be exported to neighbouring countries.

Impacts on energy prices, utilities and energy market integration

As mentioned above, the increase of renewable energy will lead to cheaper electricity on the power exchange which would have an impact on the regional electricity prices.

Considering energy market integration, the gas projects, especially the Ionian Adriatic Pipeline will enhance the regional integration of the energy markets. In addition, existence of the power exchange in Albania which is to be coupled with Kosovo, will lead to greater market integration. Finally, the electricity interconnectors would also allow more trade with neighbouring countries.

Where relevant impacts on regional cooperation

The improved integration of the gas and electricity sectors of Albania with the neighbouring countries through the planned projects in interconnections and through the liberalization of these sectors would impact favourably the regional cooperation.