Klimata un enerģētikas ministrija

LATEST UPDATE

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July 2024

CONTENTS

ABBREVIATIONS

AE	Renewable energies
RES	Renewables
EP	Ministry of Foreign Affairs
AN	Excise tax
RRF	Recovery and Resilience Facility
UN	United Nations
ATD	Road Transport Directorate
CAA	District cooling
CEF	Connecting Europe Facility funds
CSA	District heating
CSAS	District heating system
CSP	Central Statistical Bureau
Co_2 eq.	Carbon dioxide equivalent
NBS	Nature-based solutions
DRN	Environmental tax
EA	Energy Efficiency Association
EC	European Commission
EKII	Emission Allowances Auction Instrument
EM	Ministry of Economic Affairs
EV	Electric vehicle
EU	European Union
ETS	European Union Emissions Trading Scheme
FEI	national Institute for Physical Energy
FLLP	Basic and applied research programmes
FM	Finance Ministry
IEA	International Energy Agency
IMs	Interior Ministry
IFS	Innovation Fund (under the EU ETS)
ICTS	Information and communication technology
IRM	Education and Science
CSMAP	Climate-friendly forest management programme
KEM	Ministry of Climate and Energy
PCIS	Projects of Common Interest
CPPS	Intergovernmental Panel on Climate Change
CAP	MFF financing under the Common Agricultural Policy
RSS	Rural Support Service
LAEF	Federation of Renewable Energy of Latvia
LASUA	Latvian Association of Waste Enterprises
LBBA	Latvian Biofuels and Bioenergy Association
LBTU	Latvian University of Biosciences and Technology
LDDK	Latvian Employers' Confederation
LDTA	Latvian Fuel Traders Association
LEEA	Latvian Association of Electrical Energy & Energy Constructioners
LIAA	Investment and Development Agency of Latvia
LIAS2030	Latvia's sustainable development strategy 'Latvia 2030'
LIFE	EC financial instrument for environment and climate
LQF	Latvian Wood Industry Federation
GLPA	Association of Large Cities of Latvia
LMIB	Association of Forest Owners of Latvia
LNG	Liquefied Natural Gas
LOSP	Cooperation Council for Agricultural Organisations
LPKPP	Latvia's 2030 Climate Change Adaptation Plan
LAS	Latvian Association of Local and Regional Governments

LSIA	Latvian Association of Engineers of Refrigerating Equipment
LSUA	Latvian Heat Business Association
LTRK	Latvian Chamber of Commerce and Industry
LU	University of Latvia
LEGMC	Latvian Environmental, Geological and Meteorological Centre
MF	Modernisation Fund
MFF	The EU's multiannual budget, of which: EU funds (ERDF, CF, EAFRD, ESF, EMFF, YEI)
FC	Cabinet of Ministers
FRM	Monitoring of forest resources
NAP2027	National Development Plan 2027
ND	No data
NEP	Sectoral Expert Board
IMS	Real estate tax
non-ETS	Activities not covered by the ETS
IFIS	European Economic Area and Norwegian Financial Instrument
NIPP	National Industrial Policy Guidelines 2027
RCN	Tax policy guidelines
OSS	Carbon certification schemes
PB	Municipal budget
UGS	Inčukalns Underground Gas Storage
PF	Private funding
PPPS	Public-private partnerships
TSO	Transmission system operator (electricity or gas)
VAT	Value added tax
R&I	Research and innovation
R&A	Research and development
RFNBO	Renewable fuels of non-biological origin (e.g. hydrogen)
RPPI	Industrial processes and product use
RTU	Riga Technical University
SAF	Sustainable aviation fuels
GHG	Greenhouse gas emissions
SEL	Solar energy for Latvia
SEA	Solar energy association
SES	Solar power plants and microgeneration units
Silava	Latvian National Institute of Forest Science Silava
SKF	Social climate fund
SM	Ministry of Transport
SPRK	Public Utilities Commission
DSO	Distribution system operator (electricity or gas)
STEM	Science, Technology, Engineering and Mathematics
STP	Public Transport Council
JTF	Just Transition Fund
COPPER	Smart Administration and Ministry of Regional Development
VB	National budget
IEA	Wind energy association
VID	State Revenue Service
LMP	Environmental Advisory Council
NCP	National Research Programme
VM	Ministry of Health
VUGD	State Fire and Rescue Service
ZEZ	Low emission zone
LULUCF	Land use, land use change and forestry.
MOA	Ministry of Agriculture;

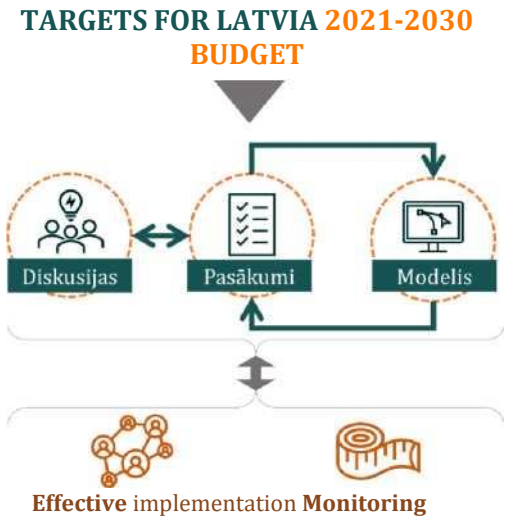
1. CONTEXT FOR UPDATING THE PLAN

Latvia's National Energy and Climate Plan 2021-2030 ('the Plan') is a long-term energy and climate policy planning document which sets out the guiding principles, objectives and lines of action of Latvia's energy and climate policy for the period up to 2030.

The plan followsa common EU framework1which aims to ensure the fulfilment of the commitments made by EU Member States in the context of the UN Framework Convention on Climate Change's Paris Agreement,2etc. TheParis Agreement brings together 195 countries in the world and aims to keep the average global temperature rise above 2 °C in an effort to limit it to 1.5 °C. The common European framework for national plans aims to ensure that the EU's green transformation is implemented in a coherent manner and avoids a significant advantage for an individual Member State in the European internal market.

The common European framework requires Member States to include in their national plans policies and measures covering the five main dimensions of the European Energy Union: (1) decarbonisation, (2) energy efficiency, (3) energy security, (4) internal energy markets, (5) research, innovation and competitiveness.

The plan shall be based on:



1) Targets 2021 — 2030;

2) A forecast of target values in the **baseline scenario,** without regulatory intervention (i.e. only through existing policies or measures already in place);

3) A list of policies and measures established by line ministries and social partners to achieve target values based on modelling results;

4) Forecast to meet the targets **Objectives scenario23**:

Once the plan has been established and approved, the EC needs to carry out a continuous assessment and monitoring of the actual situation and periodically (first until 2024 and then every five years) update the Plans, taking into account both whether the planned activities have been implemented to the intended extent and whether their implementation has produced the expected results.

The initial versions of the national plans in all EU Member States were developed in 2018. — 2019, while the first updated version is under preparation for 2023. — 2024 The national plans submitted by EU Member States can be consulted on the ECwebsite4.

1The design of the plan is governed by Regulation 2018/1999, where Regulation 2018/1999 determines both the information to be included in the Plan (Regulation 2018/1999 3. Articles -12) and the content of the Plan (Annexes I and III to Regulation 2018/1999). Therefore, the Plan has been drawn up taking full account of the provisions of Regulation 2018/1999 and in application of the Cabinet Regulation (2.12.2014) No 737 'Development
provisions for drawing up planning documents and impact assessment', paragraph 6, taking into account, as far as possible, the conditions laid down in these Regulations for the type of policy planning document – plan.

2https://unfccc.int/sites/default/files/english_paris_agreement.pdf

3Here and below, the 'Objective Scenario' is a scenario that models all policy measures included in the Plan, the fulfilment and implementation of which should result in achieving the objectives set out in the Plan.

4https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

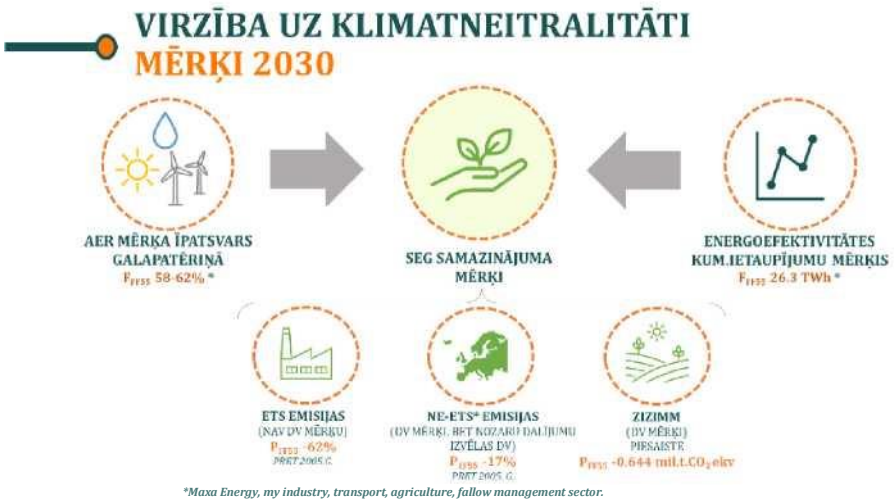
1.1. Renewal of the plan 2023 — In 2024

The current version of the Plan was approved on 04/02/2020 and is based on the factual situation at the time it was drafted (2018: — 2019). In view of the dynamic global events of recent years – the global pandemic, the fall in energy prices, the war in Ukraine and the related unprecedented increase in energy prices and the impact of these events on both EU and national economies and regulation, updating the Plan, in addition to assessing the effectiveness of the measures envisaged above, takes into account the following:

- Increasing climate change mitigation and energy policy ambition at EU level;
- The new EU-level non-ETS objectives for GHG emissions, LULUCF and energy policy;
- Latvia's past progress towards climate change mitigation and energy policy objectives and an assessment of its consistency with existing and new targets included in the Plan;
- Additional measures received from line ministries to achieve the new and more ambitious climate and energy policy objectives;
- Financing of the new support financing mechanisms at EU level and the actions and measures supported by it.

A summary of the updated Plan project was submitted to the EC for evaluation and recommendations, and on 5.12.2023. The draft Plan, which was discussed at the CCC meeting, was the basis for discussions with the public, stakeholders, line ministries and other institutions provided in the first half of 2024, following which the updated Plan was significantly fine-tuned, the targets and the list of measures needed to achieve them were updated and supplemented, as well as an assessment of the impact of the measures on the targets and socio-economic situations and incorporated the EC recommendations.

1.2. New objectives for the EU and EU Member States



The EU has submitted a renewed Nationally Determined Contribution to the UN, setting an increased target of 55 % GHG emission reductions in[2030 vs. 1990 5] (previously 40 %). As a result, the national targets of the EU Member States were also updated in order to move towards the 2030 target and climate neutrality by 2050.

[5] https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32021R1119

national position *for Fitfor55parket i* 6 and amending Regulation2018/8427. The*main pieces of legislation of the Fitfor55 package* are:

1) Directive 2003/87 of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (Directive 2003/87/EC, Directive 2023/958, Directive 2023/959)8;
2) Regulation 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework (Regulation 2018/841, Regulation 2023/839)9;
3) Regulation 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement (Regulation 2018/842, Regulation 2023/857)10;
4) Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Regulation 2018/1999, Regulation 2023/839, Regulation 2023/857);
5) Regulation (EU) 2023/955 of the European Parliament and of the Council of 10 May 2023 establishing a Social Climate Fund (Regulation 2023/955)11;
6) Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism (Regulation 2023/956)12;
7) Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport (Regulation2023/1805)13;
8) Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure (Regulation 2023/1804)14;
9) Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency (Directive 2023/1791)15;
10) 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 (Directive2018/200161; Directive2023/241 317);
11) European Parliament and Council 2024 24 April 2024/1275 on building

National initial position No 1 of the Republic of6 Latvia 'On the European Commission's legislative package 'Fit for 55' and Latvia's path towards climate neutrality in 2050, approved at the Cabinet meeting on 21 June 2022
National initial position No 1 of the Republic of7 Latvia 'On the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement', approved at the 30/11/2021 meeting of the CC
8https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A02003L0087-20230301
9https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=celex%3A32023R0839
10https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A02018R0842-20230516&qid=1691394347773
11https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32023R0955&qid=1695630897917
12https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32023R0956&qid=1695630955252
13https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32023R1805
14https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX:32023R1804
15https://eur-lex.europa.eu/eli/dir/2023/1791
16https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A02018L2001-20220607#tocId30
17https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=OJ%3AL_202302413

energy performance (Directive 2024/1275)18;

12) European Parliament and Council 2023 Regulation (EU) 2023/2405 of 18 October on ensuring a level playing field for sustainable air transport (ReFuelEU Aviation) (Regulation 2023/2405)19;
13) Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector (Regulation 2019/2088);
14) Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Regulation 2020/852);
15) Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting.

11.12.2019 The EC Communication on the European Green Deal highlights the need to steer financial and capital flows towards green or environmentally sustainable investments. 14/01/2020 The EC Communication on the European Green Deal Investment Plan further explored the sources of finance and proposed the creation of an EU green bond standard. Regulation 2019/2088 clarifies the term 'sustainable investment', which is an investment in an economic activity whose essence is respect for environmental, social and governance aspects. Regulation 2020/85220 laysdown the criteria under which an investment is to be considered sustainable: an economic activity contributes substantially to one of the environmental objectives set out in this Regulation, while not significantly harming any of the objectives and providing minimum safeguards in the social and governance fields, and the allocation condition under Regulation 2020/852 allows the investor to obtain assurance that the project, measure, investment or other expenditure in question contributes significantly to the achievement of environmentally sustainable objectives.

1.3. Context of the plan

Latvia currently has a number of policy planning documents (including information reports) on energy and climate change mitigation issues that set energy and climate change mitigation and adaptation objectives, as well as policies that directly or indirectly contribute to achieving these objectives:

1) Latvia's sustainable development strategy "Latvia 2030"21;
2) Latvia's National Development Plan 2021 — M202722;
3) Information report "Long-term building developmentstrategy23"
4) Latvia's climate change adaptation plan for the period up to203024;
5) Latvia's strategy to achieve climate neutrality by205025;
6) Environmental Policy Guidelines 2021 — M202726;
7) National Waste Management Plan 2021 — M202827;

18https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=OJ:L_202401275
19https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=OJ:L_202302405
Regulation (EU) 2020/852 of the20 European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088
21http://polsis.mk.gov.lv/documents/3323
22https://www.pkc.gov.lv/lv/nap2027
23http://polsis.mk.gov.lv/documents/6898
24https://polsis.mk.gov.lv/documents/6507
25https://likumi.lv/ta/id/342214-latvijas-strategija-klimatneitralitates-sasniegsanai-lidz-2050-gadam
26http://polsis.mk.gov.lv/documents/7479
27http://polsis.mk.gov.lv/documents/6951

8) Guidelines for the development of transport 2021 — M202728;
9) Science, technological development and innovation guidelines 2021 — M202729;
10) National Industrial Policy Guidelines 2021 — M202730;
11) Circular Economy Action Plan 2020-2027 31
12) Regional Policy Guidelines 2021 — M202732;
13) Financial Sector Development Plan 2022 — M202333;
14) Guidelines for the sustainable use of peat 2020-203034;
15) Territorial just transitionplan35;
16) Maritime planning 203036;
17) Latvia's Common Agricultural Policy Strategic Plan 2021-202737;
18) Plan – Priority lines of action in drainage policy 2021-202738.

In order for Latvia to move towards climate neutrality by 2050, KEM plans to develop an Energy Strategy by 2050 with the aim of assessing scenarios for decarbonisation, energy security and independence of the energy sector. In parallel, a review of the low-carbon development strategy is planned to be launched in 2024.

1.4. Energy policy roadmap

Objective 2:

- Ensure Latvia's full energy independence at affordable and competitive energy prices;
- Contribute to the decarbonisation of the economy, including through the overall electrification of energy and industry, and investments in the development of innovation and resource efficiency;
- Strengthen security of energy supply.

Challenges

Given the volume of installed electricity generation capacity in Latvia and the need to ensure national consumption, Latvia is the importing country of electricity. Due to historical circumstances, Latvia's energy sector, up to the Russian invasion of Ukraine, is closely linked to the Russian energy sector. By 2022, more than 95 % of natural gas, as well as a significant share of electricity, were imported from Russia. Since 2022, the Baltic States have taken important and important decisions that enable the future energy sector to be built on self-sufficiency, care for nature and human beings. Electricity trade with Russia has already ended in 2022, while natural gas from Russia has been banned as of 2023. These decisions provide a strong basis on which to build Latvia's future energy policy. In August 2023, the Baltic States decided to accelerate synchronisation with the EU common framework, with a deadline for the termination of the contract with BRELL until 28.2.2025.

At the same time, it must be borne in mind that the transformation of the energy sector requires complex adaptations for both society and businesses, as well as the fact that this transformation goes hand in hand with the already increasing cost of living and shrinking population. As a result, any future decision by the government and the Saeima will require a hard decision, where

28https://polsis.mk.gov.lv/documents/7239
29https://polsis.mk.gov.lv/documents/7053
30https://polsis.mk.gov.lv/documents/6983
31https://likumi.lv/ta/id/317168-par-ricibas-planu-parejai-uz-aprites-ekonomiku-20202027-gadam
32https://polsis.mk.gov.lv/documents/6588
33https://polsis.mk.gov.lv/documents/7398
34https://likumi.lv/ta/id/319013-par-kudras-ilgtspejigas-izmantosanas-pamatnostadnem-20202030-gadam
35https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu
36Approved by Cabinet Order No 232 of 21 May 2019 on Maritime planning for the internal marine waters, territorial sea and exclusive economic zone waters of the Republic of Latvia until 2030
37 https://likumi.lv/ta/id/342211-par-latvijas-kopejas-lauksaimniecibas-politikas-strategisko-planu-2023-2027-gadam
38 https://likumi.lv/ta/id/322390-par-planu-prioritarie-ricibas-virzieni-melioracijas-politika-20212027-gadam

it is important to take into account that no group of society is left behind.

The development of innovation and the development of technological leaps are an indispensable part of economic growth. For Latvia, the advantages of competition for a country with a small and open economy are underpinned by a key factor in innovation, technological factors and increasing competition. Research, innovation and competition are butical to ensure that Latvia takes advantage of its energetic and climate potential, contributing to economic growth through economically efficient and environmentally friendly solutions.

Extreme weather events in recent years clearly point to climate change. Extreme losses to the economy and society's well-being require an assessment of risks and vulnerabilities and the need for appropriate action. The energy sector is particularly sensitive to climate risks, which implies planning and implementing appropriate measures to strengthen the sector against the risks and extremes of climate change in all energy dimensions.

The draft Law on Climate Law provides for the drawing up and updating every 10 years of an assessment of the risks and vulnerabilities of climate change for the most sensitive sectors of the economy needed to draw up a policy planning document on adaptation to climate change for the next decade. The first updated risk assessments are foreseen for the risk and vulnerability assessments planned for 2024/2025 separately for the different energy dimensions.

Latvia's advantage

The transformation of Latvia's energy from the importing country to the energy exporting country requires a number of regulatory adjustments. The transformation is based on reaping existing benefits. These are:

Advantage of natural resources

– At the beginning of 2023, the area of forest stands in Latvia was 3 304.8 thousand hectares and forested:
  %39, While the total wood stock in forests reached 680 million$^{m^3}$40.
– Latvia has a well-developed livestock and poultry sector. Dairy farming is characterised by a large number of relatively small farms. Fragmented characterisation has so far prevented the efficient use of agricultural by-products (residue products) for the production of biomethane. It is estimated that by exploiting Latvia's biomethane production potential, it is possible to fully replace the entire natural gas consumption of thehousehold41.
– Latvia has an appropriate, flat topography and wind speed for cost-effective use of wind energy for the production of electricity;
– The Baltic coast and the relatively shallow inland sea, which could be suitable for offshore VES installations.

Efficient energy supply infrastructure

Latvia has three energy networks: electricity, natural gas and district heating, which are able to offer the same energy services directly or indirectly. The existing infrastructure allows for faster switching and system efficiency. Without further strengthening the electricity system, Latvia's electricity network is able to deliver nearly 3.5 higher capacity flows overall than today. This means that without a long-term restructuring of the electricity grid, there is scope to start producing high-capacity RES electricity. At the same time, in order to make good use of the existing grid, system control and connectivity development processes need to be aligned with the periodicity of new energy sources.

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39 https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__NOZ__ME__MEP/MEM020/table/tableViewLayout1/
40 https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__NOZ__ME__MEP/MEM030/table/tableViewLayout1/
41https://energy.ec.europa.eu/system/files/2023-09/Biomethane_fiche_LV_web.pdf

Liberalised markets, cost-based tariffs

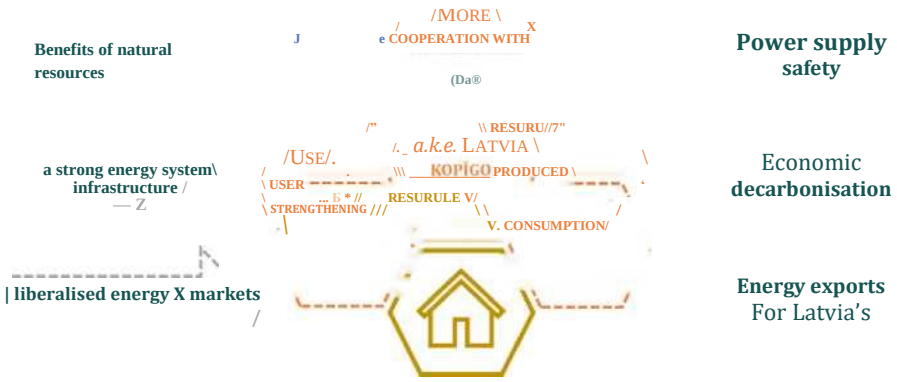
Since 2015, Latvia has fully opened the retail electricity market and since 2023 the retail market for natural gas. Significant efforts have also been made to ensure a sustainable cost-

reflective electricity tariff structure that incentivises the use of efficient networks. In addition, almost all wholesale market transactions take place on the electricity exchange. This means that both companies and users in the sector have a relatively high level of literacy and maturity.

The transformation is based on the four main regulatory development objectives set for four key energy sectors:

1. Closer cooperation with the EU;
2. Efficient use of shared infrastructure;
3. Strengthening active users;
4. Use of resources produced in Latvia.

The Transformation Framework provides for the implementation of a number of legislative amendments in the electricity, gaseous fuels and heat sectors.

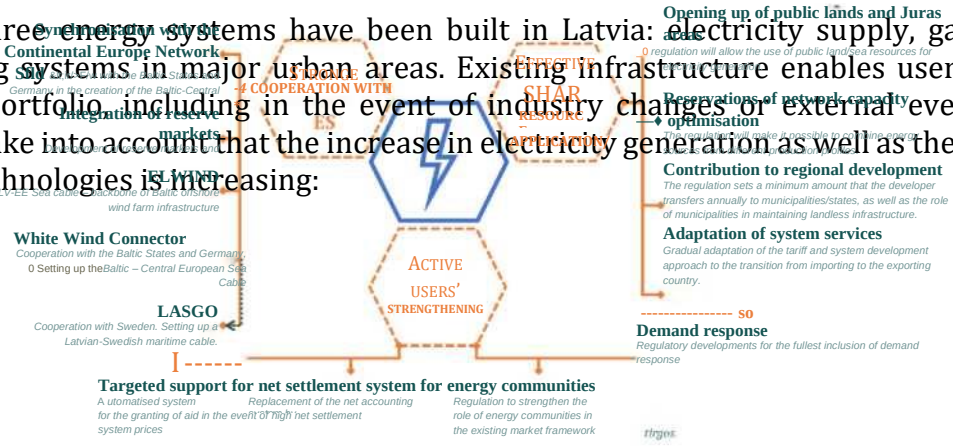


Policies in the electricity sector

Electricity plays a central role in decarbonising Latvia's economy. Given Latvia's natural advantages, Latvia has a significant and yet untapped potential to produce competitive electricity in the region and the EU. Relevant policies have been designed to promote cost-efficient electricity generation, the strengthening of active customers and closer cooperation with the EU.

Policies in the gaseous fuel sector

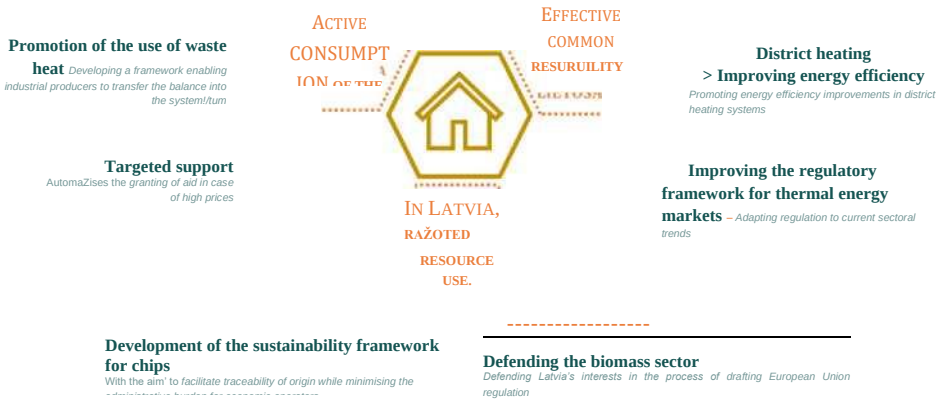
Historically, three energy systems have been built in Latvia: electricity supply, gas supply and district heating systems in major urban areas. Existing infrastructure enables users to diversify their energy portfolio, including in the event of industry changes or external events. It is also important to take into account that the increase in electricity generation as well as the development of available technologies is increasing:



business case for the extraction and use of renewable gaseous fuels. It should also be noted that gaseous fuel infrastructure is characterised by low energy losses. Against this background, the policy on gaseous fuels is geared towards maintaining existing infrastructure and gradually greening gaseous fuels.

Policies in the heat sector

The main challenges in heating are energy efficiency, both in terms of production and transmission and consumption in particular. A major advantage in Latvia is the diversity of energy resources: in Latvia, heat is produced using both bio-fuels, natural gas and solar energy. The transition to full zero-emission production in Latvia is currently not technologically and economically rational, but there is scope for more efficient use of available heat sources and waste heat in particular. Policies in the heat sector relate to adapting the system to lower temperature heat sources, bringing the heat and electricity market closer, energy efficiency in both generation, transmission and consumption contexts, including the transition to zero-emission technologies, as well as increasing the use of indigenous renewable energy sources.



1.5. Climate policy roadmap

Objective 2:

Contribute to climate change mitigation and resilience toachieve climate42neutrality by 2050 at the latest, ensuring the achievement of national climate objectives in line with EU and international commitments and frameworks, taking into account environmental, social, economic and governance sustainability.

Advantages

Achieving climate neutrality objectives and ensuring economic growth requires a transformation of

42Within the framework of existing EU directives and in line with EU and international obligations and regulations

the Latvian economy. The transformation is based on the use of the policy instruments listed in the following chapter, as well as the use of existing benefits. In Latvia, the following may be considered as significant advantages:

Physical geography conditions

- Latvia's climate is determined by the country's location in the temperate climate zone. Latvia is characterised by frequent changes in air masses, with an average of 170 atmospheric fronts per year, which can serve to develop wind energy. The use of solar radiation in energy production is seasonal in nature. Overall, in Latvia, the sun shines on average between 1700 and 2 000 hours per year, with the highest of about 300 hours in July, and the lowest in December, when the total sunshine time is around 25 hours, or less than onehour43.
- Latvia's relatively small area, with a large share of agricultural land (34.91 % (44 2024) and 53.63 % (2024) of forest land (forest, marsh, scrubland) – 53.63 % (2024).
- More than half of Latvia's territory is forest land. Through targeted and sustainable forest formation and resilience, it is possible to increase $CO2_{removals}$ in the LULUCF sector, promote the use of wood in construction and the production of innovative wood products, as well as the use of biomass, including recycled wood, in the energy sector.

High potential for electrification

According to the energy experts' assessment, Latvia has great potential in the electrification of industry and transport, including railways, in substituting fuels and technologies used in production processes with electricity as a source of energy, as well as replacing vehicles used in transport with EVs. Electrification of production processes and transport would significantly increase Latvia's electricity consumption, but if at the same time the consumption of primary energy sources, fuel and fuel consumption were reduced and the overall energy efficiency of the economy were improved, the total national energy consumption will decrease. At the same time, a comprehensive electrification of the transport sector requires investments for the active deployment of high-power recharging points and for the electrification of rail.

Public and private financing

The financing needs are closely linked to the achievement of Latvia's climate objectives, including the sectors of energy, transport and agriculture, which generate the highest GHG emissions. In particular, the availability of significant funding for measures aimed at reducing GHG emissions in non-ETS activities, in particular in the household sector. In parallel, access to finance must also be ensured for climate resilience. But most importantly, avoid financing measures that run counter to the reduction of GHG emissions, carbon sequestration and climate resilience.

06/12/2021 The Treasury issued, on behalf of the Republic of Latvia, for the first time, national sustainable Eurobonds with a maturity of eight years, raising funding of 600 million. Million. Bonds are issued to support Latvia's sustainable development and to attract financing for measures and priorities aimed at mitigating the negative impacts of climate change, moving towards climate neutrality and enhancing prosperity. Cabinet Regulation No 122 of 27 February 2024 on the issuance of municipal government bonds of the Riga State City includes a framework for local government green bonds, which will provide additional resources to build sustainable infrastructure.

There is a need to develop green public procurement, including energy efficiency conditions, as a horizontal measure in all sectors and to increase its share of total public procurement.

The level of public funding, although significant, will not be sufficient to achieve all the objectives. In addition to public funding, it is therefore necessary to mobilise private investment. Financial instruments are an effective means to maximise and activate as much private capital as possible.

43https://videscentrs.lvgmc.lv/lapas/latvijas-klimats

44 Statistics on land use land use types on 1 January 2024 https://www.vzd.gov.lv/lv/zemes-sadalijums-

Project financing, in particular support to economic operators, should prioritise*debt-based*oriented instruments, guarantees, venture capital investments or*blended finance, thus ensuring the* mobilisation of additional financing from the private sector for sustainable development, including climate change mitigation and adaptation.

There is a growing interest in sustainable financial instruments worldwide and green, social and sustainable bond issuances are increasing. To date, only a few companies in Latvia (AS Latvenergo, AS Development Financial Institution Altum and AS Highprieguma Network) have issued green bonds in line with international green bond standards, but the total volumes are already significant at 220 million. Million. It is essential for Latvian financial sector actors (credit institutions and other financial service providers) to set private finance targets and investment opportunities within the NECPs in order to allow the development of financial instruments, as well as other capital companies, including public persons or derived public persons, should be encouraged to assess the necessity and feasibility of such funding. In order to justify the eligibility of sustainable financial instruments within the meaning of the EU framework, it is necessary to ensure that energy efficiency data are available to financial market participants.

The contribution to the corporate sector sustainability objectives will have to be included in the annual accounts management report based on Directive 2022/2464 as of the reference year 202445.

Under the Climate Action Instruments, the following sources of finance are available:

- **Vb –** E.g. EKII, MF, Government loans;
- **PB –** e.g. green bonds;
- **EU funding** – e.g. programming period 2021-2027 for EU funds (of which: JTF), RRF;
- **EC financial instruments (programmes)** such as the SCF, LIFE, IF, Horizon Europe;
- **Financing by international financial institutions,** including from the European Investment Bank, the European Bank for Reconstruction and Development and the Nordic Investment Bank;
- **Other funding**, e.g. IFI, Latvian-Switzerland cooperation programme;
- **Additional financing** – such as sustainable lending and other sustainable financial instruments, green and sustainable bonds; bilaterial businessi46.

Challenges

While Latvia has several advantages, it also faces a number of challenges towards climate neutrality and resilience.

Total GHG emissions (excluding the LULUCF sector) are dominated by non-ETS sector activities (83 %), which requires the use of a combination of regulatory measures, incentives and subsidies to promote emission reductions and climate objectives. This may include setting emission reduction targets and providing financial incentives for low carbon technologies and practices.

The largest non-ETS GHG emissions come from the following sectors: transport (37 % of non-ETS GHG emissions), agriculture (27 % of non-ETS GHG emissions), non-ETS energy (26 % of non-ETS GHG emissions), waste management (7 % of non-ETS GHG emissions) and a small share only in industrial processes and product use (3 %). The LULUCF sector is an important contributor not only to GHG emissions, but also tocontribute to CO2 removals. The LULUCF sector plays a key role in achieving climate neutrality by 2050, as it is possible to promote CO2 removals to offset non-reducible GHG emissions through additional measures to increase forest resilience and productivity and reduce GHG emissions from non-forest lands.

Directive (EU) 2022/2464 of the45 European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32022L2464

46Bilateral transactions between EU Member States, such as transactions on trading in annual emission allocation units or HE over-commitments (AE statistics) sales

In the**transport sector**, the share of old vehicles, low population density and a high share of the rural population (30.2 % in 2 022 in Latvia47and 25.2% on average in the EU48) contribute to transport dependency and reduce the effectiveness of public transport development measures. Challenges are also posed by the lack of solutions for the development of public electric and hybrid transport systems in rural areas, as well as challenges to "move" passengers and freight from road to rail, which, combined with the reduction of GHG emissions, can have a significant impact on the longer lifespan of existing road transport infrastructure. The main challenges in the **energy** sector are to increase the share of RES while significantly intensifying the implementation of energy efficiency improvement measures. A significantly outdated and fragmented housing stock in terms of construction solutions is a challenge for energy efficiency measures, the implementation of which is also negatively affected by the low purchasing power of the Latvian population and the significant increase in construction and credit costs. In the energy sector, the high consumption of natural gas to provide 'base capacity' could be a major challenge. EU legislation on forestry49 and biodiversity50, as well as the strengthened sustainability and GHG emissions saving criteria, will also affect the availability of bioenergy resources by increasing the price of such resources and increasing the administrative burden associated with such resources. **Agriculture** has a relatively high share of organic soils in relation to the EU average, increasing nitrogen mineral fertiliserconsumption51, so that the management of agricultural soils also accounts for a high share of GHG emissions. The livestock sector (in particular the fermentation of livestock intestines) also accounts for a relatively high share of GHG emissions. Currently, in the **LULUCF** sector,$_{CO2}$ removals do not cover GHG emissions, therefore it is necessary to introduce the measures included in the Target Scenario for the sector's progress towards its targets, as well as to assess new effective measures.

The majority of Latvians believe that human activity has generally affected the ongoing climate change in theworld52. A significant lack of investment and technology transfer hampers the implementation of GHG emission reduction measures and climate change adaptation measures. Political decision-making is time-consuming and the implementation of measures has no immediate effect.

Climate resilience requires climate change adaptation measures based on climate risk and vulnerability assessment. The implementation of climate change adaptation measures at all levels of government, both at national, regional and local level, requires investment planning, bearing in mind that the costs of their implementation and the costs of tackling climate change will only increase in the future.

Policy instruments

– **The use of policies and technologies conducive to decarbonisation and electrification** will contribute to reducing GHG emissions (energy, transport, agriculture, industrial processes, etc.). Electrification requires a shift from fossil to zero-emission energy sources, as is the need to develop the production and use of different alternative fuels. The economic path towards climate neutrality requires the development of technology-based carbon removals and natural carbon removals, and the promotion of carbon storage in long-term products.

47https://stat.gov.lv/lv/statistikas-temas/iedzivotaji/iedzivotaju-skaits/preses-relizes/12338-iedzivotaju-skaita-changes?themeCode=IR
48https://ec.europa.eu/eurostat/statistics-Explained/index.php?title=File:How_are_national_populations_distributed_by_degree_of_urbanisation_(%25_share_of_total_population,_2021)_URE2023.png
49For example, Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010
50E.g. Regulation on nature restoration
51CSP
52https://www.zalais-barometrs.lv/lv/zinas/111

- Promoting**science, research** will contribute to the development of green innovations in the areas of GHG emission reduction and adaptation. Their commercialisation would enable the export of innovative technologies and create highly skilled jobs.
- **Public funding and fiscal policy** will promote behavioural change by favouring more climate-friendly solutions, as well as ensuring a just transition.
- **Informing** the public provides for wide-ranging public information and education activities to ensure that everyone understands and is committed to climate neutrality and resilience.

The introduction of policies and measures **will lead to changes in behaviour** in society and the economy, **efficient use of resources** and the application of circular economy principles, and promote **adaptation to climate change**. **High added-value products** will be produced, exported and locally consumed in Latvia. These processes will contribute in the long term to the objectives of climate neutrality and climate resilience, which will also ensure a sustainable environment and growth of the Latvian economy, as well as prosperity for Latvian citizens.

Results

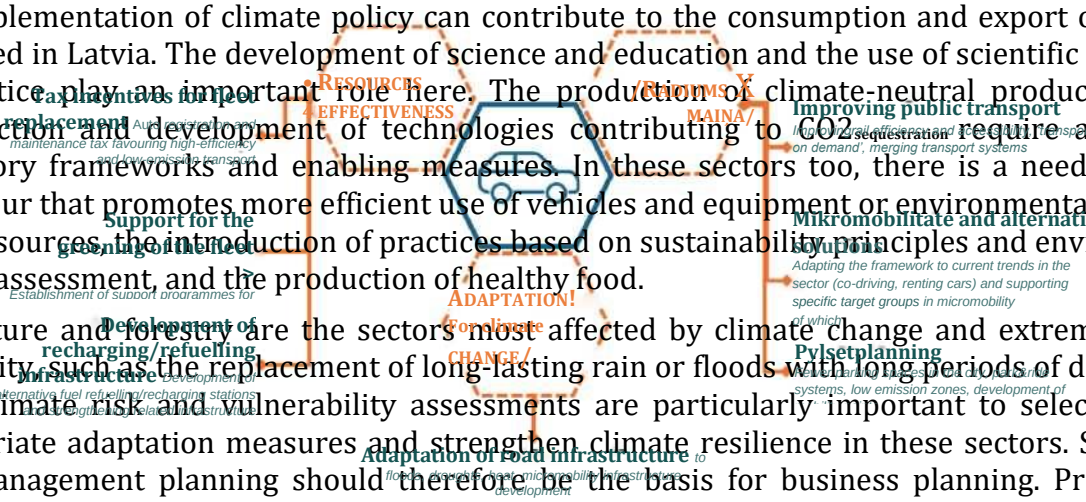
- **Climate neutrality.** A state where all non-reducible GHGs are fully compensated by carbon sequestration and/or carbon capture.
- **Climate resilience:** Promoting climate resilience through climate change mitigation measures and climate change adaptation.
- **Economic sustainability.** Latvia's path towards climate neutrality is ensured by building competitive economic development that delivers GDP growth while reducing GHG emissions and increasing $CO2_{removals}$, without adversely affecting the achievement of the related policy objectives.
- **A prosperous society.** Implement climate policies in a socially just way to alleviate energy and mobility poverty in the short and long term, including the use of financial instruments for measures that take into account social aspects.
- **Environmental and nature sustainability.** Achieving climate neutrality and resilience by protecting water resources and biodiversity, ensuring the transition to a circular economy and pollution reduction and control.

Policies in the transport sector

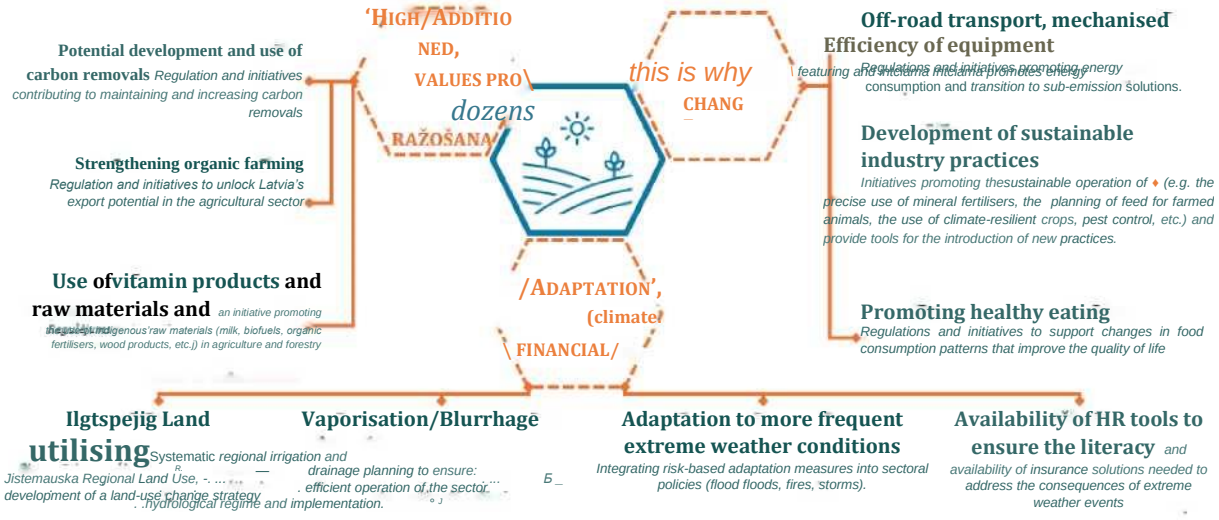
In the transport sector, there are several strands of action: (1) strengthening the role of rail transport; (2) improving the accessibility and quality of public transport; (3) The renewal of the Latvian fleet with low emissions or zero-emission vehicles and the gradual reduction of the average age of the Latvian fleet. This requires, first, the development of a tax policy that incentivises the replacement of the fleet and strengthens the application of the polluter pays principle. Secondly, support programmes for the replacement of vehicles for specific target groups should be developed, focusing on vulnerable transport users or economic operators (including municipal operators), focusing on light and commercial vehicles and public transport. Thirdly, there is a need to develop transport energy infrastructure with refuelling points for alternative fuels. Societal behavioural change should be encouraged by diversifying public transport services, developing micro-mobility and transforming urban planning solutions. It is essential to adapt road infrastructure to extreme climatic events, which are particularly important in the context of civil protection measures and road safety.

Policies in the agriculture, forestry and land use sectors

The implementation of climate policy can contribute to the consumption and export of products produced in Latvia. The development of science and education and the use of scientific knowledge in practice play an important role here. The production of climate-neutral products and the introduction and development of technologies contributing to CO_2 sequestration require appropriate regulatory frameworks and enabling measures. In these sectors too, there is a need to change behaviour that promotes more efficient use of vehicles and equipment or environmentally friendly energy sources, the introduction of practices based on sustainability principles and environmental impact assessment, and the production of healthy food.

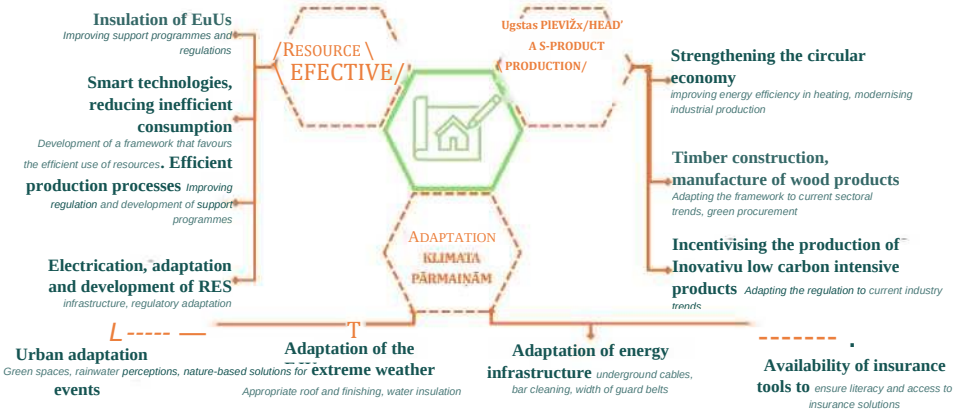


Agriculture and forestry are the sectors most affected by climate change and extreme weather variability, such as the replacement of long-lasting rain or floods with long periods of drought and heat. Climate risk and vulnerability assessments are particularly important to select the most appropriate adaptation measures and strengthen climate resilience in these sectors. Sustainable land management planning should therefore be the basis for business planning. Protection of organic soils and efficient land management are important, so drainage/irrigation systems should be subject to sustainability objectives and site-specific conditions.



Policy orientations for buildings, industry

Urban and extra-urban infrastructure and industries should be subject to climate risk and resilience assessments and include criteria for climate change in development planning documents and investment projects that take into account the risks of climate change and plan relevant climate change adaptation measures. The efficiency of resource use and management needs to be improved by establishing support programmes and improving the regulatory framework for improving the energy efficiency of buildings, by diversifying financing models for building renovation, including by encouraging private sector involvement, the deployment of smart technologies and reducing inefficient consumption, the application of circular economy principles, the efficiency of production processes and the transition to renewable energy resources. The use of products produced in Latvia should be encouraged by developing the use of timber in construction, as well as the creation of new production facilities for the processing of logs currently exported into wood products, thereby increasing added value and developing circular economy principles and technologies.



2. NATIONALLY SET OBJECTIVES AND TARGETS

2.1. Objectives and assessment of their fulfilment

Dimension I: Decarbonisation and HE

Objective	Actual value		Projected values 2030		Target value	
	2021 53	2022 54	Base case scenario	Target scenario	2025	2030
I GHG emission reduction targets						
Total GHG emissions target and values						
% as opposed to	—58,8	—61.1	—66,4	—68,9	—	—65
Total GHG emissions target and volume of non-ETS activities						
% against2005 56	+ 1,0	—1,9	—12,7	—20,5		—17
kt CO_2 eq.	8680	8436	7505	6835	8 21 058	≤ 7 13 6
Change in GHG emissions from sectoral non-ETS activities (% vs 2005) and target volumes (kt CO_2						

53 2024 GHG inventory submitted to the EC, available on the European Environment Agency website https://cdr.eionet.europa.eu/lv/eu/mmr/art07_inventory/ghg_inventory/envzfkvaa/; EUROSTAT

54 2024 GHG inventory submitted to the EC, available on the European Environment Agency website https://cdr.eionet.europa.eu/lv/eu/mmr/art07_inventory/ghg_inventory/envzfkvaa/; EUROSTAT

55Information report on Latvia's strategy to achieve climate neutrality by 2050

56According to Annex I to Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on determining Member States' annual emission allocations for the period 2021 to 2030, the value of Latvia's 2005 greenhouse gas emissions pursuant to Article 4(3) of Regulation (EU) 2018/842 is 8 598 kt CO 2 eq. Pursuant to Annex II to Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on determining Member States' annual emission allocations for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council, the annual emission allocation for each Member State has been determined for each Member State. For the year of the period from 2030 pursuant to Article 4(3) of Regulation (EU) 2018/842 adjusted in accordance with Article 10 of that Regulation (non**-ETS objectives),**i.e. 10 650 kt CO 2 eq. for Latvia in2021; 2022 – 8 855 kt CO 2eq.; 2023 – 8 640 kt CO 2eq.; 2024 – 8 425 kt CO 2eq. According to the 2024 GHG inventory, the 2021 and 2022 values do not exceed the set targets.

57In accordance with Annex I to Regulation 2018/842

58Pursuant to Annex II to Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on determining Member States' annual emission allocations for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council, the annual emission allocations of each Member State for each year of the period from 2021 to 2030 pursuant to Article 4(3) of Regulation (EU) 2018/842, adjusted in accordance with Article 10 of that Regulation.

59Indicatively, in 2025, the EC will carry out a comprehensive review of the national GHG inventory data to be submitted by Member States pursuant to Article 26(4) of Regulation (EU) 2018/1999 in order to establish Member States' annual net greenhouse gas emission reduction targets pursuant to Article 4(3) of Regulation (EU) 2018/841.

60. Change in GHG emissions from sectoral non-ETS activities compared to 2024 GHG inventory 2005 and absolute target value (kt CO_2 eq) in 2030.

Objective	Actual value 2021[53] 2022[54]		Projected values 2030 Base scenario	Projected values 2030 Objectives scenario	Target value 2025	Target value 2030
Energya 61	—4,9	—11,2	—33,0	—34.7	—	1593,75
Transportation	+ 3,8	+ 1,0	—2,3	—21,2	—	2446,47
RPPI	+ 117,9	+ 101.0	+ 59.4	+ 45.7	—	203,39
Agriculture	+ 25,8	+ 25.9	+ 22.5	+ 21,5	—	2176,33
Waste and wastewater management	—17,4	—14,3	—39,8	—40,4	—	409,04
LULUCF GHG volume and objectives:						
Target for LULUCF accounting categories 2021-2025 (kt CO_2 eq.) 62	—		Not attributable	Not attributable	GHG emissions to be accounted for ≤ GHGs to be	—
LULUCF sector reporting category target 2026-2030 (ktCO_2eq) 64	+ 2201,6	+ 4944,16	+ 3294,6	—2436	—	—644 65
GHG intensity targets (%):						
Reduction of GHG intensity intransport 66	3,49 67	2,23[63]		15	—	15
GHG intensity reduction	0	0	ND	ND	2	6

61Small capacity installations in the transformation sector and industry, services sector, household, agriculture/forestry/fisheries.

62Pursuant to Article 4 of Regulation 2018/841, taking into account the flexibilities granted, Latvia is to ensure that the sum of GHG emissions accounted for in the period 2021-2025 does not exceed the sum of accounted $CO2_{removals}$ in the land accounting categories referred to in Article 2 of Regulation 2018/841, 'afforested land', 'deforested land', 'managed cropland', 'managed grassland', 'managed forest land', 'managed wetland'. GHG emissions and $CO2_{removals}$ are accounted for in accordance with the provisions of Regulation 2018/841, taking into account changes in GHG emissions and/or $CO2_{removals}$ against the reference levels set out in Regulation 2018/841, with the exception of afforested and deforested land accounting categories for which a*gross-net*approach is applied, where no baseline is established, and the accounting shall include the total amount of GHG emissions and $CO2_{removals}$ generated during that period.

63The target is limited to the period 2021-2025

64In line with the reporting categories set out in Article 2 of Regulation 2018/841.

65For Latvia 2030, the target achiever under Regulation 2018/841 shall be calculated as 2016. — 2018 the average actual GHG from 2 032 g GHG inventories by adding the fixed target share of -639 kt CO 2eq(removal) set out in column c of the amendment to the LULUCF Regulation in Annex IIa. The target of -644 kt CO_2 eq. included in Regulation 2023/839 is calculated on the basis of the average GHG value for 2016. — 2018 (-6 kt CO_2 eq) from 2020 Latvia's GHG inventory plus a fixed target share of -639 kt CO_2 eq. The final target for 2030 will be determined in accordance with the 2032 GHG inventory

66Article 25(1)(a) of Directive 2018/2001

67Calculated taking into account the version of the method set out in Article 27 of Directive 2018/2001 (Directive 2023/2413), using CSP data on transport energy consumption in Latvia and using the average GHG intensity of biofuels reported by fuel suppliers

Objective	Actual value		Projected values 2030		Target value	
	2021[53]	2022[54]	Base case scenario	Target scenario	2025	2030
specific vesselm 68						
II RES share targets (%)						
Share ofAE in final energyconsumption 69	42,11	43,32	53,9	62,0	47,3	61
Share of AE in final electricityconsumption 70	51,4	53,3	88,1	100	—	> 80
Share of RES in electricity produced for domestic consumption in Latvia	68,1	71,6	94,3	109,4	—	100
Share ofAE in heating andcooling71 72	57,4	60,99	68,9	68,2	—	66,4
Share of AE in CSA and CAA72	56,6	63,9	67,2	68,4	—	73,9
Share of AE in transport	6,4	3,1	12,2	30,3	—	29
Share of AE in	57,2	60,6	61,6	61,5	—	65
Share of AE inindustry 74	58.5	63,2	73,2	78,1	—	73,1
Share of AE in agriculture, forestry and fisheries	18,0	17,5	ND	ND	—	30
modern biofuels75 and share of biogasin transport76	2,3	0,9		5.5	1	5.5
Objective	**Actual value**		**Projected values 2030**		**Target value**	

68Pursuant to Article 4(2) of Regulation 2023/1805, that objective applies to a ship that meets the conditions laid down in Article 2(1) – 'ships above 5000 gross tonnage carrying passengers or cargo for commercial purposes, irrespective of their flag'. The indicative target values for69 2022, 2 025.2027 are determined in accordance with the conditions laid down in Article 4(a)(2) of Regulation 2018/1999

70Eurostat calculation method taking into account Annex II of Directive 2018/2001

71applying Article 23(1) and (2) of, and Annex 1a to, Directive 2018/2001

72Article 24(1) of Directive 2018/2001 (the objective is indicative)

73Article 15a(1) of Directive 2018/2001 (target is indicative)

74Article 22a(1) of Directive 2018/2001 (the objective is indicative). The objective covers enterprises and products falling under Sections B, C and F of the Statistical Classification of Economic Activities (NACE2) and Section J Division 63. The target includes both final energy consumption and energy sources used for non-energy purposes, which are the use of fuels as raw materials in industrial processes, rather than their use for energy generation.

75Article 2(34) of Directive 2018/2001

76Article 25(1)(b) of Directive 2018/2001

	2021[53]	2022[54]	Base case scenario	Target scenario	2025	2030
Share of RFNBOin transport77	0	0	0,00002	0.6	—	1
Share of RFNBO in hydrogen used inindustry 78	0	0	0	0	—	42
79 share ofsustainable fuels in airtransport 80	0	0	ND	ND	2	5
innovative AE technology in81 newly installed AE capacitys 82	0	0	ND	ND	—	5

Achieving its GHG emissions targets in the non-ETS and LULUCF sectors will be a challenge for Latvia in the period up to 2030, but they are essential for achieving climate neutrality. The main challenges to achieving these objectives are: (1) the development and implementation of effective policies and regulations to reduce GHG emissions and sustainably manage land use, taking into account resistance from different actors; (2) the transition to zero-emission technologies and practices in sectors such as transport, agriculture and buildings can require significant technological innovation and investment; (3) behavioural change, both at individual and company level, which are difficult to influence and maintain; 4) adequate funding and investments are needed to support initiatives aimed at reducing emissions and promoting sustainable land use; (5) the quality of the data, including the presentation of all measures taken in the GHG emissions data. Addressing these challenges requires working together at all levels, both state and business, with a clear and ambitious target, as well as a combination of policies and measures, such as promoting HE, improving energy efficiency, sustainable land management, afforestation and other measures to reduce GHG emissions and increaseCO_2 sequestration.

Latvia's share of HE exceeds 60 % in a large part of the energy balance sectors in 2022. Consequently, a significant increase in the share of HE for Latvia, as a country with already sufficiently high R & R & R & I shares, will be more difficult and costly. In Latvia, the biggest challenge is to achieve the HE targets for transport, in particular the target set for advanced biofuels and RFNBOs, given the purchasing power of the Latvian population, the age of the Latvian fleet and population density, while without a sufficiently significant increase in HE in transport and heating of HE, Latvia will not be able to ensure a significant increase in the total share of AE. Consequently, increasing the share of HE requires measures to be implemented specifically in the transport and heating sectors, focusing on those sub-sectors that have a relatively smallest share of AE from the outset. For the period to 2030, Latvia does not plan exports and imports of RFNBOs. Taking into account the amount of imported electricity counted as fully fossil-based electricity under the conditions for calculating renewable electricity, without taking into account the share of renewable electricity from the importing country, Latvia's share of renewable electricity is only slightly above 50 %, although the share of electricity produced in Latvia exceeds 75 % in recent years. Latvia is very well placed to significantly increase the share of renewable electricity in the

77Article 25(b) of Directive 2018/2001

Article 22a(1) of78 Directive 2018/2001, the objective applies only where hydrogen is used for final energy and non-energy purposes in industry

79Article 3(7) of Regulation 2023/2405

80Annex I to Regulation 2023/2405

81RE production technology that improves at least one way a comparable state-of-the-art HE technology or makes a usable AE technology that is not fully commercialised or involves a clear degree of usability risk

82Article 3(1) of Directive 2018/2001 (target is indicative)

amount of electricity produced in Latvia, while, in view of the above, it is not possible to predict its impact on the share of renewable electricity calculated using the EUROSTAT method.

Dimension II: Energy efficiency

Objective	Actual valuea 83		Projected values 2030		Target value
	2021	2022	Base case scenario	Target scenario	2030 84
total energy consumption (GWh)	52291	50088	47856	46877	44 71 785
final energy consumption (GWh)	48511	46081	44468	42433	40 24 086
cumulative end-use energy savings (GWh)	538,3	ND	1535,9	20869	29 52 287
renovated building floor area of public sector buildings (total renovated, million	ND 88	ND	ND	ND	2,5 89 90
annual reduction of public authorities' energy consumption (% vs 2021)	ND90	ND	ND	ND	—1,9 91

Given the overall economic development as well as the electrification of heating and transport, Latvia's indicative energy consumption reduction targets will be very difficult to achieve. In its assessment, the Commission has acknowledged that Latvia has almost reached its cost-efficiency ceiling for the provision of cumulative final energy consumption, making it very challenging and costly for Latvia to meet the new ambitious cumulative final energy consumption target, which is about 3 times higher than the target of the previous commitment period. 2013 — In 2021, part of large companies and large electricity consumers already drew attention to the fact that the energy efficiency improvement measures92 identified in the Energy Document are either too low in terms of energy savings against the necessary investments (not economically viable), or the payback period is too long for reduced opportunities to receive credit or support for energy efficiency improvements, a decision on the implementation of such a measure would be taken.

Although Latvia was supportive of the setting of targets for the public sector, Latvia will need to invest sufficient administrative resources to identify those public sector bodies that will be subject to the obligation to achieve the targets, and to monitor compliance with this target. In addition, it will be necessary to improve the already established monitoring system for the implementation of energy efficiency policies by further identifying the buildings of public authorities to be covered by the renovation target, setting baselines for public authorities' energy consumption and setting an annual reduction target for energy consumption, as well as by digitalising the data collection and monitoring system. At the same time, these objectives can be seen as a good starting point for strengthening the exemplary role of the public sector in energy efficiency policies and a rational reduction of public funding in energy costs.

83Eurostat as defined in Directive 2023/1791

As the energy efficiency targets set for84 Latvia are very ambitious, during the implementation of the Plan, the responsible sector ministries and other parties need to make additional efforts to design, coordinate and implement existing and planned support programmes in a timely manner, including looking for additional sources of finance to improve energy efficiency, in particular in the building sector by promoting the Renovation Wave, and in the context of the renovation of the long-term building strategy.

85Article 4 of Directive 2023/1791 (objective is indicative)

86Article 4 and Annex I to Directive 2023/1791 (objective is indicative)

87Article 8(1) of Directive 2023/1791

88A definition of 'public authority' is still under development and a list and coverage of public buildings is being drawn up

89Article 6(1) of Directive 2023/1791

90The definition of 'public authority' is still under development and the energy balance of public authorities is being established

91Article 5(1) of Directive 2023/1791

92Energy audit of enterprises, certified energy management system or supplemented environmental management system

Despite the ageing housing sector and the need to improve the energy efficiency of these dwellings, the attitudes of the population living in non-energy-efficient housing to improve housing and the ability of the population to bear the rising costs are rather negative. In Latvia, households meeting one of the energy poverty criteria most often live in a dwelling with very low energy efficiency. The public funding available is insufficient to trigger the "renovation bubble" in Latvia.

Dimension III: Energy safety and energy independence

Objective	Actual valuea 93		Projected values 2030		Target value
	2021	2022	Base case scenario	Target scenario	2030
share of imports in gross inland energyconsumption 94 (%)	38,33	38,75	—	—	30

The most significant impact on the share of imported energy in total domestic consumption is the consumption of energy in the transport sector, where imported oil accounts for the vast majority of energy consumption. The replacement of these products with indigenous fossil energy sources is technically impossible, as Latvia does not have significant oil or natural gas deposits that can be used to extract feedstock for conventional transport fuels, while the production potential of advanced transport fuels produced from RES, such as agricultural waste or biomass, is currently limited, which prevents large-scale substitution of oil products by RES at an economically affordable cost. Electrification of the transport sector and heat generation and an increase in the self-generation and self-consumption of HEs, for example by facilitating the transition to locally produced biomethane and RFNBOs should be considered the most reliable scenario and cost-competitive solution to reduce the share of imported energy.

Dimension IV: Integration of the EU's internal energy markets

Objective	Actual valuea 95	Projected values 2030		Target value
	2023	Base scenario	Objectives scenario	2030
interconnection (%)	69,42	> 70	> 70	> 70

Despite the fact that the interconnection of Latvia's electricity transmission connections with neighbouring countries is generally high, it is necessary to take into account the fact that the capacity of the Baltic States' electricity transmission connections with the Scandinavian and Central European countries may still be insufficient to meet the actual demand of system users. Such considerations relate both to the long-term electrification of transport, industry and heating, which will increase local electricity demand, together with the foreseeable future need to export a significant amount of electricity produced by the AE plants (VES and SES) in the Baltic States, which will significantly exceed the total user demand in the region, as well as the need to import significant electricity capacity in situations where the capacity of indigenous energy generation sources will be insufficient to coverdemand96. In order to ensure that transmission interconnection capacity matches the actual volume of network users, Latvia and the Baltic region as a whole prioritise the development of the transmission connections Harmony Link (Lithuania-

93Eurostat (nrg_ind_id)
94https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_ID/default/table?lang=en
95https://energy.ec.europa.eu/document/download/da7361c1-e609-44ac-a0f2-ea51d1f3799d_en?filename=LV_SoEUr%20Fiche%202023.pdf
96https://www.ast.lv/sites/default/files/editor/PSO_zinojums_2023.pdf

Poland), Baltic Wind Connector (Estonia – Latvia – Germany) and LaSGo Link (Latvia – Sweden).

Dimension V: Research, innovation and competitiveness objectives

Objective	Actual value 2021	Target value 2030
Share of innovative active enterprises (%) of all enterprises	32 97(2020)	> 40
Global Innovation Index (World Place)	38	30
European Innovation Review (heading in the overview)	25	20
Investment in R&I (% of GDP)	0,74 98	> 1,7
Private sector investment in R & I (% of R & I investment)	33	40

A major challenge in this dimension is to improve the monitoring of the achievement of the objectives in order to be able to monitor both the achievement of the objectives and to obtain data on the most complex issues in meeting the objectives. One of the most challenging issues at present, given Latvia's, EU and global geopolitical and economic situation, is to ensure the percentage of GDP investment in R & I set out in the Plan. At the same time, Latvia's objective and long-term strategy is to move towards smart reindustrialisation, focusing on higher value-added sectors that are less emissions and energy intensive, thereby contributing to the achievement of energy and climate objectives, while also contributing to economic development. Such a long-term strategy also aims to promote the development of innovative and high-tech technologies within the framework of both public policies and private initiatives in terms of energy and climate change mitigation and adaptation. The plan now puts a strong emphasis on research activities so that research results can then be used for innovation and technological development.

2.2. Aspects of target setting

Having regard to Article 5(1), point (e), Annex II, of Regulation 2018/1999 and Directives 2018/2001 and 2023/1709, Latvia took into account the following relevant circumstances when setting its energy targets:

- Latvia's RES target is Latvia's current cost-efficiency cap, where, according to modelling data, a higher share of RES already exceeds cost-efficiency and Latvia will require significant investments to achieve the targets.
- Latvia needs to ensure permanent capacity to ensure energy security and balancing systems, where Latvia currently produces electricity to cover consumption in neighbouring countries because of Latvia's geographical location.
- Latvia has complied with Article 4(5)(3) of Directive 2023/1791 and does not exceed the indicative national energy efficiency contribution calculated by the Commission to the EU binding final energy consumption target. Latvia has declared that the national contributions are determined on the basis of the 2020 EU Reference Scenario.
- Latvia's final energy consumption in 2022 was the fifth lowest among all EU Member States, while Latvia's third highest share of RES in final energy consumption in the EU would require significant additional efforts to reduce fossil energy beyond the cost-efficiency threshold.
- In view of Latvia's climatic conditions and the high share of CSA in total heating, Latvia will still need a sufficiently significant amount of peak and/or reserve capacity directly in heating due to the coldest months of the year and the heating season, which can reach 200 days g.

97https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__ENT__IU__IUS/IUS010/table/tableViewLayout1/
98https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__IZG__ZP__ZPR/ZPR030/table/tableViewLayout1/

- Latvia needs to ensure Latvia's interconnection capacity and also take into account the electrification of the economies of the neighbouring countries with which these interconnectors have been established.
- Latvia needs to take into account the significantly increasing domestic demand for electricity, which will also be driven by the electrification measures included in the Plan, while improving its energy security, Latvia must be able to improve self-sufficiency with its own electricity production.
- In Latvia, the share of RES in electricity, heating, CSA, buildings and industry exceeds 50 % (the actual share of renewable electricity in electricity in 2020 and 2021 exceeded 63 %) and a significant increase in the total share of HE in Latvia will only be possible by significantly increasing the share of renewable transport energy in the hard-to-decarbonise transport sector.

Latvia does not set HE targets broken down by technology or energy source used, at the same time:

- Latvia plans to increase the share of RES in electricity generation by increasing installed capacity of wind turbines and solar photovoltaics, in combination with energy storage facilities and bidirectional EV charging facilities.
- Latvia intends to increase the share of RES in heating and cooling by upgrading installed capacity of biomass application installations, increasing installed heat pumps, solar collectors, facilitating the transition to high-capacity heat pumps or electricity in CSAS, promoting combinations of different technologies in heat generation, and imposing an obligation on natural gas traders to share HE, thereby promoting the blending of biomethane with natural gas used for heat generation.
- Latvia intends to develop and promote the use of waste heat in CSAS, for example by using a data centre, a waste water treatment system (recovery of waste heat stored in waste water after biological treatment and before discharge into the environment) or waste heat from industrial plants, as well as by improving and correcting heat market regulation, in particular in Riga, so that CSAS can take full account of the currently unexploited potential by including it in the renewable heating target where waste heat is used.
- Latvia plans to increase the share of renewable transport energy by introducing an obligation for fuel suppliers to achieve a specific GHG intensity reduction, which will significantly increase the share of renewable transport energy, in particular advanced biofuels/biomethane and electricity use. Latvia plans to further accelerate the development of electromobility as a solution to mobility, energy efficiency and RES targets.
- In interconnection, Latvia is already meeting the EU target, while Latvia plans to complete existing projects to improve interconnection and implement the planned PCIs. For the improvement of the internal infrastructure, electricity transmission and DSOs shall take the necessary measures to optimise and pool the connection capacity of electricity users, as well as the necessary measures to allow for as many new wind and solar producers as possible (micro-generators and power plants) to be included in the internal electricity market.
- Given that both the electricity and natural gas markets have been liberalised in Latvia, there are no plans to set other objectives for the integration of the internal electricity and gas markets.
- There are no specific prohibitions in Latvia for any particular RES technology or type, but there are specific restrictions on the location or compliance of the technologies with environmental, biodiversity, societal or territorial conditions. In accordance with Directive 2018/2001, Latvia will designate accelerated RES deployment areas in 2025, with a greater focus on wind energy, solar energy, biomethane production and grid injection areas, with no specific areas for hydropower development or installations using solid biomass fuels. At present, the commissioning of new "baseline capacity" power plants in Latvia is not foreseen until 2030.

2.3. Consequences of not meeting the objectives set out in the plan

2.3.1. Penalties for failure to meet the objectives set

The Commission has the right to refer Latvia to the Court of Justice of the EU for failure to meet the objectives, as failure to meet the objectives is a failure to comply with EU law. In such a case, the Court of Justice of the EU may, in accordance with Article 260(3) TFEU, impose on a Member State a financial penalty, both lump sum and penalty payment, without excluding either of them, by the first finding judgment. A lump sum is set for each EU Member State plus a lump sum plus a penalty or penalty payment for the period by which the irregularity is remedied, i.e. until the specific objectives areestablished99:

1) the lump sum payment for Latvia is EUR 241000;
2) a lump sum of EUR 1080 per day (with a coefficient for seriousness,according to the Court of Justice of the100 EU: EUR 21600 per day) or a penalty payment of EUR 3230 per day (subject to a coefficient for seriousness according to the Court of Justice of the EU of EUR 64600 per day), calculated on a daily basis as long as the infringement persists.
3) Given that some targets are annual and annual reporting, sanctions for <u>each target that have not been achieved</u> could also be imposed on an annual basis:

0le2d4z1	until 7,884 millions EUR NAi *(penalty cash)*	until 23,58 millions EUR *(delay cash)*	until 23,82 millions EUR

From 2027 onwards, following the comprehensive national GHG inventory check set out in Article 38 of Regulation 2018/1999, there may be a negative impact on the national budget in case of non-achievement of targets.

2.3.2. Financial consequences of the use of flexibilities

The imposition of sanctions would not absolve Latvia from the need to comply with the objectives set, and consequently it would be necessary to purchase the amount of missing units from another EU Member State, with the result that, in addition to the costs already mentioned, the cost of purchasing units has to be taken into account. In this case, Latvia would have to identify potential counterparties, or EU Member States with a surplus of entities, and launch a negotiated procedure for the possible acquisition of units.

Bilateral negotiations would discuss the main conditions for a possible conclusion of a unit-to-unit transaction, including unit price. Considering that 2021 is forecast to be 2021. — In the period 2030, the demand for unit purchases will be higher than in 2013. — During the 2020 period, EU Member States with a surplus of units will have an interest in realising them at the highest possible price, which, according to the information currently available, could be equated with the price of emission allowances. In view of the above, as well as the possibility for EU Member States with a surplus of units to choose as a counterparty the EU Member State whose offer is more economically advantageous for it, Latvia, as the buyer country of the units, should adapt to the conditions required to meet the mandatory targets.

In the LULUCF sector, the baseline scenario 2026-2030 projects an under-execution of almost 23 Mt CO_2 eq (budget 2026-2030 + 2030 target). Due to the current absence of a market for

99Commission Communication C/2024/1123 of 26 January 2024 – Update of data used to calculate financial sanctions proposed by the Commission to the Court of Justice of the European Union in infringement proceedings
100Commission Notice 2023/C 2/01 of 4 January 2023 – Financial sanctions in infringement proceedings

removals and the fact that the trading of annual emission allocation units has been sufficiently inactive in the period up to 2021, it is not possible to assess the amount of financing needed to purchase the missing units. Where necessary, Latvia intends to use all the flexibilities set out in Regulations 2018/841 and 2018/842 to meet the targets, including the transfer of units, the accumulation of units, the transfer of annual emission units to meet the objectives of the LULUCF sector, or the use of removal units to meet the objectives of non-ETS activities. However, it should be noted that many of the measures in the LULUCF target scenario require considerable preparatory work and mobilisation of financial resources, so that their implementation is currently limited to the extent required. It is essential to ensure the transfer of scientific knowledge to industry and to step up work on the implementation of measures.

2.4. Responsibilities for meeting the objectives

Dimension	Sectors with the highest impact	Responsible sectoral policy maker	Relevant social partners	
DECARBONISATION AND RENEWABLE ENERGY	**Energy Transport Agriculture Forestry Industry Wastes**	**MoA MoA MoA MoA EM/municipalities**	**LAEF LDDK FICIL Latvijas banka LKF LMIB LTRK Auto Association**	**LSTS LBBA LOSP LDTA LSUA VEA LEEA SEA SEL LASUA**
. /X *	**Buildings Transport Industry Public sector**	**MoE KEM VARAM/Municipal FM/NRE/RES/House administration of justice/Champether House**	**LDDK LTRK LSUA LSIA EA LBBA Latvijas banka Auto Association**	
ENERGY EFFICIENCY IN BUILDINGS, TRANSPORT, MANUFACTURING PROCESSES				

(p) ENERGY SECURITY AND ENERGOENATY	**Energy Crisis management**	**MoA MoA/Ministry of Defence VARAM/EM**	**LDDK LTRK LSUA LSIA LEEA LBBA**
i'w\ 1 LS Б INTRA-EU ENERGY MARKET INTEGRATION	**Energy Internal Market**	**KEM EM**	**LDDK LTRK LEEA VEA SEA SEL**
RESEARCH, INNOVATION AND COMPETITIVENESS	**Entrepreneurship Vocational Training Science**	**MOA MOA MOA KEM**	**LDDK LTRK Institutes of Higher School of Science**

In order to achieve ambitious climate and energy policy objectives, all institutions involved (public sector, including municipalities, social partners, the non-governmental sector, economic operators, researchers and society at large) will have to make well-informed decisions based on research, data and socio-economic assessment. Part of these decisions could focus on profound changes in the farming practices adopted so far, in decision-making so far, in the behaviour of different sectors and groups of society.

3. CURRENT SITUATION, OBJECTIVES AND POLICIES

3.1. Decarbonisation

Latvia's total GHG emissions have been reduced by 61.1 % between 1990 and 2022 by[101], with the largest and most significant reductions in the energy (excluding transport) and waste sectors. Latvia's total GHG emissions in 2022 were dominated by GHG emissions from non-ETS activities at 83.3 %.

[101] 2024 GHG inventory: https://videscentrs.lvgmc.lv/lapas/zinojums-par-klimatu

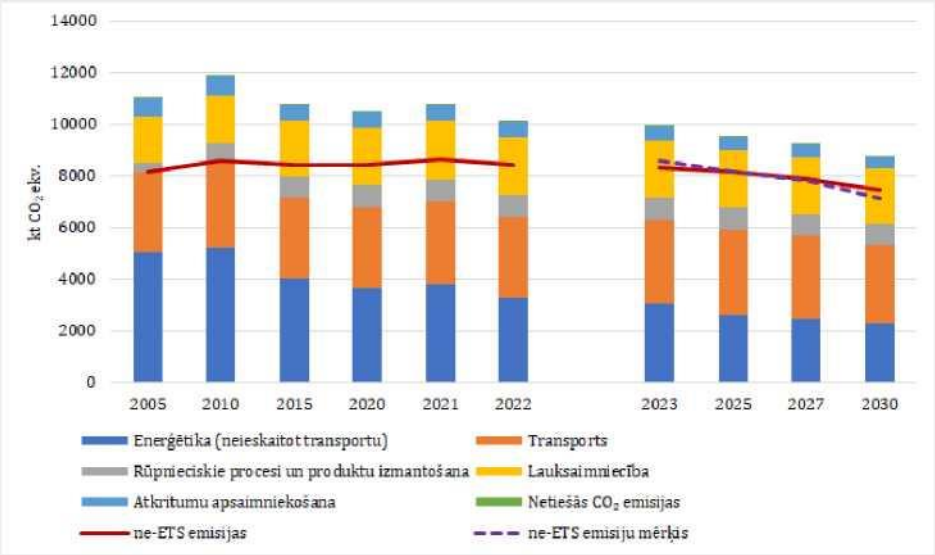


Figure 1 Latvia's GHG emissions 2005 — 2030 (Base scenario) and target (kt CO_2 eq.)

In thebaseline 102 scenario, GHG emissions from non-ETS activities are projected to decrease by 8.3 % 2005 — 1032030 Since 2005, non-ETS emissions have increased in RPPI (59.4 %),
agriculture (22.5 %). On the other hand, emissions from 2005 decreased for households (21.6 %), other non-ETS energy (37.5 %) transport (2.3 %) and waste management (39.8 %).

In 2022, the total consumption of HE in Latvia was 20 748 GWh and the share of HE in 2022 was 43.3 %.104
For 2021 and 2022, the share of HE is part of the indicative trajectory for reaching the updated2030 target105106.

Figure 2. AE volume (left-hand scale, GWh), share and target share (right-hand scale, %) [106]

In 2022, the actual share of HE was higher than 60 % in almost all sectors for which targets are set, with the exception of electricity, transport and agriculture and forestry, where the share of HE has been decreasing in recent years. In the baseline scenario, the share of RES in final energy consumption will increase to 53.9 % in 2030.

102The baseline scenario is consistent with the 2023 integrated report on policies, measures and GHG projections the scenario with existing measures and projections updates based on the 2024 GHG inventory at sectoral level.
103The reduction is calculated on the basis of projected 2030 GHG emissions and 2005 from the 2024 GHG inventory.
104EUROSTAT
105Article 4(a)(2) of Regulation 2018/1999
106CSP, FEI

the share of RES in electricity is increasing, while RES in heating and transport are increasing to a lesser extent.

3.1.1. Transportation

Base Scenario I

In 2022, total emissions from the transport sector increased marginally (1.0 %) in[107] compared to 2005 levels. This trend was mainly driven by a decrease in fuel consumption for rail transport, in line with the trend of increasing fuel consumption in road transport. In the period up to 2030, GHG emissions from transport will decrease by 2.3 % compared to 2005.

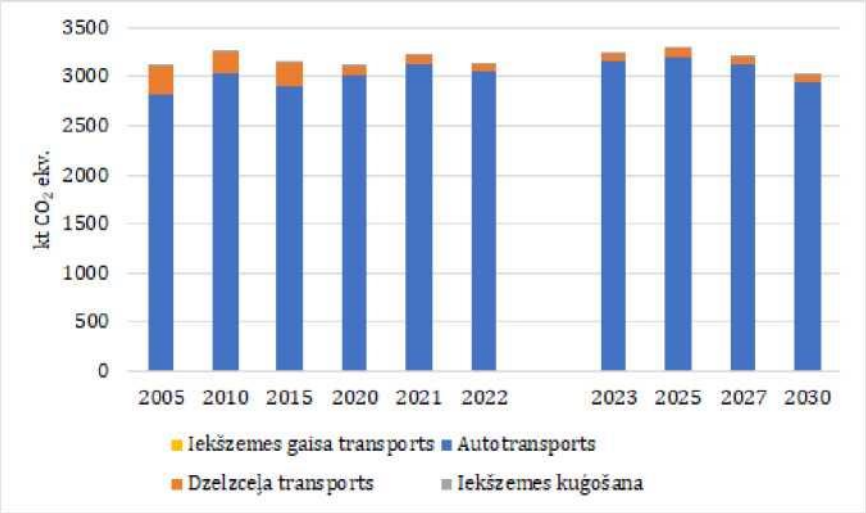


Figure 3. Transport GHG emissions 2005 — 2030 (kt CO_2 eq.)

The reduction of GHG emissions in transport (road transport, which has the highest share of transport emissions) is fully achievable by setting the 2030 GHG intensity reduction targets for fuel suppliers as set out in Directive 2018/2001 and in the Plan, without setting any limits for economic operators to achieve this target, i.e. economic operators will be able to choose their own ways of achieving the target. At the same time, the availability of eligible renewable forms of energy will make it more difficult to meet this target, e.g. the transport sector is expected to face high competition in the demand for advanced biofuels, as the supply of these fuels is not very high, whereas the use of advanced biomethane is currently hampered by the low number of eligible vehicles and by the condition laid down in directly applicable EU legislation that investments for the purchase of such vehicles do not meet the conditions for sustainable investment. The highly active electrification of road transport in the transport sector in the Basel scenario will significantly contribute to the reduction of GHG emissions in transport if the supply and price of EVs continue to improve and if measures to promote the use of EVs are continued, as well as if measures to encourage rail use continue.

[107] 2024 GHG inventory: https://videscentrs.lvgmc.lv/lapas/zinojums-par-klimatu

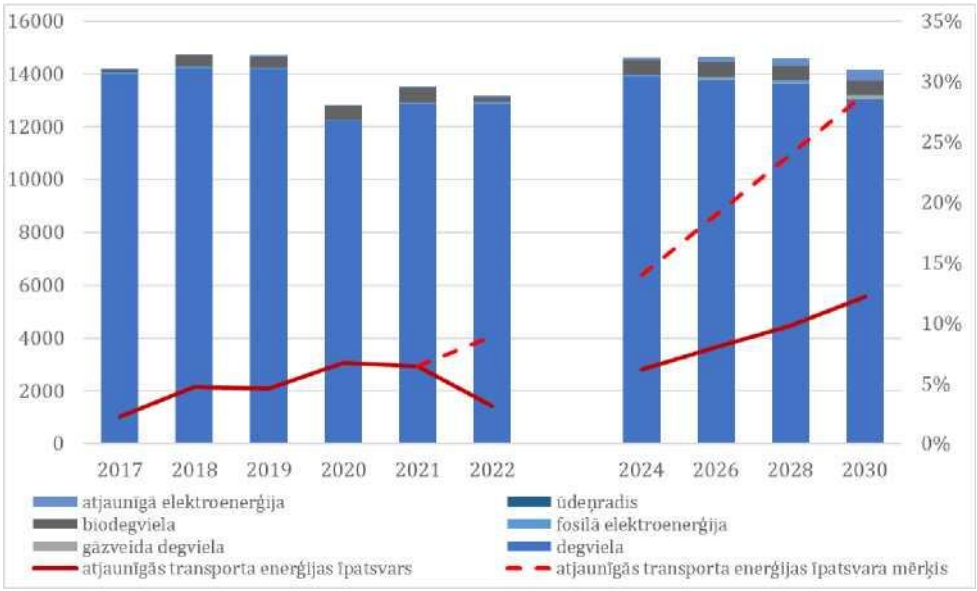


Figure 4. Transport energy (left-hand scale, GWh), share of renewable transport energy and indicative share target (right-hand scale, %)[108]

Having regard to the fact that on 1 July 2022: — At 31.12.2023, the biofuels blending obligation was not mandatory (optional), the share of renewable transport energy in 2022 was only 3.1 % (6.4 % in 2021), but it could be minimal in 2023. At the same time, the share of advanced biofuels exceeded 2 % in 2021, thus already meeting the 2025 target. The GHG intensity reduction in 2021 (against the reference level), calculated in accordance with the version of Directive 2023/2413, could be around 1.1 % in 2021. In the latest Baseline scenario, the 2030 renewable transport energy share could reach 12.2%108109, directly through an increase in electricity and biomethane consumption and keeping biofuels in 2021 but reducing fossil fuel consumption.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2025	TARGET 2030
GHG emissions (kt**CO** 2eq)	3223,9	3137,1	—	2446,5 110
GHG intensity reduction in transport (%)	3,5	2,1	—	14,5
Share of AE in transport (%)	6,4	3,1	—	29
Share of advanced biofuels/biogas in transport (%)	2,3	0,9	1	5.5
Share of RFNBO in transport (%)	0	0	—	1
Share ofsustainable fuels in air transport (%)	0	0	2	5
Reduction of GHG intensity per vessel inm 111 (%)	0	0	2	6

108CSP, FEI
109Taking into account the multipliers set out in Directive 2018/2001 for different modes of transport energy
110Based on the Target Scenario
111Target applicable to vessels > 5000 tonnage

III Policies and measures to achieve the objectives

The measures to achieve the targets included in the target scenario will overall result in a reduction of GHG emissions in the period 2021-2030 of 777.4 kt CO_2 eq. (non-ETS GHG emissions) and an increase of 12.8 percentage points in the actual RES share and an increase of 24.4 percentage points in the share of RES applied to transport multipliers.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- enterta	sourc e
3.1.1.1	Modernise and green rail infrastructure, including under support programmes	retrofitting of existing electrified lines 245 km (13.7 % 2023) overhead line construction 45 km	SM	2029	434,45	434,45	RRF MFF PF
3.1.1.2	Ensure the purchase of new electric trains and new battery trains, including as part of support programmes	> 32 electric trainsets and electric locomotives purchased 9 battery electric trains	SM	2024	225,3 196,4	168,3 166,9	MFF VB
3.1.1.3	Develop upgraded, accessible rail passenger infrastructure	upgraded passenger infrastructure (88 passenger service facilities in total)	SM	2029	89,4	89,4	MFF PF
3.1.1.4	Promote the “transfer” of freight to rail	sustainable Urban Mobility Plan for Riga and Riga Functional Area Update National Policy Framework	SM Riga State City Government VARAM EM	2027	4,5	0	MFF VB
3.1.1.5	Greening Heavy Transport Programme	Programme adopted	MOF KEM	2027	0,15	0	VB
3.1.1.6	Increase the number of AE medium and heavy-duty vehiclesu[113]	300 (medium-duty AE vehicles) 100 (heavy-duty AE vehicles)	KEM EM POWER IN THE MOU	2030	50	0	HFF RRF JTF ECII MF PF
3.1.1.7	Increase zero-emission light passengers	20000 EV (light passengers)	KEM EM POWER IN THE MOU	2030	600	23,4	HFF RRF JTF ECII MF PF

[112] Currently and in the subsequent ‘Policy and measures to achieve the objectives’, the ‘investments’ sections shall include all necessary investments from the sources of financing listed in the table, including public and private investments, thus determining the total financing needed to implement the measure. The “marked” section includes the full amount of investment – public funding and private co-financing, as defined respectively in the conditions of the support programmes.

[113]Article 4(1) (a) of Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- enterta	sourc e
	number of vehiclesu[114]						
3.1.1.8	Assess the regulatory framework for compensation amounts paid to employees related to the charging of the employer's EV	Draft amendments	FM	2026	Within the existing budget		
3.1.1.9	Promote shifting commercial operations to a zero-emission fleet	15 % of all taxi and commercial transport the vehicle fleet is zero-emission vehicles.	SM KEM FOR COPPER EM Daugavpils, Jelgava, Jūrmalas, Liepāja, Rēzeknes, Riga, Ventspils	2030	Within the existing budget		
3.1.1.10	Increase the number of charging stations/points	development of a study for the location of recharging points 300 high power recharging points built	SM KEM	2030	37,76	37,76	MFF MF PF
3.1.1.11	Motivate the retirement of old vehicles	2 % of the light-duty vehicle fleet written off	SM KEM	2030	3,6	0	EKII
3.1.1.12	Increase the number of zero-emission micromobility tools	12000 micromobility tools	Municipalities of Kem LM EM	2030	15	0	SKF EKII VB PB PPPS
3.1.1.13	Develop micro-mobility infrastructure	300 CCTV cameras installed at 300 bicycle parking sites built up with at least 300 km of built infrastructure	Municipalities of MoS	2030	415	61	RRF MFF
3.1.1.14	Build slow recharging points, including e-bikes, at multi-apartment blocks, car parks	At least 3000 recharging points	Municipalities of SM KEM	2030	3	0	PB PF VB SKF
3.1.1.15	Impose an obligation to use RES	in public towns and cities	KEM SM	2024	Within the existing budget		

[114]Article 4(1)(b)(ii) and (iii) and (c) of Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- enterta	sourc e
	public and municipal transport used in towns and cities	30 % of transport energy used in vehicles shall be RES and/or electricity (annual) from 2030 onwards	Cities of copper				
3.1.1.16	Electrifying public transport and improving public transport electricity infrastructure	265 new electric buses and their infrastructure 100 new trolleybuses 24 new low-floor trams (ZGT) reconstruction of 5depo, 2nd trolleybus park, 3 rd tramway depot (adaptation to LGT) and 1st trolleybus park	Municipalities of MoU VARAM	2027	416.5	221,4	MFF PB
3.1.1.17	Provide support to municipalities for the purchase or refurbishment of public transport vehicles for	50 buses	Municipalities of SM KEM	2030	12.5	0	PB VB
3.1.1.18	Construct publicly accessible refuelling points for liquefied or compressed methane	at least 5 refuelling points for liquefied methane	Municipalities of SM KEM	2030	10	0	VB PB PF
3.1.1.19	Provide support to municipalities for the purchase of buses for hydrogen public transport vehicles	Additional 20 buses	Municipalities of SM KEM	2030	7	0	PB VB
3.1.1.20	Install publicly accessible hydrogen refuelling points	2 filling stations	Municipalities of SM KEM	2030	10	0	VB PB PF
3.1.1.21	Create state-subsidised public transport (PS) on demand for residents of rural areas	For at least half of the transport on demand, it is possible to opt for state-subsidised zero-emission public transport	SM VARAM ATD KEM	2030	ND	0	VB SKF
3.1.1.22	Expand the rail (tram) and bus network of Pieriga	Extension of the bus route network (additional 12 buses) Tramway to Ziepniekkala (prospective extension to the new Máarpes railway station)	SM ATD Riga State City Government	2030	122	0	VB PB
3.1.1.23	Optimise the public transport system	15 % increase in the number of public transport passengers	SM STP ATD	2025	Within the existing budget		

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- enterta	sourc e
3.1.1.24	Develop a common electronic system for purchasing public transport tickets	Introduction of a system for the purchase of a single electronic ticket	ATD SM	2026	ND	0	PB
3.1.1.25	Create mobility points	8 mobility points: 6 Riga, 1 Saulkrastos, 1 in Carnikava.	SM Riga State City Municipality of Pieriga Municipalitie	2030	188,3	0	RRF MFF VB PB PF
3.1.1.26	Introduce ZEZ	from 2030 onwards, ZEZ or fee entry zones have been established in Riga from the 2030 zone in municipalities with exceedances of air quality standards	Vam KEM SM Riga City Municipality of State City Municipalitie s	2030	ND	0	RRF HFF PB
3.1.1.27	Develop transit corridors and connections to them by diverting intensive traffic flows away from residential areas	At least 100 km of infrastructure built	Municipalitie s of MoS	2030	100	0	PB VB
3.1.1.28	Riga Municipality to implement a “car-free day” at least once a year		Varam KEM City Municipality of Riga	2030	1	0	PB
3.1.1.29	Impose a 2030 and annual GHG intensity reduction obligation on fuel suppliers	GHG emission intensity 2030 – 15 %	KEM	2024	Within the existing budget		
3.1.1.30	Assess the possibility of capping the extent to which the cost of the “new ETS” can be included in the fuel end-use price	Normative framework	KEM FM	2027	Within the existing budget		
3.1.1.31	Assess the conditions for the application of AN to a blend of fuels and biofuels	Normative framework	FM KEM	2027	Within the existing budget		
3.1.1.32	Introduce the polluter/user pays principle in taxation	Normative framework	SM FM	2026	Within the existing budget		
3.1.1.33	Assess the harmonisation and simplification of the payment system for recharging points	Assessment Normative framework	MOF KEM	2025	Within the existing budget		
3.1.1.34	Impose an obligation on the use of RES in the national department	transport used in national large vehicles	KEM VK	2025	Within the existing budget		

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million what you need? source
	transport used	30 % energy from 2030 onwards is RES and/or electricity (annual)			
3.1.1.35	Introduce traffic comfort measures, in particular in Riga centre and micro-district centres, creating 30 km/h zones	the zones have been introduced in Riga's historical centre – 2030.	municipality of National Cities	2035	Within the existing budget

3.1.1.1. As part of the**modernisation and greening of the railway infrastructure**, the gradual replacement of the 3.3 kV system of existing electrified lines to a 25 kV system, the extension of the electrified zone and the improvement of zero-emission railway infrastructure in the node of Riga and the Riga-Tukums line are being implemented. The action thus provides for the upgrading of existing electrified lines. Zasulauk-Bolderāja Zemitaan-Slok (100 km); existing electrified lines modernisation on the Riga-Jelgava lines, Riga-Krustpils (145) km) and zero-emission rail infrastructure development (45 km).

3.1.1.2. As part of the**purchase of new electric trains and new battery trains**, it is planned to focus on the continuation of the purchase process of electric train compositions and the purchase of battery electric trains, so that it is not necessary to electrify all those sections of the railway that are not currently electrified, but at the same time not to use diesel trains.

3.1.1.3. As part of the development of upgraded and accessible rail passenger infrastructure, it is envisaged to improve or make greater use of the existing rail network, e.g. by creating new or refurbishing/moving historic stops close to areas of public interest, such as schools, hospitals, mobility points, to improve convenience and accessibility for users of the rail network. As part of the action, measures are to be taken in 88 passenger service facilities.

3.1.1.4. As part of the**promotion of the "transfer" of freight to rail**, it is necessary to promote (1) the transfer of postal services to rail transport, ensuring that postal items are transported by passenger trains to cities with railway stations, so that mail to regions from Riga would only be transported by road within the region; (2) modal shift of freight to rail, while developing multimodal freight points, thereby facilitating the delivery of freight to ports by rail by transshipment on railway wagons at modal points outside urban areas; (3) the transfer of waste to rail, where possible, reducing the number of landfills and reducing the long-distance transport of waste. For the implementation of the action, a Sustainable Urban Mobility Plan for the City of Riga and the functional territory of Riga will be drawn up; the national policy framework to promote the growth of intermodal transport, in particular combined transport, will be reviewed in TAP2027, which should assess the possibility of developing a balanced funding model to bridge the competitiveness gap between road and rail transport.

3.1.1.5. As part of the**Greening Heavy Transport programme**, forecasts will be made for the development of heavy fleets, possible changes in tax policy – restrictions and possible support measures to facilitate the transition to higher euro classes and zero-emission vehicles.

3.1.1.6. As part of the**increase in the number of medium and heavy-duty vehicles**, it is planned to implement support programmes specifically targeting the purchase of medium and heavy-duty vehicles for economic operators, direct and intermediate public authorities, including municipalities (including their institutions and capital companies) for their vehicles, both for the replacement of vehicles and for the conversion of existing internal combustion vehicles to use

electricity, methane or hydrogen or 100 % biofuels. As part of its activity, the banking sector should also ensure that high-quality funding is received for the purchase of zero-emission vehicles (under 5 years of age) by economic operators (commercial transport).

3.1.1.7. As part of the**increase in the number of zero-emission vehicles**, it is planned to continue the implementation of existing and new support programmes for the purchase of zero-emission vehicles for private individuals, economic operators, direct and intermediate administrations, including municipalities (including their institutions and limited liability companies). As part of the action, ALTUM must establish a programme of loans or guarantees for the purchase of zero-emission cars by private individuals, such as guarantee programmes to address down-payment problems or retail credit guarantees (EM), while the banking sector should also ensure that high-quality funding is received for the purchase of zero-emission vehicles (up to 5 years old) by private individuals. It is also necessary, in the context of the action, to assess the necessary amendments to the requirements for the licensing of commercial transport by imposing an obligation on the use of EVs and the conditions of national regulations and support programmes to incentivise the retirement of old vehicles.

3.1.1.8. An assessment of the regulatory framework for the compensation amounts paid to the employee in relation to the charging of EV by the employer in the context of the activity of charging EVs requires an assessment of the existing regulatory framework, setting out certain criteria to encourage the employer to include EVs in its own vehicle fleet.

3.1.1.9. In order to facilitate the transition to a zero-emission fleet for commercial purposes, it is necessary to extend the infrastructure of the charging network, to assess whether other licensing requirements should be imposed on such transport from 2030 onwards, or such conditions should be phased in, so that the set performance indicator is achieved by 2030. It is also necessary to assess possible amendments to the legislation in order to achieve better environmental impact conditions in the taxi sector.

3.1.1.10. As part of the**increase in the number of charging stations/points**, it is planned to continue to implement existing and implement new support programmes to increase the number of recharging stations in the national network of charging stations (up to 300 high-power recharging points on the TEN-T road network), to support the installation of charging stations, including high-power charging stations for commercial operators with larger fleets or logistics companies, municipalities for their vehicles or for public transport.

3.1.1.11. As part of the**retirement of old vehicles**, amendments to the regulatory framework need to be developed and a support programme should be put in place to provide incentives, write off old cars and de-registration of unused cars, instead encouraging the use of public transport, cycling, shared vehicles or other mobility solutions.

3.1.1.12. As part of the**increase in the number of zero-emission micro-mobility tools**, new support programmes are planned, focusing on the most socially vulnerable citizens and households (especially in regions), people with functional mobility or reduced mobility (in 2024 Latvia has a total of around 40 thousand people with reduced mobility) with financial support for e-bikes (the market price now starting at ~EUR 500) electric mopeds (the market price now starting at ~EUR 500); the purchase of electric carriages for disabled persons (currently starting at ~EUR 1000), electric passenger transport chairs (the market price now starting at ~EUR 1500), etc., in order to reduce the need for these citizens to use fuel-powered vehicles and reduce the impact of fuel costs on these citizens, while reducing their social isolation, as well as by providing support for the use of public transport or by creating specifically accessible (through pre-registration) transport and routes.

3.1.1.13. The development of micro-mobility infrastructure concerns pedestrian infrastructure, cycling infrastructure and infrastructure for various micromobility tools, including bike parking improvements. As part of the action, (1) planning and integration of new interurban or extra-

urban cycle paths and Riga/Pierga connections into existing cycle routes must be implemented; (2) construction of micromobility housings in the centre of Riga, near municipal authorities, near public facilities and residential yards (including public transport stops, increasing the competitiveness of public transport and the mobility of citizens; at educational establishments; (3) placing video surveillance cameras on existing and newly created bicycle spaces. It is also necessary to specify building codes (EM and MoU) as part of the action, making it compulsory for new roads or municipalities to build pedestrian infrastructure in or near residential areas when building new roads or refurbishment of existing roads and, where technically feasible and cost-effective, separate cycling infrastructure.

3.1.1.14. As part of the**construction activity of slow recharging points, including e-bikes, in multi-apartment blocks, the installation of recharging points in street infrastructure or in multi-apartment buildings is planned to be implemented in parking areas**. Similarly, for the implementation of legislation (EM and VARAM) and building codes (EM) or local government binding regulations (VARAM, BUSINE) the following obligations for the construction of recharging points in112 a building, inline with the deadlines set out in EU law: (1) in new constructions of public buildings as well as in renovated public buildings – 1 recharging point for every 5 parking spaces, (2) new constructions of office buildings – 1 recharging point per 2 parking spaces, (3) new multi-apartment buildings as well as renovated multi-apartment buildings – equip 50 % of the parking spaces with the necessary electricity infrastructure for recharging points, (4) in existing public buildings – at least 1 recharging point per 10 parking spaces, (5) in all refuelling stations. The implementation of the action will include an obligation to install recharging points in street lighting infrastructure as part of the refurbishment/upgrading of that infrastructure and to install recharging points in urban electricity infrastructure, such as transformer stations.

3.1.1.15. The activity of**determining the obligation to use RES for public and municipal transport** used in the national cities will cover public transport vehicles and municipal vehicles (central space, subordination, subordination or supervisory authorities and municipal capital companies) and will require the use of at least 30 % renewable transport energy or electricity in those vehicles.

3.1.1.17. The activity of providing support to municipalities for the purchase or conversion of public transport vehicles for methane will apply to municipalities where methane refuelling stations are being built for the purchase of public transport vehicles for methane. Under the action, it is planned to implement support programmes specifically targeting the purchase of public transport vehicles for economic operators, direct and intermediate public authorities, including municipalities (including their institutions and capital companies) for their public transport, both for the replacement of public transport vehicles and for the conversion of existing internal combustion vehicles. The action will require the use of biomethane only in these vehicles.

3.1.1.18. As part of the**construction of publicly accessible refuelling points for liquefied or compressed methane**, it is planned to provide support for the installation of refuelling points for liquefied methane for maritime transport or freight transport, with the obligation to ensure the availability of liquefied biomethane at the supported refuelling points to a certain extent. Activities

it is necessary to lay down requirements that promote the use of compressed methane, in particular compressed biomethane, in freight transport, for example by setting requirements for trucks using urban infrastructure, delivery vehicles, waste management vehicles or public transport. No funding has been earmarked for this action for the period 2021 onwards.

3.1.1.19. For the purchase of H2 public transport, the activity of providing support to municipalities in which H2 refuelling stations are being built will cover those municipalities and their neighbouring municipalities or planning regions where hydrogen refuelling stations are

112pursuant to Directive 2024/1275

being built for the purchase of hydrogen public transport vehicles. Under the action, it is planned to implement support programmes specifically targeting the purchase of public transport vehicles for economic operators, direct and intermediate public authorities, including municipalities (including their institutions and capital companies) for their public transport, both for the replacement of public transport vehicles and for the conversion of existing internal combustion vehicles.

3.1.1.20. As part of the operation of the installation of publicly accessible hydrogen refuelling points, it is planned to provide support for the installation of refuelling points of renewable fuels of non-biological origin, such as renewable hydrogen, up to[116] levels set out in EU legislation, adapted as far as possible to the flow of vehicles, in particular freight transport, and to the location of plants for the production of renewable electricity.

3.1.1.21. In the context of the operation of**State-subsidised public transport (EV) on demand, residents of rural** areas need to assess all regional bus routes with low ticket revenue coverage over the eligible costs in order to determine the compatibility of these routes with the nature of the public transport service compared to the social services provided by the municipalities. The action should enable at least half of the transport on demand to opt for zero-emission public transport subsidised by the State.

3.1.1.22. The**extension of the road transport network of Pieriga (tram) and bus routes** will apply to areas where no railway is available. The action will ensure the extension of the bus route network (extension of routes): (1) Saurian and Upeslei direction (additional 3 buses needed); (2) New garage (additional 4 buses required); (3) The direction of Kekava and pigeons (additional 5 buses required). The action will also set up a tram route to Ziepniekkala (prospective extension to the new Mārupe Railway Station) with the following activities: (1) adaptation of existing tram infrastructure to Telts Street; (2) construction of new tram infrastructure (Ziepniekkaln line) from existing tram infrastructure at Telts iela to Ozolciema Street 2.7 km; (3) construction of a tram house at the place of destination; (4) Acquisition of 14 LGTs to operate the new route.

3.1.1.23. As part of the**public transport system optimisation** action, further development of routes will be carried out, promoting multimodality with priority for rail use, including the identification of public transport routes running in parallel with trains and buses and the assessment of the need for bus routes. The following works should also be carried out to prioritise public transport on the traffic infrastructure: (1) adaptation of traffic light facilities to ensure the priority of public passenger transport; (2) measures to improve the speed of public transport to reduce travelling time.

3.1.1.24. As part of the action to**improve the development of a common electronic system for public transport tickets**, the following actions will be implemented: (1) the introduction of ticket sales on numbered seats in use by the end of 2026; (2) connection of terminal ticketing systems to the Uniform ticket warehouse information system by the end of 2024 as part of the pilot project and in full mode by the end of 2025; (3) Integration of cash registers with Uniform

[116] Regulation 2023/1804

ticket warehouse information system; (4) Design and implementation of a single ticketing product in the Riga metropolitan area as part of a pilot project.

3.1.1.25. As part**of the action on the creation of mobility points**, the following actions will be implemented: (1) carrying out a detailed assessment of the current and future needs of the inhabitants and municipalities around each mobility point, as well as analysing the potential for future development of each area; (2) making the areas adjacent to railway stations available to municipalities for the development of related areas in accordance with development plans,*including the creation of*parking and bicycle parking facilities, charging points for EVs and electric brokes in the areas of mobility points and the environmental improvement of mobility points; (3) environmental development of mobility points; (4) modernisation of passenger platforms in line with the universal design standard for passenger infrastructure developed by VAS Latvijas dzelzceļš, improving the usability of passenger infrastructure as one of the preconditions for increased use of public transport.

3.1.1.26. The obligation to introduce**ZEZ and/or fee zones** is extended to Riga by 2030, but from 2030 such zones are to be established in national cities where air quality standards for air pollutant emissions from the transport sector are observed. As part of the action, the ZEZ model, including the conditions for setting entry restrictions, must be developed; a detailed and general survey of citizens and public consultations and the necessary changes to the regulatory framework should be carried out and a new regulation should be drawn up for the division of zones into emission classes and the classification of vehicles into emission classes linked to the ZEZ classification. It should also be assessed whether entry permits in low emission zones could be established by means of special vehicle stickers, which could be marked as part of increased roadworthiness testing, or whether such checks are to be carried out by means of vehicle surveillance (cameras). The full implementation of the action requires the development of control systems and the introduction of infringement procedures, also taking into account vehicles registered abroad, the establishment of specific entry charges to urban centres in the context of ZEZ.

3.1.1.30. The limitation to the extent to which the final fuel price can include in the final fuel price as part of the cost assessment exercise of the 'new ETS' should provide that the cost of purchasing emission allowances to cover the CO_2 emissions of fuel suppliers can only be included in the price of transport energy to a certain extent, rather than passing those costs entirely on the final consumers, i.e. fully passed on to the final consumers in transport energy prices. This will also encourage new ETS operators (fuel suppliers) to take GHG emission reduction measures to reduce the cost of purchasing emission allowances.

3.1.1.31. The condition of excise duty on biofuels and biomethane, promoting the use of biofuels and biomethane as part of the evaluation activity, should assess the possibility of setting the lowest possible AN rate (117minimum rates in Directive 2003/96/EK) for biomethane and biofuels, i.e. both biofuels marketed separately and biofuels blended with fossil fuels, thus changing the system where AN is applied to the entire amount of fuel, regardless of the amount of biofuel blended. If the conditions for AN were revised as part of the review of the application of the conditions, the AN for biofuels would be set as low as possible and the AN for fossil fuels would be increased without any negative budgetary impact. Thus, if the total volume is 100 litres, of which 20 litres are biofuels, the fossil fuel excise duty is levied only on 80 l and 20 l on biofuel AN (minimum rates in Directive 2003/96/EC).

3.1.1.32. The introduction of the 'polluter/user pays' principle in tax policy is necessary to reduce the use of emission-intensive vehicles in Latvia and to promote the use of public transport. This action also includes the evaluation of the TENs, as well as the introduction of a first

117Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity

registration tax to reduce the use of emission-intensive vehicles in Latvia, as well as to promote the use of public transport. The implementation of the action under the RCN requires an evaluation of the TEN and its rates and the introduction of the first registration tax, assessing the possibility of defining the TENs in the light of: (1) the amount of energy CO_2 and air pollutant emissions and engine volume used in vehicles; (2) auto-conversion operations carried out, resulting in CO_2 and reductions in air pollutant emissions (according to established benchmarks for CO_2 reductions achieved and CO_2 emission levels achieved by conversion activities). Similarly, the revision of TEN rates should assess the possibility of increasing the TEN rate for light-duty vehicles and vehicles with high engine capacity. As regards the first registration tax on light vehicles, it is necessary to assess the amount of light-duty vehicles that are registered for the first time in Latvia and whose CO_2 emissions are higher than the EU average CO_2 emissions figure for new vehicles, based on the engine volume and the gross mass and age of the light vehicle. It is also necessary to assess the possibility that the revenues from the application of this tax are used to support the acquisition of sustainable zero-emission vehicles and to develop its infrastructure.

3.1.1.33. As part of the**evaluation of the harmonisation and simplification of the payment system for recharging points**, it is necessary to assess the possibility of harmonising the payment system in order to simplify it and make it more accessible to the public, to assess the possibility of removing the need to use each individual payment system or mobile applications of the operator of recharging points, to assess the possibility of identifying a single operator who is the holder of the payment system and which ensures payment for the use of a recharging point.

3.1.1.34. The activities**for determining the obligation to use RES for transport used** in the national department will cover vehicles of the State (central agency, state subordinate, subordinate or supervisory authority and public limited liability companies) and, as part of this activity, an obligation to use at least 30 % renewable transport energy or electricity in those vehicles.

3.1.2. Agriculture

Base Scenario I

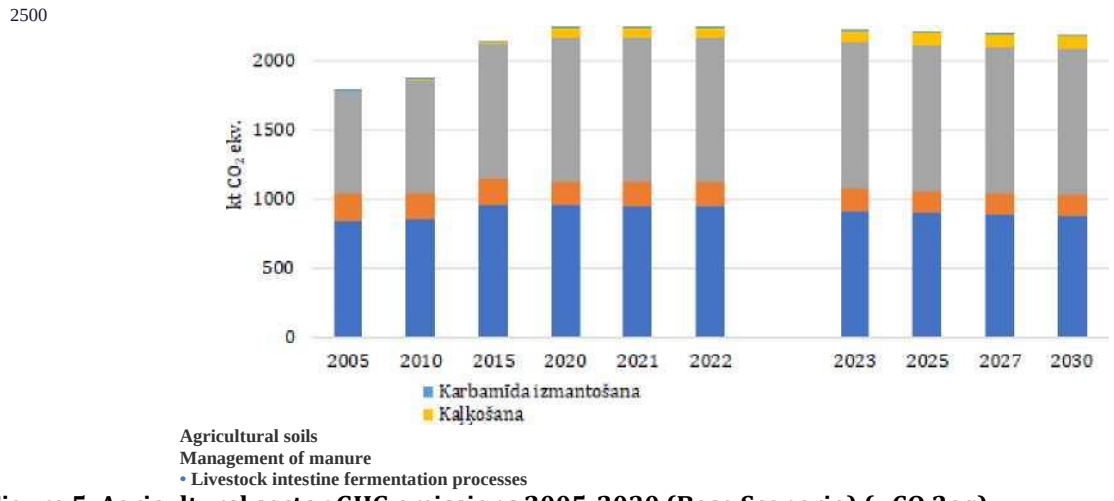


Figure 5. Agricultural sector GHG emissions 2005-2030 (Base Scenario) (kt CO 2eq)

In 2022, the total GHG emissions of the agricultural sector have increased by 26 % from[118] in 2005 to 2030. In the Baseline scenario, GHG emissions from agriculture increase by 23 % compared to 2005. Management of agricultural soils remains the main source of emissions from the agricultural sector in all years.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
GHG emissions (kt**CO** 2eq)	2252,96	2253,83	2176,33[119]

III Policies and measures to achieve the objectives

The measures to achieve the targets included in the target scenario will overall result in a reduction of GHG emissions in the period 2021-2030 of 76.6 kt CO_2 eq.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in	Execution deadline	Investment (million) (EUR)		
					need	mark-them	source
3.1.2.1	Promoting organic dairy farming (low emission dairy farming)	2027 33352 dairy cows	MOA	2030	13,5	13,5	CAP
3.1.2.2	Promote and support the use of precision inorganic nitrogen fertilisers	237 thousand ha	MOA	2030	25,2	25,2	CAP
3.1.2.3	Promote and support the direct and accurate application of organic	21 thousands of ha	MOA	2030			
3.1.2.4	Promote the inclusion of beans and peas in crop rotation for nitrogen	47 thousand.ha	MOA	2030	34,3	34,3	CAP
3.1.2.5	Promote the planning of feed rations	2027 31408 dairy cows	MOA	2030	33,8	33,8	CAP
3.1.2.6	Contribute to improving the quality of feed	2027 20300 dairy cows					
3.1.2.7.	Conversion and restoration of drainage systems on agricultural land, km/ha	Length of reconstructed drainage systems on arable land – 1 390 km, affected area on arable land – 200 482 ha	MOA	2030	36,0	36,0	CAP
3.1.2.8.	Promote the inclusion of legumes in crop rotation for nitrogen sequestration	Thousand.ha	MOA	2030	37,1	37,1	CAP

3.1.2.1. The main objective of**promoting organic dairy farming (low emission dairy farming)** is to facilitate the conversion of small and medium-sized conventional dairy farms to the organic farming system, thus contributing to low-emission dairy farming. Organic dairy farming significantly reduces CH_4 emissions from intestinal fermentation and manure

[118] GHG inventory 2024
[119] Based on the Target Scenario

management.

3.1.2.2. The main objective of**promoting and supporting the use of precision inorganic nitrogen fertilisers** is to expand the area of arable land and increase the number of farms using precision technologies in the planning of fertilisation schemes and fertiliser application to reduce the amount of inorganic nitrogen fertilisers used and emissions of nitrogenous compounds.

3.1.2.3. The objective of**promoting and supporting the direct and accurate application of organic fertilisers to the soil** is the expansion of arable land where organic fertilisers are directly incorporated into the soil, thus ensuring the reduction of nitrogen losses.

3.1.2.4. Encouraging the inclusion of beans and peas in crop rotation for nitrogen sequestration aims to expand the area of arable land and to increase the number of farms where leguminous crops are included in the crop rotation, thereby contributing to the removal of atmospheric nitrogen and the reduction of the use of inorganic nitrogen fertilisers by reducing N_2O emissions.

3.1.2.5. The objective of**promoting the planning** of rations is to increase the number of dairy cows whose rough protein has been reduced in their diet, while maintaining the productivity of dairy cows.

3.1.2.6. The aim of**improving the quality of feed** is to increase the number of cows fed with high digestible energy (with a particular focus on hay, hay silage, grass silage).

3.1.2.7. The**conversion and restoration of drainage systems on agricultural land** will be implemented in existing drainage systems to remove excess water from agricultural land. An adjusted moisture regime can contribute to a better use of plant nutrients, thus reducing nitrogen losses and indirect emissions.

3.1.2.8. The aim of**promoting the inclusion of legumes in crop rotation for nitrogen sequestration** is to expand the area of arable land and to increase the number of farms where legume corrugs are included in the crop rotation, which results in nitrogen sequestration in the soil and contributes to an increase in organic matter and the improvement of other soil characteristics.

The agricultural sector is closely linked to the LULUCF sector in the context of the assessment of GHG emissions from the treatment of organic soils, thus also with the LULUCF sector Target Scenario, so that measures related to the management of organic soils are assessed in the agricultural sector.

3.1.3. Production and use of electricity and heat

IA GHG emissions

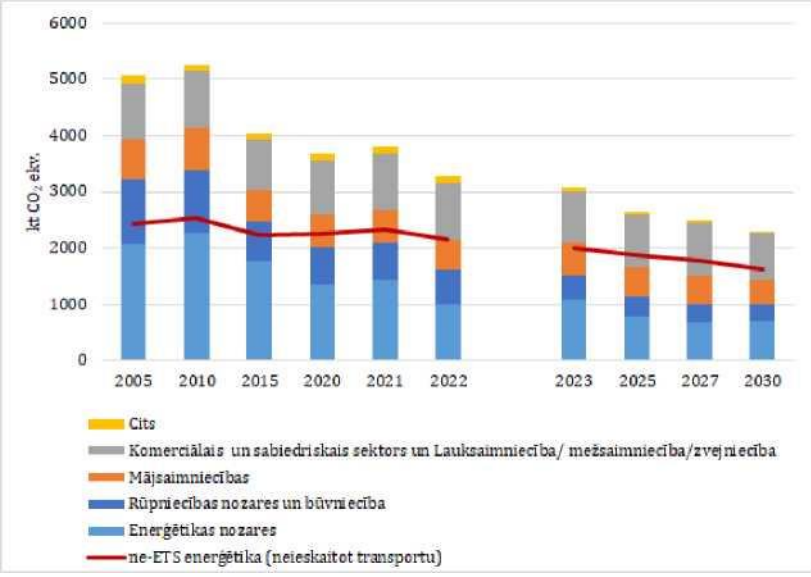


Figure 6. Energy sector GHG emissions 2005-2030 (Base Scenario) (kt CO 2eq)

Total GHG emissions from non-ETS energy have decreased by 12 %[120] in 2005 compared to 2005. In the period to 2030, GHG emissions from non-ETS energy decrease by 33 % compared to 2 005 in the Baseline Scenario.

IB Production and import of electricity

HES- SES solid and gaseous biomass natural gas solid and liquid fossil fuels ~ share of renewable electricity – target share of renewable electricity share and target of renewable electricity produced

Figure 7. Electricity volume (left-hand scale, GWh), share of renewable electricity (right-hand scale, %) [121]

In recent years, the volume of electricity production in Latvia has fluctuated, with the decrease in production recorded in 2022 followed by a significant increase in 2023, driven by favourable hydrological conditions, an increase in energy development in thermal power plants, and an increase in solar and wind energy development. At the same time, imports have also decreased and there has been a decrease in consumption, mainly due to the self-sufficiency of users with self-generated electricity and not recorded in official statistics. In view of the significant decrease in electricity consumption, mainly in periods with high solar

[120] 2024 GHG inventory
[121] CSP, FEI

in terms of intensity, it can be concluded that the estimated unrecorded amount of electricity produced is approximately equivalent to the recorded reduction in electricity consumption.

In 2022, the share of renewable electricity (EUROSTAT method) was 53.5 %, although the share of renewable electricity produced in Latvia in 2022 and 2023 is above 70%122. The share of renewable electricity remains dominated by hydropower, while solar energy increased more than 5 times in 2022, reaching 5.3 GWh123, where installed CER capacity could reach 700-800 MW at the end of 2024. In the baseline scenario, the share of renewable electricity in total electricity consumption will reach 88.1 % (EUROSTAT method), with 80 % of electricity produced and imported in the form of HES, VES and CERs in the base scenario, and taking into account private investments and measures implemented by economic operators and residents, while a significant reduction in electricity imports is projected in the Basel Scenario, thus improving the self-sufficiency of Latvia's electricity.

IC Heat generationa 124 125

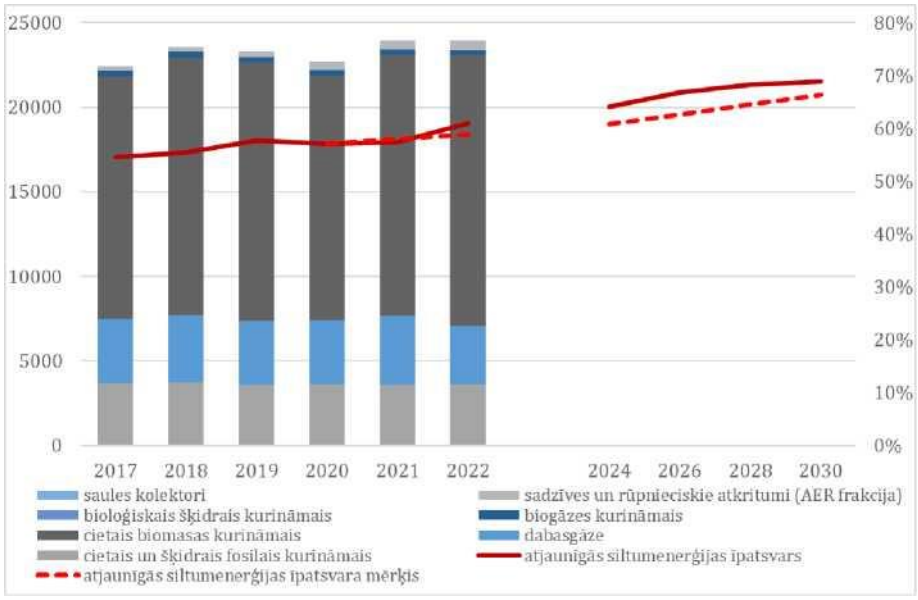


Figure 8. Thermal energy (left-hand scale, GWh), share of renewable heat (right-hand scale, %) [125]

In heating, the share of HE in 2022 exceeds 60 %, mainly through solid biomass fuels and energy efficiency measures in both the public sector and the CSA in view of the energy availability and price crisis, in particular for natural gas and solid biomass fuels. For the above reasons, the 2022 CSA decreased natural gas consumption and significantly increased diesel consumption, while overall the heat (and fuel) production and consumption of heat (and fuel) was reduced, citizens and MSW operators in response to the significant increase in energy prices. In the baseline scenario, the share of renewable heat in total heating will increase by around 10 percentage points in both MSW and total heat in the period up to 2030, reaching 67 % and 69 % respectively. The share of RE in the Baseline scenario will increase to 73 % in industry, while the share of HE in buildings will reach 61.6 % in 2030.

122CSP, TSO
123TSO
124Includes the use of fuels in CSA, CAA and the use of fuels in final energy consumption, which are counted as heat generation according to the EUROSTAT methodology
125CSP, FEI

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
GHG emissions (kt**CO** 2eq)	2318,88	2164,85	1593,75 126
Share of renewable electricity in final electricity consumption (%)	51,4	53.5	> 80
Share of renewable electricity in electricity produced for domestic consumption (%)	63,6	75,7	100
Share ofAE in heating andcooling 127 (%)	57,4	61,0	66,4
Share of AE in CSA and CAA (%)	56,6	63,9	73,9
Share of AE in buildings (%)	57,2	60,6	65
R & R share in industry and ICT sector (%)	58.5	63,2	73,1
Share of AE in agriculture, forestry and fisheries (%) 128	18	17,5	30

III Policies and measures to achieve the objectives

The measures included in the target scenario for electricity and heat generation and use activities as well as energy efficiency improvement actions (Chapters 3.2.1, 3.2.2 and 3.2.3) will lead to a reduction of non-ETS GHG emissions in the period 2021-2030 of 580 kt CO_2 eq and a total GHG emission reduction of 1 012.3 kt CO_2 eq. These measures will also ensure an increase in the share of RES in electricity by 48.6 percentage points and heat by 10.8 percentage points.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- entert	source
3.1.3.1	Implement the ELWIND project of the Latvian-Estonian offshore wind farm	Infrastructure provided for the installation of an additional capacity	EM	2035	750	750	CEF JIS PF VB
3.1.3.2	Ensure the development of new offshore wind farms in line with the Maritime Plan 2030	Infrastructure and assessment provided for the installation of at least 1 GW of additional capacity	KEM COPPER	20292040	700	0	CEF
3.1.3.3	Ensuring the development of UES on land by balancing national security, economic and	Additional installed capacity of at least 1,3-1.5 GW	EM KEM	2030	1200	0	VB PF
3.1.3.4	Clarify the general construction rules by defining the division of jurisdiction of the solar power plant, which will	normative framework	EM	2024	Within the existing budget		

126Based on the Target Scenario
127applying Article 23(1) and (2) of, and Annex 1a to, Directive 2018/2001
128covers the use of fuels in agricultural, forestry and fisheries vehicles and machinery

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- entert	source
	the construction process and the necessary documentation to be submitted to the building						
3.1.3.5	Improve the framework for the granting of building permits for the development of wind	normative framework	EM KEM POWER	2024	Within the existing budget		
3.1.3.6	Develop regulation and limit values for low-frequency sounds, vibrations, flashes, noise, etc. Effects typical of VES	normative framework	KEM	2026	Within the existing budget		
3.1.3.7	Implement a pilot project in large-capacity power plants for the implementation of electricity and/or thermal storage solutions	storage solutions have been implemented in 2 combustion plants with total installed capacity > 100 MW	KEM	2035	20	0	IF RRF PF
3.1.3.8.	Impose mandatory provision of storage or balancing solutions for non-permanent power generation plants with total capacity > 50 MW, including hydrogen production facilities	1) regulatory framework approved in 2026. 2) from 2030 onwards, all new installations 3) from 2040, all existing installations are equipped with storage or balancing solutions	KEM	2026	Within the existing budget		
3.1.3.9	Promote the use of electricity storage technologies by economic operators and individuals, including as part of support programmes	Up to 10 MW storage technologies installed	KEM TSOS	2030	20	0	RRF MFF
3.1.3.10	Impose a requirement on service providers to deploy renewable electricity generation technologies	Regulatory framework 2026	KEM	2025	Within the existing budget		
3.1.3.11	Ensure the expansion of AE's production capacity in CSAS and the upgrading of infrastructure	Capacity increase + 30 % Share of heat losses in Latvia & 10 % (heating)	Municipalities of Kem	2030	500	65	MFF EKII MF

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- entert	source
		seasonal) all CSAS meets the criteria for an effective CSAS					
3.1.3.12	Implement sufficiently extensive CSAS electrification	1) 2030 at least 100 MW 2) 2040 at least 200 MW	KEM COPPER	2030 2040	200	0	MFF EKII PF
3.1.3.13	Improve electricity transmission and distribution system infrastructure for CSAS electrification	Up to 10 CSAS has improved electricity infrastructure to strengthen connections	KEM TSO DSO	2030 2040	20	0	RRF MFF PF
3.1.3.14	Increase the production capacity of HEs and improve their energy efficiency for individual self-consumption	capacity increase by 30 % compared to 2017 volume	Kem MoEPRD financial institutions	2030	267	20,5	MFF EKII SKF
3.1.3.15	Increase the production capacity of HEs and improve their energy efficiency in industry and economic operators (including the municipality)	capacity increase by 30 % compared to 2017 volume	KEM EM	2030	300	266,4	HFF RRF JTF MF
3.1.3.16	Setting an installation-specific GHG emission reduction target	(1) In installations, GHG emissions in 2030 have been reduced by 40 % (as opposed to 2021) (2) the operation of the installations is fully decarbonised	KEM EM	20352040	Within the existing budget		
3.1.3.17	Obligation to develop climate-neutrality plans for high capacity installations	1) regulatory framework 2026 2) obligation 2040 and 2050	KEM EM	2026	Within the existing budget		
3.1.3.18	Impose an annual obligation of at least 3 % AE on natural gas traders	1) regulatory framework – 2026 2) obligation from 2030 onwards	KEM	20262030	Within the existing budget		
3.1.3.19	Promote the production of biomethane and its injection into the gas grid	(1) at least 7 new biomethane production facilities are installed (2) for the natural gas distribution or transmission	KEM TSOS	20302035	26,5	26,5	MFF PF

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- entert	source
		at least 7 biomethane producers are connected (3) up to ~210 GWh of					
3.1.3.20	Restrictions on the installation of new fossil fuel installations	1) regulatory framework – 2026 2) conditions from 2028	Municipalities of Kem	20262028	Within the existing budget		
3.1.3.21	Setting progressive restrictions on the use of fossil fuels	1) regulatory framework – 2026 2) conditions from 2030; 2040; 2050	KEM	2050	Within the existing budget		
3.1.3.22	Assess the possibility of setting limits to which fuel suppliers may include the costs of the "new ETS" in the fuel price (applies to fuels not covered by the ETS)	1) regulatory framework – 2026 2) conditions from 2030 onwards	KEM	2026	Within the existing budget		
3.1.3.23	Update the regulatory framework and the methodology for calculating tariffs for thermal energy supply services	regulatory framework 2026	SPRK KEM	2026	Within the existing budget		
3.1.3.24	Express sustainability criteria as fuel quality indicators	Amendments made to the relevant legislation	KEM	2024	Within the existing budget		
3.1.3.25	Develop guidelines for the business case for CSA connection	Guidelines developed	KEM SPRK	2026	Within the existing budget		
3.1.3.26	Increase the use of biofuels and biomethane in agricultural production		KEM EM MOA	2030	4	0	MFF VB PF
3.1.3.27	Ensure the extraction of biogas/biomethane by operators of public urban water services, taking into account the assessment of potential	1) evaluation carried out – 2027 2) biogas production has been ensured according to potential (provisionally in 3 national cities)	KEM	2027 2030	10	0	MFF VB PF

3.1.3.1. The Latvian-Estonian offshore wind farm's ELWIND implementation activity includes activities such as leveraging CEF and PCI co-financing to build project development and

infrastructure; establish conditions and ensure that an area with established infrastructure is leased to a trader through auction/tendering procedures for the installation of equipment and electricity generation; participation in leveraging CEF co-financing and private financing for the installation of generating equipment. The action foresees the installation of 800-1 000 MW of new wind energy capacity.

3.1.3.2. The action to**ensure the development of new offshore wind farms** will be implemented in accordance with and in accordance with the Maritime Spatial Plan for the internal marine waters, territorial sea and exclusive economic zone waters of the Republic of Latvia until 2030'129, as 5 offshore wind farm exploration areas have been designated in the waters under Latvian jurisdiction, with a total area of 1 648.76 km 2 representing^{approximately} 6 % of Latvia's total marine area. Licence area applications have been received in all wind farm exploration areas with the exception of zone E2.

3.1.3.8. Non-volatile power generation plants will be subject to the obligation to provide storage or balancing solutions, including the activity of determining the hydrogen generating facility, will be extended to power generation plants, such as VES, CERs, HES, HES, to which installations are subject to this obligation, such as VES and CERs > 50 MW, and HES, if the reservoir does not allow regulation of their operating modes according to the market situation, an obligation to install storage facilities or facilities for the production of hydrogen or other facilities, where necessary, hydrogen transport130 financing is available under the IF, and the implementation of the obligation could be available under the RRF.

3.1.3.10. The requirement for certain service providers to implement renewable electricity generation technology activities will apply to service providers such as CSAS operators, waste management operators, water traders, electronic communications merchants and postal service operators for the full or partial self-supply of self-generated renewable electricity. As part of the implementation of the operation, conditions shall be laid down for the AE to be produced, as far as possible, using the resources available to the service provider, such as sewage sludge for the water management company, biodegradable waste, etc., in order to facilitate the efficient use of these already available resources and the reduced transport to other recycling sites where possible. A minimum threshold for electricity consumption from which the obligation starts to apply is established for the application of the obligation.

3.1.3.11. As part of the**expansion of HE production capacity and the upgrade of the CSA infrastructure and networks**, support would be provided to upgrade existing CSA AE production capacities (no support for fossil energy capacities) in order to improve the efficiency of capacities and to exploit the full potential of energy production; increasing renewable heat capacity focusing on zero-emission technologies or hybrid systems combining different HE production and/or zero-emission technologies; the installation of energy storage facilities by concentrating them in CSA installations with renewable heat generation facilities; the integration of waste heat (from industrial production facilities, data centres, waste water management operators) into the CSA infrastructure, the reconstruction of existing CSAS networks by reducing losses (in cities with thermal energy losses in networks above the Latvian average), as well as the full or partial transition of effective CSAS to low-temperature CSAS. Primary support should be given to "effective CSAsystem131" non-compliant CSAS or CSAS with the lowest RES ratio.

3.1.3.12. As part of CSAS's**sufficiently large-scale electrification** activity, based on assessments of the electrification options and potential of CSAS that will be carried out for the implementation of that measure, as well as on the availability of TSO/DSO capacities and the measures taken to upgrade and increase capacities, support would be provided to existing CSAS heat generation facilities, whose

129https://likumi.lv/ta/id/306969-par-juras-planojumu-latvijas-republikas-ieksejiem-juras-udeniem-teritorialajai-jurai-un-Exclusive-economic-zones
130https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund_en
131Article 26(1) of Directive 2023/1791

capacity allows for a partial or full transition to electrification of heat generation, i.e. heat generation with high-power heat pumps, solar installations, electricity in combination with energy storage facilities (or separately or in combination with solid biomass fuels). In view of the need to reduce the use of solid biomass for energy production in the long term, but in particular for the period after 2030-2040, and to introduce the cascading principle in the timber chain, support should also be provided under the operation for the replacement of existing solid biomass combustion plants with a total thermal capacity > 7.5 MW to zero-emission technologies. This would lead to reduced GHG emissions, reduced emissions of air pollutants and improved air quality. The action will increase the security of heating by promoting the diversification of the energy sources used, the measure will improve the safety and stability of the energy system by increasing sector integration and thus facilitating the involvement of the heating sector in the provision of balancing services, as well as the integration of volatile generation capacities (wind, solar power plants) into the electricity system, and will ensure or increase the demand for electricity within the energy efficiency framework of the overall economy, which could, inter alia, have a positive impact on electricity distribution and transmission system tariffs, as this system would be used as efficiently as possible.

3.1.3.13. Support for the**improvement, reinforcement or expansion of the electricity transmission and distribution system infrastructure** for the electrification of CSAS as part of its operation, based on assessments of the options and potential of CSAS electrification, would be provided to the TSOs or DSOs for the improvement, reinforcement or expansion of the electricity infrastructure to enable the electrification of CSAS to enable the connection and use of electricity or electricity technologies for heat generation. 10.05.2024 Kem, LSUA, ST and SPRK concluded a Memorandum of Cooperation on close cooperation in the field of electricity and heating, committing to the coordinated development of energy supply and heating infrastructure, testing and developing solutions to reduce the costs of energy supply and heating services, including attracting external financing for the necessary pilot projects.

3.1.3.14. Increasing HE production capacity and improving their energy efficiency for individual self-consumption are households, energy communities, etc., which produce and use HE mainly for their own consumption and not for the production or sale of energy. The action would support the installation of new HE generation facilities for heat and/or electricity production, focusing on zero-emission technologies or hybrid solutions (solar PV or solar collectors in combination with heat pumps, high-efficiency solid biomass installations in combination with heat pumps, solar PV in combination with electricity heating, etc.); the replacement of existing solid biomass fuel installations to zero-emission technologies or the development of their hybrid solutions; improving the energy efficiency or increasing the capacity of existing AE equipment. The action should also require the mandatory installation of solar energy installations for renovated multi-apartment buildings.

3.1.3.15. The activity of**increasing HE's production capacity and improving their energy efficiency in economic operators and municipalities** concerns production companies, service sector operators, agricultural holdings and municipalities (their authorities and capital companies). Within the framework of the action, support would be given to retrofitting existing HE capacities through the installation of more energy-efficient generation and production side-by-process facilities; the clean-up of industrial buildings and areas, including the replacement of internal and external engineering networks and engineering systems; installing new AE capacities with a focus on zero-emission technologies. The action should require that renovated industrial plants or buildings comply with nearly zero emissions conditions and that at least 50 % of the energy they use must be AE, as should the obligation to install solar energy in the construction of new commercial buildings (with certain capacity) and renovations.

3.1.3.16. The**GHG emission reduction obligation** applies to thermal and/or electricity generation installations with a total capacity of more than 100 MW (currently no more than 5 installations in Latvia) to ensure that "base capacity" is decarbonised. As part of the activity, a 2030 target is to be set to ensure that heat and/or electricity generation installations' operations in 2 040 are fully

decarbonised (excluding back-up and peak capacity facilities) up to at least 90 % of the emissions from installations in 2021, taking into account technological feasibility and cost-efficiency. Funding for economic operators for such activities is available132 under IF (for hydrogen installations or carbon capture installations) or other public or private funding.

3.1.3.17. The obligation to develop a climate-neutrality plan applies to operators of heat and power generation installations with a total capacity > 100 MW of all installations present in the plant that generate GHG emissions, where the obligation is for those operators to draw up a climate-neutrality plan with the aim of fully decarbonising electricity generation by 2040 and heat generation by 2050. Those plans must be submitted to the responsible ministry, which will assess and approve them.

3.1.3.18. An annual AE share obligation (addition) for natural gas will apply to natural gas traders supplying natural gas to buildings or CSAS, with an obligation to account for at least 3 % UE on an annual basis, where natural gas traders will be able to do so, for example, by means of biomethane or hydrogen that would be injected into the common natural gas network or would be supplied without a natural gas transmission or distribution system. This action will also be carried out by means of guarantees of origin for biomethane133if a natural gas transmission or distribution system is used, so that natural gas traders, such as biomethane, will be able to purchase from producers of biomethane in Latvia or from producers of biomethane from other EU Member States with which Latvia is linked through a single natural gas network. Similarly, natural gas traders will be able to comply with that obligation with RFNBOs once it is able to feed into the grid. According to CSP data, in 2022, 2.3 PJ biogas was produced in Latvia, which corresponds to 8 % of the 2022 total natural gas consumption (29 PJ) and 18 % of final natural gas consumption (12.5 PJ) in 2021, biogas consumption corresponded to around 12 % of Latvia's total natural gas consumption. According to the Commission's assessment and industry assessment, Latvia has the potential to replace up to 15 % of natural gas consumption bybiomethane134.

3.1.3.19. As part of the action to**promote the production of biomethane and its input into the gas network**, it is planned to implement a support programme for the purchase and installation of biomethane production facilities, the establishment of the necessary infrastructure for the use of biomethane, including the construction or upgrade of the connection of biomethane to the upstream natural gas transmission and distribution system, the purchase of biomethane-powered vehicles for the transport of biomethane.

3.1.3.20. Restrictions on the installation of new fossil fuel installations include a ban on the installation of new only fossil fuel combustion plants in individual heating and a ban on the installation of new only solid or liquid fossil fuel combustion plants and a restriction on the installation of new natural gas combustion plants, unless the owner of the plant intends to burn biomethane produced in Latvia at least at the rate set out in the regulations on the sale and use of natural gas, or where those plants are used as back-up or accidental installations for the provision of "peak capacity" in MS and industrial plants, without prejudice to the renovation or upgrading of existing installations. Where new natural gas combustion is installed in CSA or industrial plants, they should only be allowed to be installed in combination with carbon capture installations or in combination with zero-emission technologies, such as natural gas combustion plants in combination with heat pumps or in combination with deep renovation of an industrial building and plant. At the same time, that limit on the supply of individual heating should be set in building codes as a precondition for the granting of a building permit, i.e. no building permit is issued for the construction of new buildings if they provide a fossil fuel heating installation as a heating solution. Similarly, the rules governing the sale and use of natural gas should set a minimum volume of biomethane produced in Latvia, expressed as % of the total

132 https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund_en
Article 117(3) of the133 Energy Law
134https://energy.ec.europa.eu/document/download/27d9ec6a-3ee8-45da-ba70-ea6f578e3f53_en?filename=Biomethane_fiche_LV_web.pdf

amount of natural gas to be combusted in the installation, for which no restrictions apply to the building in question.

3.1.3.21. The phase-out of fossil fuels would apply to electricity and heat generation installations as well as industrial production facilities and the services sector, but would not apply to domestic appliances. As part of the action, the necessary legislative amendments will be made to establish that (1) from 2030 onwards, the use of solid fossil fuels, such as coal, peat, peat briquettes, shale, is prohibited in the installations mentioned in Latvia; (2) from 2040 onwards, the use of liquid fossil fuels, such as LPG, diesel, heating oil and other liquid fossil fuels, shall be prohibited in those installations; (3) The use of natural gas fuels in those installations shall be prohibited from 2050 onwards, except in installations with a capacity > 100 MW, which are necessary to provide "base capacity", and except for installations where compensatory emission reduction measures are in place. As part of the action, limitations could be imposed on emergency fuels to be used only in the event of a declaration of an energy crisis, and that exception would apply only to the lowest $CO2_{emissions}$ of liquid fossil fuels, where such fuels would be used from national oil reserves.

3.1.3.22. The restriction on the extent to which fuel suppliers may include the costs of the 'new ETS' in the fuel price shall be limited to the fuel suppliers and/or the volume of fuels not covered by the ETS. This measure applies to fuel suppliers that supply fuel to final consumers but do not supply fuels to regulated thermal energy suppliers. The action will stipulate that the cost of purchasing emission allowances to cover the CO_2 emissions of fuel suppliers can only be included in the fuel price to a certain extent and not fully pass on these costs to final consumers, i.e. fully passed on to the final consumers. This will also encourage new ETS operators (fuel suppliers) to take GHG emission reduction measures to reduce the cost of purchasing emission allowances.

3.1.3.23. As part of the**regulatory framework and the updating of the methodology for calculating the thermal energy supply services tariff**, it is necessary to make the necessary amendments to the regulatory framework laying down the conditions for the approval of tariffs and to revise and adapt the tariff methodology for thermal energy services by assessing those items which may or may not be taken into account in the tariffs for the supply of thermal energy and the conditions to be applied in those tariffs. The action should also set limits on the inclusion of the cost of purchasing emission allowances in the heating services tariff for both installations included in the ETS and installations receiving fuel from fuel suppliers included in the 'new ETS'. As a result, CSAS operators will not pass on all the costs of the 'new ETS' to final consumers but will bear part of the costs, and thus CSAS operators will also be encouraged and interested in implementing emission reduction measures in their operations.

3.1.3.24. The expression of sustainability criteria as fuel quality indicators, the activity determines sustainability and GHG emissions saving criteria as forest biomass feedstocks that are binding for combustion plants with a total rated thermal input above 7.5 MW. Within the framework of the activity, it is stipulated that biomass fuels which do not comply with these quality parameters may not be used in combustion plants of a given capacity, and that the use of forest biomass that does not meet the quality parameters has administrative responsibility within the framework of the Law on Administrative Liability.

3.1.3.26. As part**of the activity of using biofuels and biomethane in agricultural production**, consideration should be given to the possibility of imposing an obligation on the use of biofuels and biomethane in agricultural production, for example by imposing a biofuels blending obligation on agricultural vehicles and machinery. The action should also provide for a support programme for the installation of biomethane production facilities on farms where biogas or biomethane production is not yet taking place.

3.1.3.27. Within the framework of the activity of**biogas/biomethane mining services** in public urban water operators, an assessment of the potential to start the extraction of biomethane by operators of water management services in major national towns dealing with the management of

waste water or sewerage water is foreseen. According to the assessment of the potential, provide support or impose an obligation to start the extraction of biogas and/or biomethane in those water service operators, thereby increasing the volume of biomethane produced in Latvia to replace natural gas in both transport and electricity/heat production processes. As part of the action, it is necessary to ensure that biogas extraction and/or biomethane production is provisionally carried out in a total of at least 3 cities of the country.

3.1.4. Waste and wastewater management

Base Scenario I

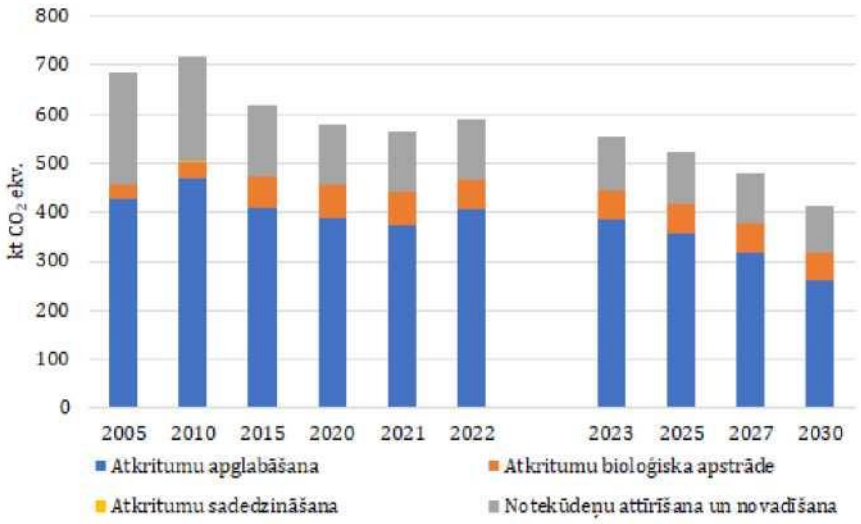


Figure 9. GHG emissions from the waste and wastewater management sector (Base Scenario) (kt CO 2eq)

In 2022, total GHG emissions from the waste and wastewater management sector have decreased by 14% compared to 2005135. Under the Basel scenario, GHG emissions from the waste and wastewater management sector will decrease by 40 % by 2030 compared to 2005. Disposal remains the main source of emissions in the waste and wastewater management sector in all years.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
GHG emissions (kt$_{CO}$ 2eq)	567,10	588,61	409,04[136]

III Policies and measures to achieve the objectives

The measures to achieve the targets included in the target scenario will overall result in a reduction of non-ETS GHG emissions in the period 2021-2030 of 158.1 kt CO_2 eq.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
					need	- entertainment	source
3.1.4.1	Increase recycling of biodegradable waste	In the 'Getleki' landfill – 100 000 t/g At the Kieles landfill – 21000 T/g Daibe landfill – 30000 T/g In the 'Cinci' landfill – 20000 T/g In the Janriai landfill – 16500	Plant operators	2024			PF MFF
3.1.4.2	Public awareness-raising and capacity-building measures	Public information and capacity building measures have been implemented: a) population reached at least 20000 b) persons who have changed their behaviour or habits as a result of the project, 10000	Kem Companies for municipal NGOs	2028	0,543	0,543	MFF
3.1.4.3	Pilot projects in regional landfills to improve waste sorting efficiency	a) Reduction to 77 % of unsorted waste deposited in the regional "Blue Vad" landfill b) Increase of 5 932 t/g (c) sorted plastic packaging volume for further recycling of RDF recyclable materials in the regional "Dzile Vada" landfill site of 467 t/g	KEM 'Vidusdaugavas SPAAO' SIA	2028	0,152	0,512	MFF PF

[136] Based on the Target Scenario

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million EUR) need	- entertainment	source
		Regional Daibe has increased waste treatment capacity by at least 400 t/g. Total amount of recycled secondary raw materials improved	KEM SIA ZAAO	2028	0,08	0,08	MFF
3.1.4.4	Additional framework for the management of decentralised collecting systems (DCS), its implementation, including stronger	Reduction in the number of CRS users in cities and villages, corresponding decrease in GHG emissions from CDS	Municipalities of Kem	2027-2030	Within the existing budget		
3.1.4.5	Development and start of monitoring conditions for GHG emissions in major waste water treatment plants	GHG emissions monitoring started in at least 21 waste water treatment plants	Kem water-farm businesses	2030			VB PF
3.1.4.6	Improvement of the operation of waste water treatment plants	Improvement of the functioning of WWTPs with CE> 10000 to increase waste water treatment capacity and efficiency	Municipal water-holding enterprises of Kem VARAM	2029	51,56 27,76	51,56 27,76	MFF PF
3.1.4.7	Implementation of the Sewage Sludge Management Plan 2024-2027	The plan provides for the collection, accounting, analysis, processing and use of all sewage sludge produced in Latvia as effectively as possible (soil improvement, biogas production). Uncontrolled sludge storage, risks of leakage, uncontrolled GHG emissions.	Municipal water-holding enterprises of Kem MoA	2027	24,5	24,5	MFF
3.1.4.8	Implementation and development of a separate collection system for textiles	Reduced textile waste 1 800 t/year or 7.5 % of total textile waste	Kem SIA Eco Baltia Environment	2028	0,134	0,134	MFF
3.1.4.9	Prohibit the entry of waste for recovery	1) appropriate regulatory framework 2026 2) the ban enters into force in 2030	KEM	2030	Within the existing budget		

3.1.4.1. Increase the recycling of biodegradable waste in line with the National Waste Management Plan 2021-2028 Action Axis 2 'Measures to develop polygonal infrastructure', measure 2.6.1 is planned to bring into operation bio-waste treatment facilities by 2024:

125 000 t/year for the Getliņš landfill; 21 000 t/year for the Kieles landfill; In the Daibe landfill, 30 000 t/year; In the 'Cinci' landfill – 20 000 t/year; In the 'Janvari' landfill – 16 500 t/year in the Brakis Poli – 19 000 t/year. Recycling of bio-waste in recycling facilities reduces the amount of waste disposed of, which reduces methane emissions from waste disposal.

3.1.4.2. Public awareness-raising and capacity-building measures in line with the National Waste Management Plan 2021. — Action Axis 3 'Promoting public awareness of waste management issues, environmental education and participation', 3.1 'Extending information and education measures for waste producers so that waste producers are interested in waste prevention and separate collection. Support for measures motivating waste producers to engage in waste prevention, separate collection of waste (including single-use plastic products)". The population reached at least – 20000, as well as those who have changed their behaviour or habits as a result of the campaign – 10000.

3.1.4.3. Pilot projects in regional landfills to improve waste sorting efficiency. Reduction to 77 % of unsorted waste deposited in the regional "Blue Vad" landfill; An increase of 5 932 t/year of RDF for recycling of recyclable materials in the regional "Glue Vada" landfill; sorted plastic packaging volume for further recycling at the regional landfill "Dzilis Vada" of 467 t/year; The regional Daibe landfill has increased waste treatment capacity by at least 400 t/year. The overall amount of recycled secondary raw materials has been improved.

3.1.4.4. Additional regulation decentralised collecting system (DCS) management, its implementation, including stronger monitoring of the SCS. Reduction in the number of CRSusers in cities and villages, corresponding decrease in GHG emissions from CRS. Ensuring stricter requirements and their implementation by the DKS will not only encourage owners to manage these systems properly, but will also, in some cases, serve as a basis for the decision to connect to the centralised collecting networks, which will ensure that the waste water will end up in well-managed waste water treatment plants. Thus, stricter requirements for the management of CRSs will lead to a reduction in the number of CRSs and potentially lower GHG emissions.

3.1.4.5. Development and start of monitoring conditions for GHG emissions in major waste water treatment plants. Monitoring of GHG emissions in at least 21 waste water treatment plants has started. The measure will provide information on current emissions and enable data to be compared and monitored at a later stage (or lack of progress).

3.1.4.6. Improvement of the operation of**waste water treatment plants. Improvement of the functioning of**WWTPs with CE> 10000 to increase waste water treatment capacity and efficiency. Increasing the operational quality and capacity of waste water treatment plants will manage more waste water and ensure better quality of treated waste water discharged into the environment. WWTPs will increase their capacity to accept and treat the waste water from households who have decided to opt out of the DKS and to connect to centralised systems.

3.1.4.7. Sewage Sludge Management Plan 2024. — Implementation in 2027 involves the collection, accounting, analysis, processing and use of all sewage sludge produced in Latvia in the most efficient way (soil improvement, biogas production). Uncontrolled sludge storage, risks of leakage, uncontrolled GHG emissions.

3.1.4.8. Implementation and improvement of a separate collection system for textiles aimed at reducing textile waste 1 800 t/year, or 7.5 % of total textile waste.

3.1.4.9. As part of the enforcement of a ban on the import of waste, it will be prohibited to import municipal or industrial waste from other EU Member States for disposal and/or recovery for the extraction of heat or electricity, without prejudice to industrial production facilities, thereby ensuring that there is no disposal in Latvia of waste generated in other countries, which could jeopardise the disposal of waste produced in Latvia, taking into account the capacity of Latvian landfills, and could increase the amount of GHG emissions from energy production in Latvia and reduce Latvia's energy independence from imported energy sources.

3.1.5. RPPI sector

Base Scenario I

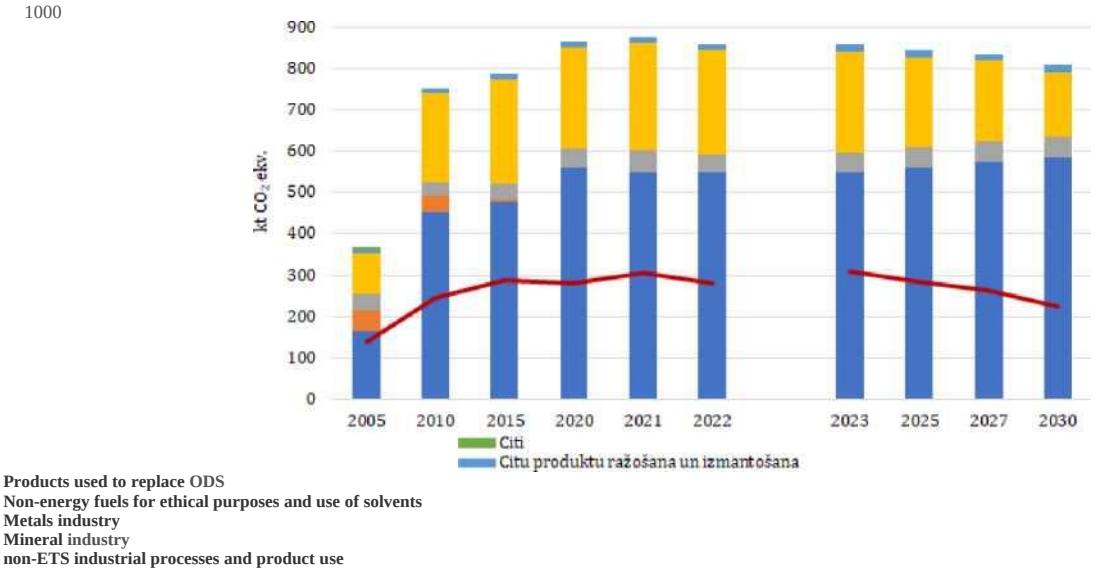


Figure 10. GHG emissions of the RPPI sector 2005-2030 (Base Scenario) (kt CO 2eq)

Non-ETS 2022 total GHG emissions in the RPPI sector have increased by 101 %[137] compared to 2005. In the period to 2030, GHG emissions in the non-ETS RPPI sector will increase by 59 % compared to 2 005 in the Baseline Scenario. Products used to replace ozone depleting substances remain the main emission source of the non-ETS RPPI sector in all years.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
GHG emissions non-ETS (kt**CO** 2eq)	304,13	280,49	203,39[138]

III Policies and measures to achieve the objectives

The measures to achieve the targets included in the target scenario will overall result in a reduction of non-ETS GHG emissions in the period 2021-2030 of 100.74 kt CO_2 eq.

[137] GHG inventory 2024
[138] Based on the Target Scenario

measure code	Action to be taken to implement the measures	Effective indicator	Institution involved in performance	Execution deadline	Investments (million EUR)		
					need	entertainment	sources
3.1.5.1	Setting an installation-specific GHG emission reduction target	1) obligation set in 2027 2) the installations are decarbonised in 2040.	KEM EM	2040	Within the existing budget		
3.1.5.2	Support large investment projects for the development of new green products and jobs	A large investment support programme has been implemented, with an increase in exports of at least 120 million. EUR 300 new jobs created for promotion	EM	from 2025	282,6	282,6	VB PF
3.1.5.3	Develop a programme for the development of exportable forest-processing plants	regulatory framework developed	MOA LIAA	2025	within the existing budget		
3.1.5.4	Provide information and consultation to the public on greenhouse gas reduction, including F-gases	Public outreach activities (information campaigns on social networks, infographics, etc.): — population reached > 10 thousand. — improved > 5 thousand citizens' understanding of F-gases as a significant part of GHG reduction	KEM	2030	0,06	0,06	VB (EKII)
3.1.5.5	Provision of targeted information to the F-gas industry	Training on the most up-to-date alternatives to F-gases, safety requirements and energy efficiency	KEM LVĢMC	2030	0,05	0,05	VB

3.1.5.6	Strengthening the capacity of public authorities to carry out F-gas monitoring and control tasks	For supervisory authorities involved in the implementation of the requirements of the Capacity Building Training	Kem LVĢMC VVD CRPC Health Inspectorate, VID	2030	0,05	0,05	VB

3.1.5.1. The**GHG emission reduction obligation** applies to operators of large industrial process GHG emission generating installations (currently 1-2) in order to ensure that emissions from industrial production operators which, due to the nature of their production, cannot reduce industrial process or energy emissions, are nevertheless neutralised. As part of the activity, it is necessary to set a target that installations' activities in 2 040 are decarbonised to at least 90 % of emissions from installations in 2021, taking into account technological feasibility and cost-efficiency. Funding for economic operators for such activities is available139 under IF (for hydrogen installations or carbon capture installations) or other funding.

3.1.5.2. Support for the development of new green products and jobs is targeted at large 'green' investment projects – medium-sized and large economic operators for the development of green products and jobs. Under the action, the planned results are higher value added (turnover or increase in exports) of new products in units of energy consumption, and eligible costs under the programme for tangible and intangible investments, including replacement of equipment to RES technologies.

3.1.5.3. The programme for the development of exportable wood-processing plants aims to process hardwood and softwood into durable wood products, including to promote the development of biorefinery, thereby adding value to the products produced.

3.1.5.4. Providing information and consultation to the public on the reduction of greenhouse gases, including F-gases, aims to inform the public about the updated regulatory framework for F-gases. Information measures on restrictions and prohibitions on the use of F-gases, covering both the use of certain F-gases and pre-charged equipment for which a prohibition on placing on the market is planned. Information activities will also highlight the role of F-gases as an important part of GHG in the context of global warming potential.

3.1.5.5. The**provision of targeted information to the F-gas industry** relates to the organisation of training for the F-gas industry dealing with F-gases. Training topics include the most up-to-date F-gas alternatives, safety requirements and energy efficiency.

3.1.5.6. Strengthening the capacity of public authorities involves strengthening the capacity of the supervisory authorities involved in the implementation of the requirements of the Training Regulation: the Customs Board of the State Revenue Service, the Health Inspectorate, the Consumer Rights Protection Centre, the State Environmental Service. The training will include refreshing knowledge of the F-gas Regulation and informing about the latest developments in this field (information provided by the EC, bans in force, etc.).

3.1.6. LULUCF sector

Base Scenario I

139 https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund_en

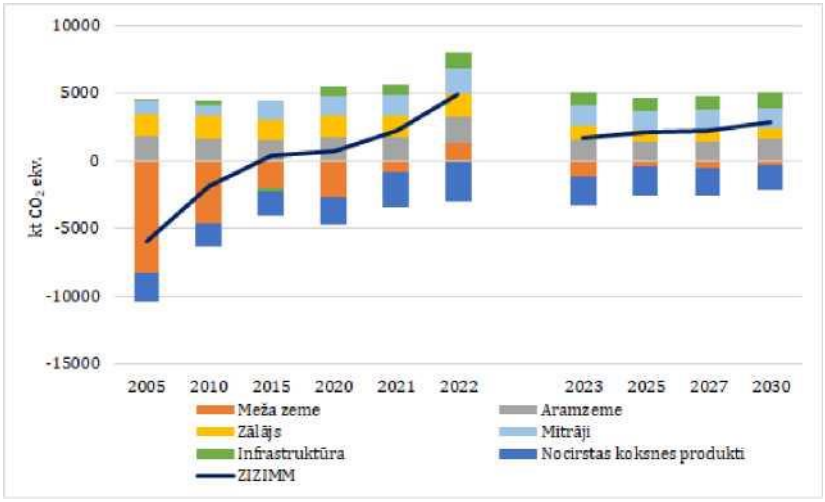


Figure 11. GHG emissions from the LULUCF sector 2005-2030 (Base Scenario) (kt CO 2eq)

Net GHG emissions from the LULUCF sector in 2022 were 4 944.16 kt CO 2_{eq}. (emissions), 1990- 12 390.09 kt CO 2_{eq}. (attachment). Net GHG (removal) has decreased by 139.9%140. The conversion of forest land into building (roads and other infrastructure) as well as the return of afforested land to agricultural production through conversion to arable land and grassland, and the trend of increasing peat extraction in recent years and the transformation of the target market, stopping fuel production and increasing agricultural peat extraction, play a significant role in increasing GHG emissions. These trends, when combined with GHG emissions from the remaining land-use categories of the LULUCF sector, have resulted in the overall reporting of net GHG emissions in the LULUCF sector over a number of years (2014, 2015, 2020-2022). The increase in net GHG emissions in the LULUCF sector in 2022 compared to 2021 is mainly explained by the decrease in $CO2_{removals}$ in the forest land category due to an increase in logging due to the Russian aggression in Ukraine, disruptions of wood supply chains and wood market shocks. Already in 2023, the volume of harvesting returned to pre-war levels, pointing to a rapid market stabilisation.

Under the Baseline scenario, Latvia will not achieve the 2030 target for the LULUCF sector of net GHG emissions of the LULUCF sector projected at 3 294.60 kt CO 2 eq. in_{2030}. This is due to GHG emissions from organic soils in cropland, grassland and wetlands and a $reduction_{in}$ CO2 removals from forest land.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
Balance of GHG emissions and $CO2_{removals}$ (kt CO**2** eq.)	2201,7	4944,2	—644 141

III Policies and measures to achieve the objectives (indicative)

The measures to achieve the targets included in the target scenario will overall result in a reduction of GHG emissions in the period 2021-2030 of 4 638 kt_{CO} 2 eq.

140 2024 GHG inventory: https://videscentrs.lvgmc.lv/lapas/zinojums-par-klimatu
141Based on the GHG inventory submitted in 2024, the target would be -2 214.77 kt CO 2_{eq}. The final target for 2030 will be determined in accordance with the 2032 GHG inventory.

measure code	Action to be taken to implement the action	Performance indicator (thousand ha)	Institution involved in enforcemen	Executi on deadlin	Investments (million EUR)		
					need	- entertai	source
3.1.6.1	Application of mineral fertilisers in dry matter and	21	MOA	2030	7	0	PF
3.1.6.2	Soil improvement in peatlands using wood ash	21,8	MOA	2030	3	0	PF
3.1.6.3	Restoration of rewetted forest habitats in agricultural organic soils	40	MOA	2030	259	0	OSS
3.1.6.4.	Targeted afforestation of organic soils on agricultural land	40	MOA	2030	99	0	PF MFF
3.1.6.5.	Targeted afforestation of developed peat fields, including restoration of rewetted forest habitats that are typical of Latvia	6	MOA	2030	15	0	PF
3.1.6.6	Targeted afforestation of less valuable agricultural land	75	MOA	2030	186	0	OSS MFF
3.1.6.7	Wet Hydrological Improvement	80	MOA	2030	120	0	PF
3.1.6.8	Woodland strip plantations	22	MOA	2030	38	0	OSS MFF
3.1.6.9	Short rotation coppice	15	MOA	2030	41	0	PF
3.1.6.10	Groups of trees on pasture	150	MOA	2030	37	0	OSS
3.1.6.11	Construction of wood-based chemical processing/wood fibre plant	—	economic operators	2029	700	0	PF
3.1.6.12	Replacement of non-productive stands	10	MOA	2030	24	0	OSS MFF
3.1.6.13	Use of biochar on arable lands	126	MOA	2030	322	0	OSS
3.1.6.14.	Establishment of a particle board plant	—	economic operators	2028	200	0	PF
3.1.6.15	Increase in the area of nursery trees	82	MOA, LVM	2030	17	0	LVM
3.1.7.16.	Targeted increase of restored forest areas	15	MOA, LVM	2030	22	0	LVM

The target scenario is designed in line with biodiversity conservation objectives. **3.1.6.1 Application of mineral fertilisers in dry matter and outdoors.** Spreading fertilisers (ammonium nitrate, urea or complex nitrogen-phosphorus fertilisers with a phosphorus content of up to 50 % nitrogen) improves forest growth and productivity by providing additional $CO2_{sequestration}$ in all carbon pools. Soil conditioning can be repeated every 7-10 years if tree canopy cover provides sufficient growth space in addition to growth. The use of mineral fertilisers in the forest increases N_2O emissions from soil, but these emissions are much lower than removals resulting from the additional increase in stock. As a result of the implementation of these measures, the consumption of additional nitrogen fertilisers will not exceed 5 % of the amount of nitrogen fertiliser currently used in agriculture.

3.1.6.1. Soil improvement in peatlands using wood ash. The use of wood ashes to improve forest soils leads to an increase in forest productivity, as the quantity of nutrients required by trees and plants increases (phosphorus, magnesium, potassium, etc.) and improves the soil structure and pH. The use of wood ash in soil conditioning may be repeated after each felling or more frequently if tree canopy cover provides sufficient growth space in addition to growth. The use of wood ash in Latvia is limited only by the availability of ash, which may affect the feasibility of this measure and the expected reduction of GHG emissions.

3.1.6.2. Restoration of forest habitats on agricultural land. The activity envisages that, within 10 years of 2024, agricultural land with organic soils of ~40 thousand ha ceases economic activity, afforestation through the planting of birch or black alkaline, and gradual closure of drainage systems after tree crown crowns, creating conditions specific to the mumbra. The afforestation and rewetting of organic soils must be carried out primarily in areas outside agricultural parcels and in less economically valuable grassland where moisture has been restored (deteriorated drainage systems) and where restoration of the drainage system is too expensive or technically and administratively difficult. The effect can be reduced by natural disturbances, but the effect to be achieved can be increased by up to five times the improvement of the moisture regime. The successful development of forest ecosystems may require temporary drainage systems to improve the moisture regime of young growers that are not yet in a position to effectively regulate the moisture regime. Another solution to improve the local humidity regime is the creation of deep (up to 30 cm deep ditches) and wrappers to remove excess water from shallow depressions and to prevent negative effects of artificial barriers on water run-off. The installation of temporary drainage systems, wraps and deep-sealings can significantly improve growth progress, but there is currently no experience in applying these solutions in Latvia. Afforestation is not planned in biologically valuable grasslands and special areas of conservation

By creating non-coniferous forests with naturally humid organic soils, this would result in a multiplication of biologically valuable habitats in the future, namely black-flaxed stickers. This is the expected long-term impact of the measure on biodiversity

3.1.6.3. Targeted afforestation of organic soils on agricultural land. Targeted afforestation of organic soils in agricultural land has the potential to achieve a significant reduction in GHG emissions. Natural disturbances can reduce the positive effect. The emission reduction effect is permanent and stems from wood products and substitution effects in the energy sector. Afforestation is not planned in biologically valuable grasslands and SACs.

The activity is also very important for solid biomass fuels produced from forest biomass grown and produced in Latvia to qualify as sustainable fuels, i.e. that such fuels meet the GHG emissions saving criteria inm,142as the calculation of GHG emissions savings carried out in 2 023 in accordance with Annex VI to Directive 2018/2001 does not show compliance with the criterion applicable from 1.1.2026.

3.1.6.4. Targeted afforestation of developed peat fields, including restoration of rewetted forest habitats that are typical of Latvia. Targeted afforestation of developed peat fields through the formation of III and IV-bond bogs, such as black-floor, white-white and birch groves, managed in accordance with routine practices in the management of forests with organic soils, contributes to a reduction in GHG emissions compared to developed peat fields with poorly developed herbaceous vegetation and shrub vegetation. The effect can be reduced by natural disturbances, but increased by up to five times the improvement of the moisture regime and the implementation of additional measures to improve the growth conditions. The measure is expected to have a long-term impact on biodiversity

3.1.6.5. Targeted afforestation of less valuable agricultural land. Promoting targeted

142Article 29(10) of Directive 2018/2001

afforestation of low-value agricultural land reduces emissions from agricultural land and eventually generates significant removals in afforested areas (the carbon impact of land use change may vary from case to case). Sustainable land management is also promoted and the area of forest habitats of biological value will increase in the long term. Targeted forest management can create new economic opportunities as well as improve the quality of life of the environment and society. Afforestation is not planned in biologically valuable grasslands and SACs. Low-quality grassland and arable land with mineral soils are suitable for afforestation, where afforestation is permitted under national and local municipal regulations. According to the results of various studies, afforestation is recommended for agricultural land with a value of less than 25-35.

3.1.6.6. Improvement of wet hydrological regime. This activity includes both the establishment of a ditches network and the improvement of the hydrological regime by means of a deep-sea network and wrappers. The improvement of the hydrological regime may also include the establishment of temporary drainage systems to improve the growing conditions after the main felling, but in Latvia there is a lack of experience in installing and managing such systems. In order to maintain and increase the hydrological improvement effect, care and primary felling must be carried out in a timely manner. Maintenance and restoration of drainage systems after the main felling is an important prerequisite, in addition to ensuring sequestration. An equivalent effect can be achieved through temporary drainage systems that improve moisture in young and attenuated groves. A second solution to improve the local humidity regime is the creation of deep (up to 30 cm deep ditches) and wrapping nets to remove excess water from shallow depressions and to prevent negative effects of artificial barriers on water run-off. The installation of temporary drainage systems, wafers and deep-sealings can significantly improve growth, but the effects of these solutions in Latvia have not yet been assessed.

3.1.6.7. Woody strips plantations. Plantations inwoody strips have been aged to reduce GHG emissions and ensure a relatively rapid removal of CO_2 when using fast growing tree species. At the same time, this action can lead to an increase in biomass resources, reduce nutrient run-off (ingress of phosphorus and nitrate into water bodies and shallow groundwater), as well as improve the microclimate and reduce damage caused by wind, including erosion of soil carbon losses. Similarly, the planting of woodland strips along drainage systems increases the diversity of nature by providing habitats and migratory routes for different animal species. In addition, the risk of beaver damage and the impact on the functionality of ditches should be assessed. In the case of woody plantations, technological lanes for maintenance may be provided. Short rotation coppices can be planted in the technological bands, which can be cut as necessary to access the ditch, while increasing the resistance of the bands to the wind and increasing the nutrient leaching effect.

3.1.6.8. Short rotation coppice. The creation and improvement of short rotation coppices contribute to increasing$_{CO2\ sequestration}$ and the activity has synergies with the energy sector, as it allows for a significant increase in the supply of solid biofuels. Sewage sludge can be used to fertilise short rotation coppice if there is no agricultural demand. For the time being, there is a lack of empirical justification for assessing the increase in soil carbon stock in plough plantations and therefore the data available in the scientific literature are used in the calculations. Short rotation plantations do not change the way the land is used – it remains agricultural land.

Carbon sequestration in soils, woody biomass, deadwood and wood products, as well as the substitution effect of biofuels through the use of wood instead of fossil fuels, are responsible for reducing GHG emissions. Taken together, these factors lead to a permanent and long-term positive carbon stock balance and GHG emission reductions in the LULUCF and energy sectors.

3.1.6.9. Groups of trees grazed. The measure provides that a group of trees of up to 0.1 ha is grown on a 150 000 ha pasture area. Increasing the number of trees increases the$_{sequestration}$ of CO 2 without changing the land use smartness. The measure is valuable not only from a climate perspective, but also from a biodiversity perspective, as its implementation may increase plant and animal diversity. In the same way, groups of trees provide more favourable conditions for grazing

the animals (improving the housing conditions on the pastures by creating areas with reduced temperatures, shading and cover).

3.1.6.10. Construction of a wood-based chemical processing/wood fibre plant. The production of lignin, man-made fibre and other wood products is weighted as Latvia currently exports most of the non-coniferous wood pulpwood, which is accounted for as carbon losses in living biomass in the GHG inventory. The development of local processing capacities for the use of pulpwood, lignin, wood fibre and biofuels would lead to a significant increase inCO_2 sequestration in wood products within several years of the start of production. It is planned to produce lignin and C5/C6 sugars in the first phase. The expected start-up time of 2029 is 310 thousand t (700 tkk $m^{3)}$ ^{per}year. Planned private investment: EUR 700 million. The GHG emission reduction included in the calculation is 314 kt CO_2. In addition, it is necessary to transfer the latest available knowledge on half-life of different wood-based chemical products and to improve the performance data collection system to account separately for lignin-based wood products and other compounds with a half-life longer than for paper.

3.1.6.11. Replacement**of non-productive stands.** The replacement of non-productive stands contributes to increasing $CO2_{sequestration}$ as well as promoting sustainable land management, increases the economic value of the area and provides opportunities for more high-quality wood material. Forest stands suitable for the implementation of the measure which have been found to be non-productive in accordance with Cabinet Regulation No 935 of 18 December 2012 laying down rules on tree felling in theforest143.

3.1.6.12. Use of biochar on arable land. The target scenario foresees the incorporation of biochar into arable lands at a dose of 10 t/ha from 2029. As an additional option, it is also possible to build a biocoal plant with an expected start-up time of 2029. The quantity of raw materials required (agricultural/forestry residues; organic waste; lower quality wood; tiles of plantations; paludicultures (snow, wolves)) amount to 2.4 million tonnes of dry material per year. Planned private investment: EUR 400 million. The plant's performance would be 600 thousand tonnes of biochar production per year.

3.1.6.13. Establishment of a particle**board plant. Increasing the production of glued**panels The Target Scenario envisages the construction of a new plant with a start-up time of 2028. The amount of wood required is $600^{thousand}$ m^3/year. Planned private investment: EUR 200 million. GHG emission reduction resulting from the measure as included in the calculation 2026. — 2030, is 773 kt CO_2 eq.

3.2. Energy efficiency

3.2.1. Energy consumption

Base Scenario I

Total primary energy consumption in 2022 was 51 690 GWh and final energy consumption 47 196 GWh 144. During the 2021 economic recovery period, Latvia's total energy consumption has increased compared to 2020, but decreased again in 2022 due to the energy saving measures put in place. As of 2017, final energy consumption has decreased in the transport, public and household sectors, while in industry and construction, final energy consumption has increased as a result of an increase in industrial production and construction activities.

143https://likumi.lv/ta/id/253760

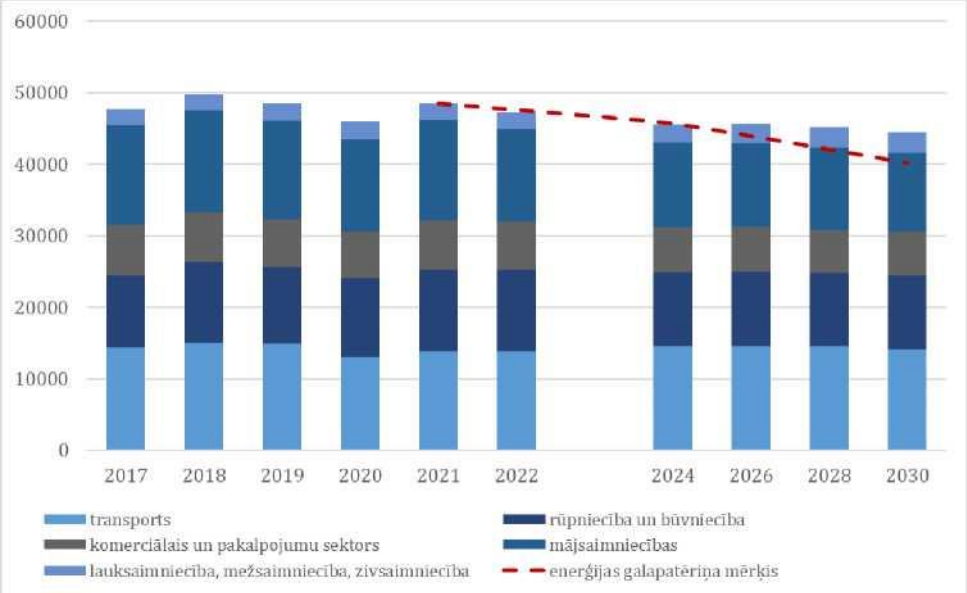


Figure 12. Final energy consumption and its target (GWh)[145]

Using the macroeconomic forecast and modelling assumptions, the calculated energy consumption projections foresee a total 2030 primary energy consumption of 47 856 GWh and final energy consumption of 44 468 GW h [146] in 2030. Final consumption projections predict that the main sectors of final energy consumption in 2030 will also be transport, households and industry and construction sectors, which will consume 31.8 %, 24.9 % and 23.1 % of total final energy consumption respectively. In the period 2021-2030, final energy consumption is projected to grow at 25.9 % in the agriculture, forestry and fisheries sectors and 4.6 % in transport, while the other sectors are projected to decrease their final energy consumption. There are no major changes in the composition of primary energy types, where both 2021 and 2 030 are dominated by biomass fuels, petroleum products and natural gas. The share of natural gas and electricity imports in total energy consumption will decrease, with wind electricity and oil products growing the largest share.

Objectives to be achieved

TARGET	FACT 2021[147]	FACT 2022[148]	TARGET 2030
Total energy consumption (GWh)	51948	50088	44717

[144] CSP
[145] CSP, FEI
[146] CSP
[147] EUROSTAT as defined in Directive 2023/1791
[148] EUROSTAT as defined in Directive 2023/1791

Final energy consumption (GWh) 47188 46081 40240

III Policies and measures to achieve the objectives

The measures included in the target scenario to achieve the targets as a whole in 2021-2030 will lead to a reduction in final energy consumption of 4.8 TWh and a reduction in energy consumption of 5.4 TWh, resulting in 319 GWh cumulative energy savings.

measure code	Action to be taken to implement the measures	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million BYN)		
					need	mark-them	sources
3.2.1.1	Obligation to implement energy management systems for certain economic operators and the public sector	Normative framework	KEM BVKB	2024	Within the existing budget		
3.2.1.2	Impose energy efficiency obligations on major energy consumers	Normative framework	KEM BVKB	2024	Within the existing budget		
3.2.1.3	Develop methodologies for collecting, processing and compiling statistics on HE production and use data and energy efficiency measures	Methodology developed to be used by the CSB as part of the production of statistics	KEM EM CSP BVKB	2025	1,2	1,2	VB
3.2.1.4	Update existing and develop a new methodology for calculating energy savings for measures taken in all sectors, including support programmes	Calculation methodology developed	KEM BNB Company Energy Auditors Researchers	2025	0,5	0	VB
3.2.1.5	An obligation to ensure that the energy efficiency performance of the data centre to be upgraded is not impaired during the modernisation process when modernising data	Normative framework	KEM EM	2025	Within the existing budget		
3.2.1.6	Fully implement the evaluation of the 'energy efficiency first' principle in the planning system	Normative framework	VK KEM	2025	Within the existing budget		
3.2.1.7	Continue the modernisation of natural gas meters and introduce smart meters for natural gas consumption metering	smart meters deployed > 80 % for natural gas used for heating	DSO	2030	5	0	PF
3.2.1.8	Develop the energy savings calculation tool resulting from the implementation of the project	Online tool developed	KEM EM	2026	0,7	0	VB

measure code	Action to be taken to implement the measures	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
					need	mark-them	sources
3.2.1.9	Economic operators' knowledge and awareness-raising activities on energy efficiency requirements, both as traders and producers and as professional users		KEM EM BVKB PTAC LDDK LTRK	2030	Within the existing budget		
3.2.1.10	Public information and education measures to encourage behavioural change towards energy efficiency, including by informing the public about the energy efficiency of products		EM CRPC	2030	0,04	0,04	ND
3.2.1.11	Enable schools to introduce climate, energy efficiency calculators and teach students to minimise these indicators by benchmarking when comparing school achievements		IRM KEM	2025	Within the existing budget		
3.2.1.12	Introduce at least 1 remote working day in State and local authorities	Normative framework	NK	2025	Within the existing budget		
3.2.1.13	Analyse additional contribution to the target in enforcement from		EM KEM	2025	Within the existing budget		
3.2.1.14	Impose an obligation to carry out an energy audit of enterprises on water companies defined	Normative framework	KEM	2025	Within the existing budget		

3.2.1.1. As part of the**obligation to implement an energy management system for certain economic operators and the public sector**, large energy consumers, EU ETS operators, waste water operators, the public sector will be obliged to implement a certified energy management system or a complementary environmental management system, or to carry out an energy audit and energy efficiency improvement measures for companies.

3.2.1.2. As part of the**action to impose obligations on major energy consumers**, companies with a total annual energy consumption of between 1.7 and 2.8 GWh will be obliged to carry out energy audits or introduce a certified energy management system or complement the environmental management system and implement energy efficiency improvement measures.

3.2.1.3. The development of methodologies for the collection, processing and compilation of statistical data is necessary to ensure that transport users are included as closely as possible in Latvia's energy mix.

the amount of electricity, the use of heat pumps, the use of solar technologies in private households

and economic operators, and the development of detailed indicators for the intensity of energy intensity in economic sectors, energy poverty indicators, data on energy efficiency measures taken by economic operators, and to enable the collection and compilation of R & I dimension data.

3.2.1.4. Updating the**methodology for calculating existing energy savings and developing a new methodology for measures taken in all sectors, including for support programmes** under the action, the methodology for calculating energy savings used in the period up to 2020 will be updated and new calculations will be developed for measures that were previously not estimated (new types of measures or measures previously implemented were not included in the calculation of energy savings). That methodology should also include calculation assumptions for support programmes implemented outside the scope of energy efficiency improvements in the post-2020 period.

3.2.1.5. Imposing obligations through the modernisation of data centres to ensure that the energy efficiency performance of the data centre to be upgraded is not impaired in the modernisation process, as part of the planned obligation for data centres to publish a certain amount of information on the operation of the data centre in order to improve the energy efficiency of data centres and move towards the delivery of waste heat to CSA operators. The obligations on the publication of information will not apply to data centres that operate critical infrastructure.

3.2.1.6. The introduction of an evaluation of the energy efficiency first principle in the development planning system is intended to establish an obligation in Latvian development planning system legislation and spatial development planning documents to assess, before planning and investment decisions are taken, whether the envisaged measures are, in whole or in part, interchangeable with cost-effective, technical, economic and environmentally sound alternative measures that equally effectively achieve the relevant objectives, as well as the obligation to include cost-effective alternatives measures to make energy demand and energy supply more efficient, in particular by means of end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy. The principle of "health in all policies" should be taken into account on an equal footing in energy efficiency.

3.2.1.7. The continuation of the modernisation of natural gas meters and the introduction of the metering of natural gas consumption of smart meters where the operation would apply to natural gas DSOs with appropriate economic efficiency justification, while investments in the national space for the implementation of this action should create a more favourable investment environment. In the context of that activity, the introduction of smart meters would concern the consumption of natural gas for heating, since the replacement of the existing natural gas meter for customers using natural gas only in gas stoves does not constitute economically reasonable and effective action[149]. By 2024, as part of the measures to modernise natural gas meters to ensure that readings of the remote meter can be read to the largest natural gas consumers, ~80 % of the natural gas consumed in Latvia is counted with smart meters. The Latvian natural gas DSO has previously planned to invest up to 5 million. EUR through the introduction of smart meters for natural gas consumption ~52 thousand natural gas consumers using natural gas for space heating.

3.2.1.13. In addition to the contribution to the achievement of the objective, it is necessary to analyse the results of all existing support programmes, including not energy efficiency improvement programmes, and to identify, where possible, unrecorded energy efficiency savings. It is also necessary, within the framework of the action, to make the necessary amendments to the regulatory framework so that in the future all support programmes are:

149 DSOS

the implementation conditions would include an obligation to establish an energy efficiency indicator and to report on the projects of the activities carried out.

3.2.1.14. Carrying out energy audits for enterprises defined water management companies are expected as part of the operation to carry out an energy audit of a company by 2032 for 21 waste water treatment plants with a load of 10 thousand population equivalents, which, among other things, assesses the potential to produce HEs themselves, while reducing GHG emissions.

3.2.2. Public sector

Base Scenario I

Directive 2023/1791 sets new targets for the renovation of public buildings, setting an annual target coverage of 3 % of the renovated floor area for all public buildings. At present, Latvia has not established definitions and coverage150of 'public establishments' and 'public buildings', so the target has not yet been expressed in specific areas. Latvia's long-term strategy for the renovation of buildings151 will bespecified in accordance with Directive 2024/1275 within the time limits laid down therein.

Objectives to be achieved

TARGET	FACT 2021 152	FACT 2022 153	TARGET 2030
renovated building floor area of public buildings (total renovated, thousand m	63,77	23,18	~2 50 0154
reduced energy consumption by publicauthorities 155 (% vs 2021)			—11,4

III Policies and measures to achieve the objectives

The measures included in the target scenario to achieve the objectives as a whole in 2021-2030 will deliver 236 GWh cumulative energy savings.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	mark-them	sources
3.2.2.1	Impose an obligation on public authorities to monitor energy consumption and reduce energy consumption	1.9 % annual energy reduction	KEM VK BVKB FOR COPPER	2024	Within the existing budget		
3.2.2.2	Provide financial and knowledge support to municipalities for energy efficiency		KEM EM BVKB	2030	8	0	VB PB EKII

150national, regional or local authorities and entities financed and managed directly by those authorities, but not having an industrial or commercial character

151http://polsis.mk.gov.lv/documents/6898

152At present, only the renovated areas of buildings owned and occupied by the central government in a given year are available. The areas of buildings and premises owned and occupied by public authorities are currently being identified.

153At present, only the renovated areas of buildings owned and occupied by the central government in a given year are available. The areas of buildings and premises owned and occupied by public authorities are currently being identified.

154Total renovated area of public buildings for the period 2021-2030.

155Under Article 5(1) of Directive 2023/1709, the reduction in the energy consumption of public authorities is 1.9 % each year from the entry into force of the directive, 11.10.2025.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
					need	mark-them	sources
	promotion and implementation of measures						
3.2.2.3	Create a public list of buildings and a register of energy data used in buildings	ICT solution created	EM VK KEM BVKB	2025	0,5	0	VB EKII
3.2.2.4	Improving the energy efficiency of public buildings, including through support programmes	at least 3 % of public buildings renovated annually areas	Financial institutions of the MoE VARAM KEM municipality	2030	800	253,5	MFF EKII SKF PB VB
3.2.2.5	Improving the energy performance of public buildings with materials of biological origin by assessing the feasibility study		Financial institutions of the MoE VARAM KEM municipality	2030	90	0	MFF EKII SKF PB VB
3.2.2.6	Promote the integration of low-carbon development aspects into the spatial planning of cities and their agglomerations, including by promoting the widest possible uptake of nature-based solutions	Prioritising green nature-based solutions in binding municipal regulations (where possible) – 10 projects; information seminars on green solutions – 5; green infrastructure projects – 5	Municipalities of Kem VARAM	2030	ND	ND	MFF VB
3.2.2.7	Integrate low-carbon development aspects into municipal development planning documents		VARAM KEM municipalities	2030	within the existing budget		
3.2.2.8	Develop a methodology and an appropriate database for the calculation of regional	methodology database	Municipalities of Kem	2025	0,069	0,069	VB
3.2.2.9	Raise awareness and knowledge of the public and municipalities and planning regions on low-carbon development, innovative technologies		Municipalities of Kem VARAM	2030	0,093	0,093	VB

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
					need	mark-them	sources
3.2.2.10	Development and deployment of innovative solutions in services provided by municipalities to improve energy efficiency	at least -10 % of service cost per customer (EUR) or – 10 % energy consumption (MWh) or -10 % time consumption (h)	MoEPRD, local authorities	2030	6.1	6.1	MFF PB

3.2.2.1. As part of**the activity of setting the obligation to monitor and reduce energy consumption for public authorities**, 1.9 % will be set, with electricity, heat, natural gas and other fuels included in the scope of the obligation, transport energy consumed in the public sector – buildings owned, held or occupied by the State and local authorities, and in State and local authority agencies and capital companies (including electricity, heat, fuel and fuel). As part of the obligation, it will be possible to transfer the excess obligation to another executor (transfer of surplus between municipalities) and a mechanism of liability for failure to fulfil obligations will be established to ensure compliance with the obligation. The obligation to monitor the consumption of energy in the public sector – heat, electricity, fuel, fuel, fuel, fuel – will be carried out in a single ICT solution, where this information will be reported under the authority, supervision or subordination of the ministry, local government, state or local government capital companies. Meeting the energy saving obligation 2022. — During the 2023 heating season and the collection of energy consumption data, it was concluded that there is no effective monitoring of energy consumption in the public sector, no authority collects data on total energy consumption, and therefore no coordinated and harmonised monitoring of energy consumption, which could ensure the effective implementation of measures to reduce and save energy consumption. Similarly, in municipalities, energy consumption is monitored under different conditions and for different institutions or types of energy.

3.2.2.2. As part of**financial and knowledge support**, **municipalities** will be offered support for the activities of an energy advisor (municipal staff/outsource), support for the implementation of energy efficiency measures, e.g. by advising the public, helping citizens to prepare the necessary documents for funding from the EU Structural Funds, support for the development of a single ICT solution for monitoring energy consumption. The funding for this measure is planned to be up to 8 million for a period of seven years. EUR of climate finance (sub-programme of the KEM budget).

3.2.2.3. As part of the activity of establishing the**list of public buildings**, it is necessary to develop an ICT solution that incorporates and makes available within the public administration complete and dynamic information on buildings owned, held and used by the public authorities, municipalities, the State or local authorities, capital companies, State and local authorities, where information on the type of energy/source used, such as CSA heat or fuel used, electricity taken from the grid or self-generated electricity, etc. The public sector should also use this solution to report data on the annual consumption of each type of energy or type of energy in each building included in the list. Where technically possible, the reporting obligation should be replaced by a centralised ICT solution that, based on national registers data on building ownership, would ensure the automated extraction of relevant energy consumption data from major energy system operators and information systems maintained by district heating traders on state and municipal buildings/sites. This measure is necessary because at present no one collects information on public (State and municipal) buildings and energy consumption, thus failing to ensure efficient land use management and, overall, efficient energy use and management in each department.

3.2.2.4. As part of the action to**improve the energy efficiency of public buildings**, support should be provided for the conversion or renovation of existing buildings, including nearly zero-energy

consumption or nearly zero-emission buildings (deep renovation), heating infrastructure conversion or renovation, as well as through an amendment of building codes or an obligation to ensure that buildings meet a certain energy performance class.

3.2.2.5. As part of the action to improve the**energy performance of public buildings with materials of biological origin**, support or obligation should be provided for the improvement of the energy performance of public buildings, in particular for buildings that can be improved by materials of biological origin. The possibility of introducing an obligation to improve the energy performance of public buildings with bio-materials (fully or to a certain extent) should also be considered, thus providing higher added value for the use of biological materials and possibly promoting the domestic production of such materials.

3.2.2.6. The following actions shall be implemented as part of the promotion action for the integration of low-carbon development aspects into the spatial planning of cities and their agglomerations: (1) develop a framework for construction and development that supports and incentivises the choice of green solutions; (2) carry out information and education campaigns for the general public, businesses, NGOs, national and local authorities on the existence and benefits of such solutions in specific cases; (3) the implementation of pilot projects; (4) calculations (pilot project and foreign practice) comparing long-term and short-term benefits (grey infrastructure vs nature-based solutions).

3.2.2.7. As part of the action to integrate**low-carbon development aspects into municipal development planning documents**, the following actions shall be carried out: (1) improve municipal development programmes by integrating low-carbon development and climate change adaptation aspects; (2) integrate low-carbon development and climate change adaptation aspects into municipal spatial development planning documents, including by improving urban planning through the development of nature-based solutions.

3.2.2.9. As part of the action to**improve awareness and knowledge of low-carbon development among the general public and local authorities and planning regions, innovative technologies** must include (1) regular public information, periodic information campaigns for the wider public; (2) training for municipalities on low-carbon development; (3) education of municipalities on innovative technologies and development planning; (4) information measures for municipal staff to inform about the need for EV charging points in urban centres and public buildings; (5) educational measures on the principles of socially responsible use of RES; (6) provision of information support on the transition to zero- or low-emission transport in the county centres (leasing/crediting/alternative fuels benefits – booklets, information centres, direct consultations, information days, seminars).

3.2.2.10. The measure "smart**municipalities" will be implemented as part of the action for the development and implementation of innovative solutions in services to improve energy efficiency provided** by municipalities and will support solutions in various areas, such as the development and implementation of energy efficiency solutions in buildings, integrated energy supply systems, etc., in order to reduce energy consumption, which will be assessed by comparing the annual energy consumption in the field of project implementation before the project application is submitted and after completion of the project.

3.2.3. Building energy efficiency

Base Scenario I

Of the total share of multi-apartment buildings, only 3 % of the buildings were built after 2003 (4 % of 1993), when new building code requirements for the building envelope entered into force – building code 002-001 'Termal engineering for building envelopes', which set significantly higher thermal requirements for building envelopes. At the same time, the total number of non-residential buildings is 1.068 million, but only 108 thousand buildings are heated and thus consume fuel or heat. In the period up to 2050, 30 % of residential buildings and 10 % of non-residential buildings will no longer be appropriate to renovate. The buildings with the highest energy consumption – office buildings, hotel buildings, industrial production buildings, schools and universities, residential buildings, as well as wholesale and retail buildings – account for almost 20 % of the total building stock in Latvia.

Apartment dwellings

Total number of apartment buildings	39500
Number of buildings to be renovated	38000
Cost-effective restoration towards 2050	26600 (30 % of 38000 will not be renovated); 36.8 million m^2

Single-apartment dwellings (private houses)

Total number and area of private houses	309929
Number of houses where cost-effective renovation can be carried out; 156	233487
Number and floor area of potentially energy-efficient buildings to be renovated	163441 (30 % of 233487 will not be renovated); Million m^2

Non-residential buildings (excluding industrial buildings)

Total number and area of buildings	973871 (all types of non-residential buildings, including garages, snives, etc.)
Number and floor area of buildings that can berenovated 157	75000; Million m^{2}[2]
Number and floor area of potentially energy-efficient buildings to be renovated	67500 (90 % of 75000) Million m^2 (90 % of 27.15 million m^2) (assuming 10 % would not be useful to restore (by 2050).

For the period 2007 onwards — In 2023, a total of 1566 residential buildings, 130 public buildings (state buildings) and 200 municipal buildings will have improved energy efficiency. In the period 2023-2026, there will be an additional ~300 residential buildings, ~100 public buildings and ~ 40 municipal buildings.

Objectives to be achieved

Objective	Fact 2021	Objecti ve

156according to VZD data on buildings heated
157according to VZD data on buildings heated

New buildings in the residential and non-residential sector do not	All new dwellings, and non-residential buildings correspond to building A energy efficiency class (nearly zero-energy building)	All new dwellings and non-residential buildings

III Policies and measures to achieve the objectives

The measures included in the target scenario to achieve the objectives as a whole in 2021-2030 will deliver 552 GWh cumulative energy savings.

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million		
					need	- entert	sources
3.2.3.1	Set an obligation for all new residential and non-residential buildings to comply with zero-emission building	Regulatory framework (construction)	EM	2026	Within the existing budget		
3.2.3.2	Ensure the connection of residential, multi-apartment or non-residential buildings/constructions to efficient CSAS building renovations, including support programmes	at least 50 buildings newly connected to an efficient CSAS	EM VARAM KEM financial institutions	2030	50	3,16	MFF EKII
3.2.3.3	Impose an obligation to connect buildings owned by the State and municipalities to efficient CSAS where this is economically justified	At least 50 buildings connected to an efficient CSA	EM	2035	50	0	MFF EKII
3.2.3.4	Improving the energy efficiency of multi-apartment buildings, including through support	restored at least 2000 apartment buildings	EM Treasury financial institutions	2030	1500	230,5	MFF RRF
3.2.3.5	Provide support to citizens at risk of energy poverty as part of energy efficiency operations in multi-apartment buildings	Support delivered at least 2017 households	Local authorities of the EM KEM financial institution	2030	10	0	EKII SKF
3.2.3.6	Implement district renovation (improving the energy efficiency of buildings at district level), including as part of support programmes	At least 4 quarters restored	Local authorities of the EM KEM financial institution	2030	875	0	MFF EKII
3.2.3.7	Improve the energy efficiency of multi-apartment buildings under simplified support	Restored at least 500 buildings	Financial institutions of the MoE	2030	250	0	MFF RRF

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million [illegible])		
					need	- entert	sources
3.2.3.8	Improving the energy efficiency of private houses, including through support programmes	renovated at least 5000 buildings	EM VARAM KEM Treasury Financial Institutions	2030	100	2,37	MFF EKII SKF
3.2.3.9	Promote the installation of heating systems for multi-apartment dwellings, including as part of support programmes	Installed thermal control and remote metering systems for 15 % of renovated multi-apartment buildings under support programmes	EM	2030	53.5	0	SKF VB
3.2.3.10	Develop standard refurbishment drafts	Improved energy efficiency for 13450 dwellings	EM	2025	Within the existing budget		
3.2.3.11	Update the long-term strategy for buildings	National building stock renovation plan	EM	2026	Within the existing budget		
3.2.3.12	Change the decision-making process for building renovation or connection to an effective CSAS	Reduction of the required number of positive votes decision adoption	EM	2024	Within the existing budget		
3.2.3.13	Review home managers' obligations and rights in the field of energy efficiency	Normative framework	EM	2025	Within the existing budget		
3.2.3.14	By developing the ESCO market, attract private investment for energy efficiency improvement projects by addressing ESCO market failures		EM KEM	2030	15	0	VB MFF
3.2.3.15	By developing PESKO capacities, ensure that municipalities are involved in improving energy efficiency in supporting projects	Launched PESKO activity	EM	2030	15	0	VB PB MFF
3.2.3.16	Continue the implementation of the		EM	2030	0,75	0,75	VB MFF
3.2.3.17	As part of the RCN, assess the regulatory framework applied to residential buildings (or parts thereof) where energy efficiency improvement measures have been taken	Contribution to the renovation of at least 2000 additional buildings	EM MOF TM	2026	Within the existing budget		

measure code	Action to be taken to implement the action	Effective indicator	Institution involved in enforcement	Execution deadline	Investments (million [illegible] what is needed? I'm
3.2.3.18	Evaluate and promote the use of industrially manufactured panels for energy efficiency of DME in standard projects, including an assessment of the necessary standardisation measures	solutions for intensification of renovation rates	The municipalities of the MoE	2025	Within the existing budget
3.2.3.19	Find solutions to support the construction of	Information Report	EM MOA	2025	Within the existing budget
3.2.3.20	Development financial institutions Altum capacity-building by one-stop-shop transformation		EM	2026	Within the existing budget
3.2.3.21	Impose an obligation on buildings that: not compliant minimum energy efficiency requirements, develop technical				

3.2.3.1. For the connection of residential buildings, multi-apartment buildings or non-residential buildings/constructions to an effective CSAS support programme (e.g. the building was connected to CSAS but disconnected), support should be provided for the connection of existing buildings to a CSAS compliant with the definition of effective CSASi158, in order to reduce the use of individual heating installations and at the same time make more efficient use of the existing CSAS and its infrastructure. This action will also ensure that buildings meet the nearly zero-emission building criteria, as well as counting towards the national cumulative energy savings target.

3.2.3.4. As part of the action to**improve the energy efficiency of multi-apartment buildings**, support should be provided for the conversion or renovation of existing buildings, refurbishment or renovation of heating infrastructure, as well as through an amendment to building codes or an obligation to ensure that buildings meet a certain energy performance class. It is also necessary to amend the rules of the support programmes, which will provide for lighter conditions for the documentation to be submitted, in order to allow the house to start in the support programme, leading to an increase in the number of multi-apartment buildings carrying out renovations. The principle of "health in all policies" should be taken into account on an equal footing in energy efficiency.

3.2.3.5. In the**framework of energy efficiency operations in multi-apartment buildings, support to citizens at risk of energy poverty as part of the delivery** action (including in combination with other support programmes) should be provided to households/citizens at risk of energy poverty and/or identified as vulnerable citizens/households, citizens receiving housing benefits from the municipality (poor, poor, etc.) so that the constraints on their financial resources and their inability to undertake additional financial commitments, as well as a lack of awareness and knowledge, do not hinder the implementation of these activities or decisions on the implementation of these actions. Support programmes would require households at risk of poverty to significantly increase the grant aid intensity (and by providing a guarantee for loans) for the replacement of solid

158Article 24(1) of Directive 2023/1791

biomass heating in fossil-based heating plants and cities to zero-emission solutions or connection to CSAS or to improve the energy efficiency of the building, avoiding that support mechanisms in place for certain groups of society might be unaffordable and should be subject to support mechanisms at national or municipal level to compensate for energy costs.

3.2.3.6. As part of the renovation operation of energy efficiency improvement districts, support shall be provided under a support programme targeting a number of multi-apartment buildings as a whole in the relevant territorial 'quare' area, including where a separate closed system exists for the supply of 'qualitary' heating. Building managers would be given the right to carry out and submit project documentation in the regulatory framework. Under support programmes, the use of materials of biological origin should be preferred to support the development of the circular economy.

3.2.3.7. Within the framework of**simplified support programmes for the energy efficiency of multi-apartment buildings**, support should be provided as part of the improvement action for existing buildings with technical characteristics consistent with those of an insulated building, such as thickness and quality of exterior walls, which would involve the improvement of heating engineering networks (refurbishment of internal heating networks and upgrading of individual heat units) and/or prevention of heat losses (roof, attics, cellars, windows, doors). This would prevent existing heating systems (one-pipe heating system) from fully allowing room temperature control, but the installation of individual heat meters without refurbishing the internal system is not possible. Within the framework of the action, support should also be provided for the renovation of internal thermal networks of renovated or heritage buildings or measures for the installation of mechanical ventilation systems.

3.2.3.8. As part of the action to**improve the energy efficiency of private** houses, support should be provided for the conversion or renovation of existing buildings, including simplified renovation, refurbishment or renovation of heating infrastructure, as well as through an amendment to building codes or an obligation to ensure that buildings meet a certain energy performance class. It is also necessary to adapt the conditions for support depending on the solvency capacity of households in buildings (the share of households in energy poverty in buildings) and the value of the building.

3.2.3.9. As part of the action to**promote the installation of heating systems in multi-apartment dwellings**, it is planned to provide support for the installation of these measuring devices to socially disadvantaged residents or households, both within the framework of climate finance and the A/s Riga Heat activities. It is also planned to carry out extensive public information and education activities on the benefits of such measuring devices and the impact of their use on energy costs, including in the framework of support programmes.

3.2.3.10. As part of the action to develop**standard renovation projects for multi-apartment residential buildings**, a typical project will develop multi-layer solutions to improve energy efficiency, as well as develop solutions with and without the most common serial multi-apartment residential buildings for the renovation of engineering systems. The results of the study shall be used for drawing up technical survey opinions prior to the renovation of multi-apartment dwellings, thus reducing the amount of work required and, as a result, the cost of the technical survey of the dwelling. The implementation of the benchmark principle to simplify the renovation process will also be assessed as part of the action.

3.2.3.11. As part of the development of the long-term building strategy, the development of a national building stock renovation plan will be ensured, which will include progress towards transforming the building stock into zero-emission buildings and achieving decarbonisation by 2050.

3.2.3.12. The decision-making procedures for the renovation or connection of buildings to an effective CSAS for the purpose of carrying out the action should reduce the number of votes required for the adoption of a decision by establishing minority votes or by establishing the number of votes required for several rounds of votes, as well as ensure that financial institutions comply with

the voting threshold required by law for consent. The regulatory framework must therefore set out 'minority votes' for the purpose of carrying out the renovation: 1/3 of those present at the general meeting will be entitled to take a decision on the renovation of the house, including commitment, if the meeting is repeated and the first meeting did not have a quorum for the adoption of a decision.

3.2.3.17. As part of the RDP assessment of the regulatory framework applicable to residential buildings (or parts of them), the activity would apply to residential buildings or parts thereof where energy efficiency improvement measures have been taken (partial or deep renovation of buildings, heating of buildings, etc.). The possibility of tax relief should be assessed as part of the action.

3.2.3.19. As part of the**activity to support the construction of wooden buildings**, it is necessary to assess the wider use of carbon sequestration bioeconomy products in public construction and to develop a regulatory framework to determine the share of renewable building materials in all new constructions of public buildings.

3.2.3.21. An obligation for buildings that do not comply with the minimum energy performance requirements to draw up technical documentation as part of the activity of setting up technical documentation for buildings that do not comply with the minimum energy performance requirements should be obliged for such buildings to be drawn up as part of the minimum items necessary for the maintenance of a dwelling. Within the framework of the action, it should be established that the expenditure related to the drawing up of such technical documentation should be defined as compulsory maintenance costs.

3.2.4. Energy savings in final energy consumption

Base Scenario I

As part of the energy efficiency monitoring system, the new energy savings for 2021 and 2 022 are equivalent, i.e. 542.1 GWh in 2021, 525.3 GWh in 2022. Together with the 2021 savings, cumulative energy savings for the period up to 2030 will amount to 3 147.9 GWh (15.4 % of the national mandatory 2030 target).

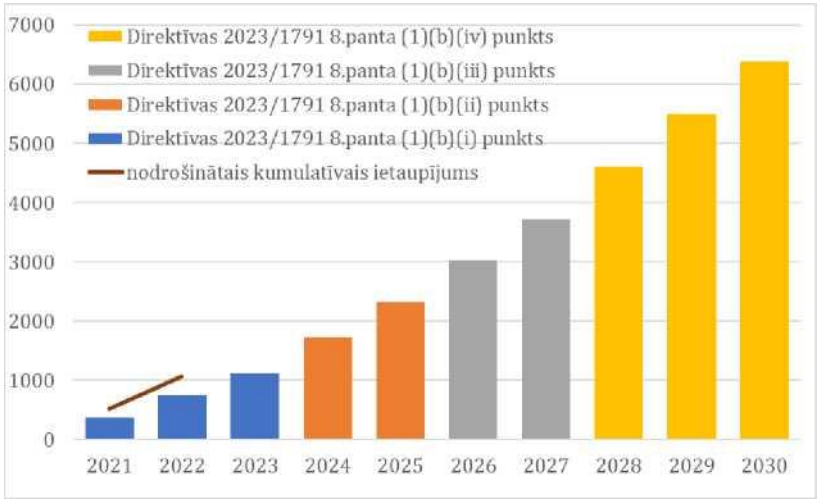


Figure 13: Cumulative end-use energy savings ensured and its target (GWh)[159]

The total number of large companies and large electricity consumers fluctuates on an annual basis, but is generally stable (1 172 in 2021; 2022 – 1184). In terms of energy savings, 2022 large companies and large electricity consumers have achieved:

[159] CSB, with 22 % higher energy savings reported by the FEI than in 2021. At the same time, looking at energy savings from recent years, there is no concrete trend of 209.5 GWh in 2019; In 2020 – 114.3 GWh; 2021 – 103.3 GWh; 126.2 GWh 2022).

Energy savings reported by municipalities and national authorities are almost 25 % higher in 2022 compared to 2021 (2021: 7.5 GWh; 2022 – 9.4 GWh). Under the 2022 energy efficiency obligation scheme, as in 2021, there are only energy savings reported on a voluntary basis. The share of these

energy savings in the 2022 new energy savings is 71.1 % (75.8 % in 2021 or 408.2 GWh).

Objectives to be achieved

TARGET	FACT 2021 159	FACT 2022 160	SAUCE 2030
Cumulative end-use energy savings	542,076	1067,364	29522

III Policies and measures to achieve the objectives

See: 3.1 and 3.2.1. — Chapters 3.2.3.

The decarbonisation and energy efficiency dimension measures included in the target scenario will bring about 18-20 TWh cumulative energy savings.

3.2.5. Potential of high-efficiency cogeneration and efficient CSA and CAA

Latvia has carried out a 'Comprehensive assessment of the potential for the use of high-efficiency cogeneration and efficient district heating and cooling and a cost-benefit analysis in line with the requirements of Directive2012/27/EU'161. The latest evaluation will be carried out within the deadline for the transposition of Directive 2023/1791 and will be published on the KEM website.

Latvia has collected data on all CSAS operators (heat producers), including traders in different sectors that are heat autoproducers (heat produced is a by-product), and concluded that in 2023 Latvian CSAS complies with the conditions for an efficient CSAS inm162, as 94.6 % of Latvian CSAS heat producers in 2023 meet the criteria for an efficient heating system set out in Directive 2023/1791. In 2023, 44 out of 230 CSAS producers did not meet the set criteria, where most of them are small heat producers, which are mostly natural gas users, or use RES to a lesser extent than the criteria, e.g. one producer has a RES share of 48.2 % and another combination of RES and CHP was 44.3 %. This number is expected to decrease in the future due to the launch of new biomass fuel combustion plants 2023. — During the heating season 2024.

In the light of the above assessment as a whole, under the current conditions, the investments in connection with buildings in CSAS included in the Plan or currently being implemented are considered to be in line with Regulation 2021/1058163and do not fall within the scope of the excludable actions referred to in Article 7(1h) of Regulation 2021/1058.

3.2.6. Cost-effective minimum level of requirements for buildings

The characteristics and values of the thermal engineering of building envelopes are laid down in Cabinet Regulation No 280 of 25 June 2019 on Latvian building code LBN 002-19 thermal engineering of buildingenvelopes164. From 2021, the requirements for minimum permissible levels of energy performance of buildings, energy performance assessment for renovation and refurbishment of buildings have beenstrengthened165.

3.3. Energy security and energy independence

Base Scenario I

The fulfilment of the energy security condition is best characterised by how much energy and energy

159BVKB
160BVKB
161https://www.em.gov.lv/lv/nozares_politika/energoefektivitate_un_siltumapgade/zinojumi_eiropas_komisijai/
162Article 24(10)(c) of Directive 2018/2001; Article 24(1) of Directive 2023/1791
Regulation (EU) 2021/1058 of the163 European Parliament and of the Council of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund
164 https://likumi.lv/ta/id/307966-noteikumi-par-latvijas-buvnormativu-lbn-002-19-eku-norobezojoso-konstrukciju-heat
165https://likumi.lv/ta/id/322436-eku-energoefektivitates-aprekina-metodes-un-eku-energosertifikacijas-noteikumi

Latvia can produce itself (in-country) and the need to import (energy dependency), as well as how many energy sources are imported from different sources. Latvia does not produce fossil energy resources (with the exception of a small amount of peat and peat briquette fuels), but solid, liquid and gaseous biomass fuels and renewable electricity and heat are produced in sufficient quantities, while Latvia's total energy consumption balance (energy production, imports/export balance and total energy consumption) is positive166, with Latvia being able to contribute 66 % of total energy consumption through primary energy production.

Latvia's energy dependenceis 167 168 lower than in the EU (62.5 % in 2022) due to the increase in production and use of HEs (especially renewable electricity and heat), the development of self-generation and the use of biomass fuels.

Table 1: Latvia's energy dependency rates (%)[169]

	2017	2018	2019	2020	2021	2022
energy dependency	44,1	44,3	43,9	45,5	38,3	38,7
solid fossil fuels	88,5	91,3	110,8	89,6	93,1	193,2
natural gas fuels	102,0	98,8	100,0	100,1	99,9	99,8
petroleum products	100,1	98,1	100,2	105,6	93,7	101.5

Latvia will meet the objective of security169of gas supply with implemented and implemented measures and technologies, since Latvia operates PG K and has sufficient interconnections with Estonia and Lithuania. The calculation of the gas safety indicator, the infrastructure standard N-1170, shows that the supply of natural gas to Latvian final customers will be fully ensured in the event of disruption of the operation of any natural gas supply source, the N-1 value in the event of disruption of the largest natural gas infrastructure – UGS – significantly exceeds the 100 % benchmark: 131171% Natural gas interconnector currently built *Balticconnector* (Estonia – Finland) and interconnection Poland-Lithuania (GIPL), so the gas supply systems of the Baltic States and Finland are fully interconnected and connected to continental Europe. 01/01/2023 Latvia entered into force the regulatory framework for a total ban on the supply of Russian natural gas, and consequently Latvia has swiftly changed its sources of supply to the LNG terminal in Klaipėda (Lithuania) and Inkoo (Finland), as well as the use of GIPL. In 2022, Latvia entered into agreements with Estonia and Lithuania on solidarity measures to safeguard the security of gas supply, setting out the modalities for participating Member States to provide support to each other in the event of a gas crisis emergency, as a measure of last resort, when it is not possible to ensure gas supply to solidarity protected customers without assistance.

Stepping up electricity generation capacity through RES is an important objective to strengthen the security of electricity supply. By the end of the first quarter of 2024, the electricity TSOs and DSOs have issued technical requirements for the installation of new connections to CERs and CERs with a total capacity of 6.1 TW. The number of CERs connected to the distribution system at the end of 2023 was around 700, with a total capacity of more than 140 MW, of which around 500 CERs with a total capacity of ~130 MW connected in 2023.

The Baltic energy system synchronisation project is also under way to decouple the electricity systems of Estonia, Latvia and Lithuania from the Russian (BRELL) system and to connect to the

166CSP

167energy dependency shows the extent to which a country is dependent on energy imports to meet its energy needs. This indicator is calculated by subtracting from the energy import rate the volume of exports divided by the total energy consumption. Such an indicator can be calculated for any energy product.

168EUROSTAT

169https://www.conexus.lv/pazemes-dabasgazes-kratuve

the functioning of the170 natural gas system in the event of a shortage of one system object is assessed and prepared following the methodologies described in Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard security of gas supply and repealing Regulation (EU) No 994/2010, which take into account the 'N-1 principle' or failure in the single largest natural gas infrastructure.

171https://www.conexus.lv/uploads/filedir/Zinojumi/2022_PSO_ikgad_nov_zinojums_final.pdf

Continental Europe electricity grid by February 2025, thereby also reducing the security of electricity supply risks currently arising as the Baltic States' electricity systems depend on decisions taken outside the EU.

As part of the synchronisation study, the impact of the N-1 DC interconnection incidents on the electricity supply capacity of the Baltic States' electricity systems under conditions of disconnection from the BRELL system and operating synchronously with continental Europe's electricity system was assessed. The study concluded that operating synchronously with the continental European electricity system would ensure the sufficiency of the electricity capacity in the Baltic electricity system in the event of an incident of the largest direct current interconnection, N-1.

Objectives to be achieved

TARGET	FACT 2021	FACT 2022	TARGET 2030
share of imports in domestic energyconsumption[173] (%)	38,3	38,75	30

III Policies and measures to achieve the objectives

measure code	Action to be taken to implement the measures	Effective indicator	Institution involved in enforcement	Execution deadline	Investment (million) (EUR)		
					need	- enterta	source s
3.3.1	Complete the synchronisation of the Baltic States' electricity grids with the Continental European Network and	Project implemented	TSO KEM	2025	60,3	60,3	RRF PF
3.3.2	Implement the UGS modernisation project	Project implemented	TSO KEM	2025	88	88	CEF PF
3.3.3	Change the national system of emergency oil stocks to ensure the storage of oil stocks in the country	100 % of the national oil security is state property	EM Possessor	2029	647,1	647,1	VB
3.3.4	Join the IEA		KEM EM	2024	Within the existing budget		

[173] https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_ID/default/table?lang=en

3.1.3.19.	Restrictions on the installation of new fossil fuel installations	1) Regulatory framework – 2026 2) Conditions from 2028	Municipalities of Kem	2026-2028	Within the existing budget		
3.1.3.20	Setting progressive restrictions on the use of fossil fuels	1) Regulatory framework – 2026 2) Conditions from 2030; 2040; 2050	KEM	2050	Within the existing budget		
3.3.5	Implement a pilot project for large-capacity power generation plants for the implementation of storage solutions	Storage solutions have been implemented in 2 combustion plants	KEM	2035	20	0	IF RRF PF

3.3.6	Promote the use of electricity storage technologies by economic operators and individuals, including as part of support programmes	Installed electricity storage technologies up to 60 MW	KEM TSOS	2030	60	0	RRF MFF EKII

3.3.1. The following**synchronisation support projects will be implemented as part of the Baltic States synchronisation completion** action: (1) enhancing the cybersecurity of critical infrastructure in the context of cyber threat growth after synchronisation – implementation of the so-called 'Zero trust' ICT architecture security approach; (2) Developing relevant ICT solutions that will develop a concept and software for the management of RES generation resources to ensure stable operation of the transmission network after synchronisation.

3.3.2. The**implementation of the UGS modernisation project under172 action** consists of the improvement of above-ground infrastructure, including through the refurbishment of gas collection point 3, the restoration of wells, as well as the upgrading of the existing 5 gas pumping units and the installation of a new gas pumping unit, improving the security of natural gas supply, increasing the operational capacity of the storage facility and facilitating integration into the international energy market.

3.4. Internal energy market

3.4.1. Electricity interconnectivity

Base Scenario I

Detailed information on established interconnections and their congestion and on electricity imports and exports is available on the website of theLatvian electricityTSO173. According to the latest State of the EnergyUnion174 review, Latvia's electricity interconnectivity rate is17569.42 %, well above the EU-Latvia interconnection target.

172https://www.conexus.lv/zinas-presei/tiek-palielinata-incukalna-pazemes-gazes-kratuves-loma-starptautiska-meroga
173https://www.ast.lv/lv/electricity-market-review?year=2022&month=13
174https://energy.ec.europa.eu/document/download/da7361c1-e609-44ac-a0f2-ea51d1f3799d_en?filename=LV_SoEUr%20Fiche%202023.pdf
175EC Directorate-General for Energy calculations based on ENTSO-E data

Objectives to be achieved

TARGET	FACT 2023	TARGET 2030
interconnection (%)	69,42	> 70

III Policies and measures to achieve the objectives

measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Invest million	rents sources
3.3.1	Complete the synchronisation of the Baltic States' electricity grids with the Continental European Network and ensure its high level of safety	TSO KEM	2025	60,3	MFF (CEF) RRF PF
3.4.1.1	Complete the refurbishment of the existing electricity interconnections between Latvia and Estonia	TSO KEM	2023	ND	MFF (CEF) RRF PF
3.4.1.2	Implement the fourth interconnection between Latvia and Estonia	TSO KEM	20302035		
3.4.1.3	Implement Latvia-Swedish electricity interconnection project	TSO KEM	2040		
3.4.1.4	Implement the Baltic-German Electricity Interconnection Project	TSO KEM	2040	ND	MFF (CEF) VB

3.4.1.1. As part**of the implementation of the Latvian-Swedish electricity interconnection project**, a feasibility study for the construction of the Latvian-Swedish interconnection will be carried out during the Plan period.

3.4.1.2. The purpose**of the Baltic-German electricity interconnection** is to enable the connection of high-capacity offshore wind farms and the Baltic States to become renewable electricity exporting countries to the European electricity market. A technical and economic analysis of the likely development of the project will be carried out during the plan period.

3.4.2. Energy transmission and distribution infrastructure

Base Scenario I

Latvia's electricity transmission network is considered close to optimal with development potential. At present, the electricity transmission network consists of 1 742.13 km for 330 kV lines and 3 859.70 km for 110 kV lines, 17 330 kV substations and 123 110 kV substations, 271 transformer with a total installed capacity of 8956,5 MVA. Latvia has 10 electricity SSO176, where the largest DSO serves 99 % of users, 93 thousand km (1/3 of the systems are made up of a medium-voltage 6-20 kV network; 2/3 of the systems consist of a low-voltage network of 0.4 kV), about 30 thousand for the substations oftransformers,177etc.

The natural gas TSO manages 1 190 km of upstream gas pipeline systems, transporting natural gas to the natural gas distribution system178through 40 gas control stations. On the other hand, UGS can store up to 2.3 billion m^3or 24.22 TWh of natural gas, which is more than twice Latvia's total natural gas consumption in 2021. In Latvia, there is one natural gas DSO ensuring the supply of natural gas from the transmission system to the finalcustomer179.

176https://www.sprk.gov.lv/content/pakalpojumu-sniedzeji-1
177https://sadalestikls.lv/lv/kas-mes-esam
178https://www.conexus.lv/latvijas-gazes-parvades-sistema
179https://www.gaso.lv/uploads/filedir/Iecirknu_teritorijas.jpg

From 2021, and in the coming years, the following projecti[182] will be implemented for the development of Latvia's energy supply system:

- Third electricity interconnection between Latvia and Estonia (commissioned in 2021)[183];
- The electricity transmission network connection "Rīgas TEC-2 – Riga HES" (put into service in 2020)[184];
- The refurbishment of theexisting Estonia-Latvia 330 kV interconnector Valmiera – Tartu and Valmiera –Tsirgulina(interconnector Valmiera – Tartu entered into service in June 2023, interconnection Valmiera – Tsirgulina entered into service on 13/06/2024);
- Synchronisation of the Baltic States with European electricity transmission networks and desynchronisation from Russia's combined electricity system (to be completed in February2025)[186];
- The Latvian-Estonian trans-national offshore wind farm ELWIND project, under which the fourth Estonia-Latvian electricity interconnector will be established;
- Improvement of the functioning of the UGS (project to be completed by2025)[187];
- Upgrading Latvia-Lithuania natural gas interconnection (ELLI)[188] (draft completed in December 2023);
- Provision of internal diagnoses of pipelines in the Izborska – PGK and Pleskava – Riga section until Vireši-Tallinjna;
- Lode-Penuja wind parks[189].

With the introduction and gradual increase of the fixed component of system service charges dependent on connection capacity by electricity system operators, electricity users have continued to progressively optimise electricity connection capacities. The average connection capacity utilisation efficiency was 6.62 % by 2021. Initially, the change in connection loads was faster, between 01/05/2016 and 31/12/2018. AS's Distribution Network had received more than 42000 applications for changes in connection capacity, more than 14000 users with a consumption of between 0 and 120 kWh/year terminated contracts. Between the beginning of 2019 and the end of September 2022, some 13 additional load reductions were applied for 000 times and electricity systems

more than 29000 sites ceased to be used. Users, including connecting connections, have sought more rational connection solutions. At the same time, the use of existing connections for self-generation of electricity has evolved, with the number of micro-generators connected in 2022 ~5 times more than 10 thousand in one year.

II Policies and measures to achieve the objectives

measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments	
				millions	sourcei[190]
3.3.2	Implement the UGS modernisation project	TSO KEM	2025	EUR 88	MFF (CEF) PF
3.4.2.1	Finalise Latvia-Lithuania gas interconnection project	TSO KEM	2023	ND	MFF (CEF)

[182] https://www.ast.lv/lv/content/elektroenergijas-parvades-sistemas-attistibas-plans
[183] https://www.ast.lv/lv/transmission-network-projects/latvijas-igaunijas-3-starpsavienojums
[184] https://www.ast.lv/lv/transmission-network-projects/elektroparvades-linija-rigas-tec-2-rigas-hes
[185] https://www.ast.lv/lv/transmission-network-projects/liniju-valmiera-tartu-un-valmiera-tsirgulina-parbuve-latvijas
[186] https://www.ast.lv/lv/development-projects/parvades-tikla-modernizacija-un-attistiba
[187] https://www.conexus.lv/incukalna-pgk-modernizacija
[188] https://www.conexus.lv/elli
[189] https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A02022R2202-20231217
[190] Plan development, including discussions with the Ministry of Finance, line ministries, sectors and other stakeholders, will identify potential activities that could be financed under private financing.

measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments	
				millions EUR	sourcei[190] PF
3.4.2.2	Implement internal energy infrastructure modernisation projects in line with TSOs and DSOs' 10-year development plans	TSO DSO KEM	2030	300	HFF TSO DSOS
3.4.2.3	Implement the Move HES transition project	As Latvenergo	2030		
3.4.2.4	Develop an action plan for hydrogen infrastructure development and market conditions	KEM EM TSO	2025	Within the existing budget	
3.4.2.5	Improve the digital management of the electricity grid	TSO DSO KEM	2030	ND	PF
3.4.2.6	Construct offshore electricity transmission infrastructure	TSO KEM	2030	ND	MFF (CEF) PF
3.4.2.7	Deploy smart integrated solutions for injecting renewable gases into the transmission system	TSO KEM	2025	ND	PF MFF
3.4.2.8	Implement UGS integrated solutions for injecting renewable gases into the	TSO KEM	2025	ND	PF
3.4.2.9	Implement the Northern Baltic Hydrogen Corridor – Latvia part	TSO KEM	2035	ND	PF
3.4.2.10	Transfer underground energy transmission and distribution infrastructure	TSO DSO CSAS KEM	2050	ND	PF
3.2.1.7	Continue the modernisation of natural gas meters and introduce smart meters for natural gas consumption metering	DSO	2030	5	PF

- **.4.2.2 The following projects will be implemented as** part of the implementation action for internal energy infrastructure modernisation projects: (1) constructing new 110 kV substations and increasing the capacity of 110 kV transformers available at 110 kV substations; (2) construction and conversion of substations; (3) construction of a regional biomethane injection point, for the injection of locally produced biomethane into existing natural gas infrastructure. As part of the action, the inclusion of HE generation capacity in existing energy infrastructure will be ensured and technical constraints on the take-up of new capacities will be removed, in addition to ensuring the availability of electricity transmission capacity for consumption, reducing technological losses, and ensuring that network operations become more stable. ELWIND requires the reinforcement of the LVL-Lithuania 330 kV interconnector Grobiņš-Darbenai by increasing the capacity of the existing interconnector, and the reinforcement of the Latvian-Lithuania interconnections by constructing a new 330 kV line Ventspils-Brocenii, as well as the construction of a new 330 kV Latvia-Lithuania interconnector at Brocenii-Varduva. Injecting biomethane into the grid through the development of biomethane entry points to more than 20 biomethane producers, ensuring the availability of biomethane for electricity and heat production as well as transport demand.

- **.4.2.5** Actions to improve digital grid management as a complex set of measures include: (1) deployment of*advanced distribution management system*; (2) Remotely operated medium voltage switches; (4) training of staff.

- **.4.2.7 The** operation of the deployment of smart integrated solutions for the injection of renewable gases into the transmission system requires the construction of biomethane injection points that would enable off-grid biomethane producers (producers not directly connected to the

gas transmission system) to feed the produced biomethane into the transmission network without connecting from the biomethane plant to the transmission system.

- **.4.2.9 The North-Baltic Hydrogen Corridor** is a project jointly implemented by six countries PSO 180 (Finland, Estonia, Germany, Latvia, Lithuania, Poland) with the aim of creating a cross-border 100 % hydrogen gas transmission corridor from Finland to Germany through the Baltic States and Poland.

3.4.3. Electricity and gas markets

Base Scenario I

Latvia's natural gas market was opened on 1 March 2017 and household customers were entitled to receive natural gas at a tariff set by SPRK by 30 April 2023. As of 1 July 2023, household customers are full participants in the natural gas market, who purchase natural gas at the agreed price.

The entry-exit system for natural gas transmission of Finland, Estonia and Latvia (FinEstLat) became operational on 1.1.2020. The creation of a single system was possible with the completion of the construction of the Estonia-Finland interconnection *Balticconnector*. FinEstLat's single system works well by improving security of supply, facilitating the free movement of natural gas in the region and preventing discrimination of supply routes, reducing barriers to entry of new entrants to the FinEstLat natural gas market and thereby promoting competition in the market, providing greater market liquidity, and improving the use of existing infrastructure and avoiding over -investment in it.

In Latvia, the opening of the electricity market was carried out gradually by opening up the market in 2007 to traders with a high volume of electricity consumption, with electricity users with medium electricity consumption from 1 April 2012 and opening the electricity market on the free market to other traders as of 1.11.2012. As of 2015, the market was opened to households. In the total electricity market consumption, the consumption of electricity by traders accounts for 75 % and 25 % of household electricity consumption. The Latvian Price Zone of one of Europe*'s leading electricity exchange Nord Pool* started its work in 2013.

II Policies and measures to achieve the objectives

measure code	Action to be taken to implement the action	Institution involved in enforcemen	Execution deadline	Investments	
				millions	sourcei [181]
3.4.3.1	Creation of a market framework for the Baltic States for the deployment of consumer response services in the balancing market through aggregation	KEM	2030	ND	
3.4.3.2	Impose an obligation to obtain a permit for the entry into operation of new installations for the production of heat	KEM	2024	Within the existing budget	
3.4.2.4	Develop an action plan for hydrogen infrastructure development and market conditions	KEM EM TSO	2025	Within the existing budget	

3.4.3.1. As part of the**obligation to obtain permits for new heat generation capacity (heat operators)**, an assessment of the usefulness of obtaining such permits will be carried out in assessing the saturation of generating capacity in a given area and the functionality of the market. Within the framework of the action, if appropriate, the relevant legislation will be developed setting

180Gasgrid Finland Oy, Elering AS, Conexus, Amber Grid AB, GAZ SYSTEM S.A. and ONTRAS Gastransport GmbH

181The development of the draft plan, including discussions with the Ministry of Finance, line ministries, sectors and other stakeholders, will identify potential measures that could be financed under private financing.

out the conditions for the authorisation of the KEM.

3.4.4. Diversification of energy sources and supply routes

By 2022, Latvia imported more than 90 % of natural gas from Russia, while petroleum products from Russia were almost non-imported, with 10 % of gas imported from Russia. In 2021, imports of electricity from Russia accounted for 7 % of the country's consumption (7.38 TWh). Imports of energy from Belarus were effectively stopped as a result of the 2021 international sanctions. However, as a result of the Russian aggression in Ukraine, the Latvian government has adopted successive steps to strengthen the country's energy security, including a ban on imports of Russian natural gas from 1 January 2023.

With the interruption of the supply of natural gas from Russia in 2022 and the imposition of a ban as of 1 January 2023, Latvia's natural gas supply sources and consequently natural gas flows have changed completely. LNG terminals in Klaipėda, Lithuania and Inkoo, Finland have become the main sources of natural gas supply. As of 1 May 2022, natural gas is also supplied in the region via the Poland-Lithuania gas interconnector (GIPL).

In addition, Latvia advocates the introduction of uniform EU-level sanctions on LPG produced in Russia and Belarus or produced from Russian crude oil, or which is currently able to enter the Latvian market from other EU MS without significant restrictions and is used in households as fuel for heat production, cooking as well as automotive fuel.

3.4.5. Increasing the flexibility of the energy system

Latvia has a regulatory framework that regulates the activities, rights and obligations of aggregators, as well as the settlement of its services and the relationship between the aggregator and other system and market participants. The operation of aggregators in Latvia is not possible without smart meters installed and accessible to consumers. The data reading system for smart electricity meters is protected by multi-level access principles and data encryption techniques are used at all levels, thus excluding any possibility of identifying the name, surname or address of the specific user during the data exchange process. Already today, smart electricity meters are installed in Latvia for more than 99 % of electricity users' connection to the sites.

In order to facilitate the development of the market for energy system flexibility services, the Latvian electricity TSOs, together with the DSO AS 'Sadales Network', have entered into cooperation with interested market participants through the testing and development of the "OneNet" prototype IT platform for energy system flexibility services developed under the "OneNet project". The two Latvian electricity system operators together with partners from Estonia, Lithuania, Norway, Sweden, Finland and Ireland in*the*OneNet project, co-funded by the EU Horizon programme, represent the Northern Demonstration Region. As part of the project, the region is developing a prototype of an IT platform that will facilitate the coordinated and prudent use of the electricity resources available in the energy system, with a view to ensuring the efficient involvement of system resources in ensuring the sound operation of the energy system. The*OneNet*option supports both system operators with coordinated action between operators and service providers by ensuring simple management of their resources, even with distributed pools of resources. The deployment of that IT platform, as well as the withdrawal of the Baltic States from the BRELL Treaty planned for February 2025 and related changes in the functioning of the energy system, are expected to significantly contribute to the development of flexibility services in the energy system.

3.4.6. Involvement of energy consumers

Base Scenario I

In 2016, a net metering system for electricity was also introduced, which has been replaced by net

settlement systems andmicro 182 -generatorm for183 households producing renewable electricity for self-consumption. In 2022, there has been a significant increase in permits for increasing electricity generation capacity or for the introduction of new generating installations, where up to 300 permits per year were issued by 2022 and more than 1000 permits were already issued in 2022. In 2022, the regulatory framework was changed by increasing the capacity of the electricity generating installation requiring a permit to > 500 kW.

Objectives to be achieved

TARGET	FACT 2021	TARGET 2030
number of micro-generators connected to the	2000	> 30000

III Policies and measures to achieve the objectives

measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments in millions EUR sources
3.4.6.1	Convert the net accounting system to a net settlement system	KEM	2024	Within the existing budget
3.4.6.2	Develop a regulatory framework for energy communities and electricity sharing	KEM	2024	Within the existing budget

3.4.6.1. For the implementation of the184 planned operation of the net metering system into net settlementsystems in 2024, a regulatory framework has been adopted, providing that, when switching to a net settlement system, manufacturers with a capacity of more than 50 kW of their own equipment have access to the universal net settlement service, and the net settlement system may also be used by legal persons. In addition, a condition has been introduced that, in the context of a net billing system, active customers may also use the electricity they generate in a number of consumption and generation facilities, the maximum permitted capacity threshold for electricity generation being set at 1 MW, and the participation in electricity generation is not considered as a commercial activity, which reduces the administrative burden for active electricity users when producing electricity for own consumption. The provision of a universal net settlement service in order to guarantee the availability of supply to customers is a mandatory obligation for electricity traders and, as part of which, in order to avoid losses for active customers, the regulatory framework lays down a minimum price for electricity and a maximum permissible commission charged by the trader for the purchase of electricity. Similarly, the regulatory framework provides for an expiry date of the historical net accounting system until 28.2.2029.

3.4.6.2. As part of the regulatory framework for energy communities and electricity sharing, a regulatory framework will be established in 2024 to ensure uniform conditions for energy communities and energy sharing activities, reducing the administrative burden for users and ensuring administrative support for energy communities and energy sharing. The respective share of self-consumption and electricity transferred to third parties will determine the difference between the active customer and the electricity producer. In addition, the conditions for market participants to participate simultaneously in multiple forms of self-consumption, such as the net settlement system for electricity and energy communities, will be clearly defined. The regulatory framework focuses on voluntary participation in energy communities, which will be open to

182https://sadalestikls.lv/lv/blog/post/neto-uzskaite-un-neto-norekini

183power generator and related protection and converter equipment (micro-generator inverter) for the generation of AC electricity with an operating current of up to 16 amperes for installation in the customer's electrical installation in parallel with the low-voltage distribution grid. Such current corresponds to a power of 3.7 kW in a single-phase grid and 11.1 kW in a three-phase grid, respectively.

184https://www.kem.gov.lv/lv/jaunums/mikrogeneratoru-ipasnieki-neto-uzskaites-sistemu-vares-izmantot-lidz-2029gada- 28 February – Approvedi-Electricity-Market-Law-Amendments (draft Law amending the Electricity Market Law)

individuals, associations, small and medium-sized enterprises and municipalities. In general, three forms of energy sharing and energy communities can be distinguished: electricity communities, HE energy communities and active joint users. Electricity energy communities will operate in the territory of the Republic of Latvia and all electricity generation facilities within an electricity energy community will have to be connected to the network of one electricity distribution system operator in order to ensure correct accounting of the electricity produced. The AE energy community (heating sector) will operate in one administrative territory or functionally linked administrative areas of the Republic of Latvia, and all HE energy community installations will have to be connected to the network of the same thermal energy transmission and distribution system operator. On the other hand, active users acting jointly are in the same building, for example in a multi-apartment building or in one functionally linked area, such as active users in an industrial park. Electricity communities and HE energy communities will need to register in the register of the energy community, but there will be no need for active customers acting jointly to register in the register.

The total installed capacity of electricity communities or jointly active customers' electricity generation installations is estimated to not exceed 14.999 MW (the condition follows from the Network Code, which sets the maximum generation capacity connected to the electricity distribution system at 14.999 MW). This condition is necessary to ensure accurate records of data. On the other hand, there is no limitation on the installed capacity of the HE energy community, as a result of the technical capabilities of the heating system to which the HE energy community's heat production facilities are intended to be connected.

In general, the framework is designed to give energy communities the right to freely determine their operating principles, the information to be contained in the energy community's statutes or other instruments governing the operation of energy communities, as well as to give energy communities the right to freely choose the electricity dealer with whom to conclude an electricity sharing agreement. However, it is important to point out that, given that the activities of an energy community are based on ensuring self-consumption of energy community members and improving the environmental and social aspects of the area in which the energy community is located, it is intended to clarify certain conditions that the energy community must fulfil. First, given that the 2023 legislation clarified the definition of active customer by explicitly stating that the active customer's primary objective is to ensure its own consumption, it is envisaged that an energy community will have to use at least 80 % of the electricity or heat delivered to the grid for self-consumption purposes. If an energy community does not use at least 80 % of the electricity or heat it produces for its own consumption, it will have to allocate at least 51 % of its profits to social objectives or the administrative area in which the energy community is located for environmental or social purposes. Secondly, it is planned that if a municipality is a member of an energy community, it is obliged to transfer part of the electricity or heat produced by it to the vulnerable groups of the companies.

Financial instruments to support the development of energy communities are earmarked in the ModernisationFund185.

3.4.7. Energy poverty and access to energy

Base Scenario I

In order to measure the186 187 extent of energy poverty, it is possible to choose a number of indicators where the indicator "Citizen or household cannot afford to keep a warm home due to lack of money" is used within the EU.

Table 2: Share of population or households unable to afford to keep a warm dwelling due to lack of money (%)[198]

2017	2018	2019	2020	2021	2022

185https://likumi.lv/ta/id/343812-modernizacijas-fonda-darbibas-kartibas-noteikumi-un-daudzgadu-darbibas-programma
Article 1(10)(1) of the186 Energy Law
187CSP

households (total)					
11,6	9,8	9,7	8,2	6,8	8,6
population (total)					
9,8	7,6	8,0	5,9	4,9	7,0

Tackling energy poverty is mainly addressed through social policies, as well as through various support programmes, which were particularly relevant for 2020. — The 2021 COVID19 pandemic mitigation measures arecovered188as well as 2022. — Within the framework of measures to mitigate the impact of the exceptional increase in energy prices, the189 support for the protected190electricity consumption of the customer that doubled or tripled in 2022 (from EUR 5 to EUR 10, EUR 15 and EUR 20 (depending on the group of protected customers)), while in 2023 the price structure of electricity system services and household expenditure on electricity system services was increased to EUR 20 and EUR 25 respectively, that support to protected customers will be further reviewed in light of the economic situation. The corresponding increased support to protected customers, taking into account the increase in the total cost of billing for electricity consumed, is planned to take the form of a permanent, long-term support. 2022 — During the 2023 heating season, extensive support was granted to the CSA for the consumption of heat and different types of fuels.

Local governments need to ensure minimum income levels for all households where necessary, and they can also provide housing benefits for households which include electricity and heating costs. As of 1 July 2023, a minimum income reform was introduced, resulting in an increase in the amount of support provided under social assistance to low-income households with regard to the guaranteed minimum income benefit and housing benefit. In addition, as of 1 July 2021, minimum rules on expenditure items, including electricity and heating, to be used for the calculation of the uniform housing allowance were introduced in the country. As a result, low-income households cover all housing-related expenditure to a minimum.

Objectives to be achieved

TARGET	FACT 2021	TARGET 2030
Share of population at risk of energy poverty	4,9	&5

188https://www.kem.gov.lv/lv/valsts-atbalsts-20212022-apkures-sezona
189https://www.kem.gov.lv/lv/valsts-atbalsts-20222023-apkures-sezona
190https://www.kem.gov.lv/lv/atbalsts-elektroenergijas-pateretajiem

III Policies and measures to achieve the objectives

measure code	Action to be taken to implement the measures	Effective indicator	Institution involved in enforcement	Execution deadline	Investment (million) (EUR)		
					need	- entertai	sourc es
3.4.7.1	Establish a targeted support system to reduce energy costs for households in energy poverty	1) Regulatory framework adopted; 2) ICT solution developed	KEM	2024	(1) to 153 2) 3,48	1) 0 191 2) 3,48	VB
3.4.7.2	Apply a reduced VAT rate to the supply of wood fuels and heat	Regulatory framework adopted	FM	2030	Within the existing budget		
3.2.3.5	Provide support to citizens at risk of energy poverty as part of energy efficiency operations in multi-apartment buildings	Support provided at least: 2017 households	Local authorities of the EM KEM financial institution	2030	10	0	EKII SKF
3.2.3.8	Improving the energy efficiency of private houses, including through support programmes	At least 5000 buildings renovated	EM VARAM KEM Treasury Financial Institutions	2030	100	2,37	MFF EKII SKF
3.2.3.9	Promote the installation of heating systems for multi-apartment dwellings, including as part of support programmes	Installed thermal regulation and remote metering systems for 15 % of renovated multi-apartment buildings under support programmes	EM	2030	53.5	0	SKF VB

3.4.7.1. In192 December 2023, a new instrument tomeasure energy poverty was introduced in legislation, targeted support for low and middle-income households in situations of extreme energy price increases. Support will be targeted: groups of households that, according to statistics available in public administration databases, qualify as low-income or middle-income households and will be identified in an automated manner;

and the aid is intended to be granted only in situations where an exceptional increase in energy prices (natural gas, heat, electricity and heating fuels) on the market is established. Based on CSP data, the KEM has estimated that the share of households that could qualify for support is around

191In order to provide financing, where necessary, for the provision of support to households in periods when high energy prices will be identified, the draft law on the state budget for the current year and the medium-term budgetary framework will include a framework providing funding for such support measure following the adoption by the Council of the European Union of the general escape clause or the activation of the country-specific clause pursuant to Regulation (EU) 2024/1263 of the European Parliament and of the Council of 29 April 2024 on the effective coordination of economic policies and multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97.

192 https://www.kem.gov.lv/lv/jaunums/raimonds-cudars-situacija-pie-arkarteji-augsta-energoresursu-cenu-kapuma-busim-ready-providing-merket-aid (draft Law on Support of Costs of Energy Supply)

40-50 % of households. Having regard to 2022 — The amount of support paid to households during the 2023 heating season has been estimated at 123-153 million the maximum amount of funding that might be needed to provide targeted support per year, assuming that support would be necessary for all heating seasons, and given that no aid is planned to cover system services. EUR. The funding for the provision of support is planned to be provided under the NB.

3.4.7.2. Apply a reduced VAT rate to the supply of wood fuels and heat until the socio-economic assessment shows that this is no longer necessary. In accordance with Council Directive 2006/112/EC on the common system of value added tax, a reduced rate of VAT on timber used as firewood can be applied until 1 January 2030. Under Directive 2006/112/EC, the application of the reduced VAT rate to district heating is not limited in time.

3.4.8. Breakdown of energy price and energy price elements

In 2021, the price of electricity on the wholesale market increased sharply and its average wholesale price in Europe was 230 % higher than in 2019. The price of electricity continued to fluctuate also in 2022 and, for example, in July 2022 the average electricity price in Latvia increased by 40 % compared to June of the same year and was EUR 304,96/MWh. At the same time, in July, hourly prices fluctuated in the Baltic from the lowest EUR 1.41/MWh to a record high of EUR 2100,08/MWh. In 2023, the price of electricity on the wholesale market has stabilised. The average price of electricity on the wholesale market in 2022 was EUR 225,91/MWh, but in 2023 it was EUR 93.98/MWh, which is more than twice as low as in the relevant period a year ago. In 2024, the electricity market also continued to stabilise, with the average price continuing to decline in the first four months of the year, reaching an average of EUR 78.75/MWh. Given that the electricity consumed in Latvia is mostly purchased on the *Nord Pool* wholesale market, the Baltic and Nordic electricity markets are highly interlinked. In 2022 and 2023, Latvia has seen an increase in the installation of SES, which in the long term could help ensure higher domestic electricity generation, reducing the dependence of electricity prices on fossil energy sources and electricity import prices.

Also, as regards the price of natural gas on the wholesale market, from 2021 onwards, the price of natural gas rose sharply, reaching historical price records. The natural gas exchange price reached EUR 233,68/MWh in September 2022, which was 5.35 times higher than in September 2021 (EUR 43.69/MWh) and almost 30 times higher than in September 2020 (EUR 7.89/MWh)[204]. The reasons for the increase in natural gas prices were global, starting from low air temperature 2020. — In winter 2 021 in Europe, until Russia's war in Ukraine, resulting in a decision to ban natural gas trade with Russia in several EU MS. The emergency and crisis mitigation measures taken in 2022 and 2023, including through the rapid development of LNG terminal infrastructure and the reorientation of the natural gas market towards stable (non-Russia) supplies, have now led to a reduction and stabilisation of natural gas prices. In 2022, the average wholesale market price of natural gas was EUR 134,40/MWh, while the average price for 2023 was EUR 41.40/MWh, which is more than three times lower than in the relevant period before the year. In 2024, the natural gas market has also remained stable, with the price continuing to decrease and reached an average of EUR 27.56/MWh in the first quarter of 2024. Against this background, the wholesale market price of natural gas has returned to 2021 levels. In addition, the wholesale market price also affects the retail price of natural gas in Latvia. Overall, in order to:

[204] https://www.gaso.lv/dabasgazes-tirgus

mitigate the long-term impact of fluctuations in natural gas prices, the rapid development of renewable electricity generation in Latvia, while heat operators have been able to diversify the fuels used, for example by switching to biomass fuels, or to LNG.

Table 3: Breakdown of components of different energy prices for end-users

Natural gas prices [205]	**Electricity prices** [206]	**Variable cost of thermal energy tariffs and ongoing costs** [207]		**Fuel prices**
		Variable costs	**Recurrent cost**	
Natural gas market price	Price of electricity	Fuel price	Wages and social contributions	Fuel and purchase price of biofuel
Allocation systems service (tariff)	Allocation systems service (tariff)	Purchased heat costs	Depreciation of tangible fixed assets and	State duties and taxes: An, VAT, etc.
Transmission systems service (tariff)	Transmission systems service (tariff)	Electricity costs	Equipment and building repairs and	Retailer's costs [208]
storage system service (tariff)	Mandatory procurement component	Water costs	Permanent taxation: IMS	Other impacts
Taxes: VAT (21 %), AN (differentiated	VAT (21 %)	Taxes: DRN, AN	Insurance	

3.4.9. Energy subsidies

Base Scenario I

In Latvia, State aid is provided for the production of electricity from RES or cogeneration within the framework of State aid (no new aid is granted) and merchants receive a fee for the installed capacity ofa cogeneration plant under the mandatory purchasing209 mechanism, receiving aid above the market price (the costs are covered by the VB)210211.

Table 4: Support received under the mandatory procurement mechanism (million) EUR[211]

Type of aid received	2017	2018	2019	2020	2021	2022	2023
the installed capacity of the cogeneration unit	95,62	37,72	37,16	37,48	31,41	28,74	28,74
electricity production from cogeneration	32,06	24,94	22,06	10,93	2,00	—0,08	—0.008
electricity generation in biogas plants	48,71	43,44	40,13	42,57	17,29	—2,18	1,3
electricity generation in biomass plants	38,74	41,09	37,33	40,94	18,49	—8.50	1,42
electricity generation in HES	11,64	5,17	5.69	7,31	3,48	—0,37	0,023
electricity generation in VES	8,50	6,53	8,48	11,45	3,17	—6,13	0,52

The State Audit Office published (31.5.2019) an audit report entitled *'Tax rebates – invisible budgetary expenditure'212,* which aimed to assess whether the current and existing tax advantages in the country achieved their objectives, whether their implementation was monitored

205https://www.sprk.gov.lv/content/tarifi-0
206https://www.sprk.gov.lv/content/tarifi-1
207https://www.sprk.gov.lv/content/tarifi-4
the208 retailer's costs include the addition of various fuel additives, the maintenance and development costs of the company, including maintenance of the service station and personnel costs.
209mandatory procurement is a State-defined support mechanism for electricity producers, which provides for its financing through payments by final electricity customers
210Electricity Market Law
211https://www.em.gov.lv/lv/atbalsts-elektroenergijas-razotajiem; https://www.bvkb.gov.lv/lv/elektroenergijas-obligata-Procurement-Mechanism-Surveillance and Control
212 https://www.lrvk.gov.lv/lv/revizijas/revizijas/noslegtas-revizijas/vai-nodoklu-atlaides-un-atvieglojumi-sasniedz-tiem-specified-mercs

and evaluated through appropriate decisions on the withdrawal, change or introduction of new incentives. In the light of that audit report, an information report entitled '*Evaluation of tax benefits in force*' was prepared213, which, in the light of the findings and recommendations of the State Audit Office's audit, provides an assessment of the initial situation and prepared a plan to define the objectives and performance indicators of the tax relief in force, which includes both tax advantages for which the objective and the indicators to be achieved are to be defined and those for which the objective and the indicators to be achieved cannot be defined. At present, the ministries are continuing their assessment of the exemptions and exemptions and, if necessary, legislation to update or withdraw such benefits or exemptions is being brought forward.

Objectives to be achieved

Objective	FACT 2021	FACT 2022	FACT 2023	TARGET 2030
Amount of subsidies provided to fossils energy production (million) EUR)	26,2	23,6	23,6	0

III Policies and measures to achieve the objectives

measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments in millions EUR
3.4.9.1	End the State-guaranteed charge for electrical capacity installed in a cogeneration unit	KEM	2028	Within the existing budget
3.4.9.2	Review the AN rates for petroleum products and natural gas as part of the NPP in line with the revised Energy Taxation Directive	FM	2027	Within the existing budget
3.4.7.2	Apply a reduced VAT rate to the supply of wood fuels and heat	FM	2030	Within the existing budget
3.1.1.31	Assess the conditions for the application of AN to a blend of fuels and biofuels	FM KEM	2027	Within the existing budget
3.1.1.32	Introduce the polluter/user pays principle in taxation policy	SM FM	2026	Within the existing budget
3.1.3.20	Restrictions on the installation of new fossil fuel installations	Municipalities of Kem	2028	Within the existing budget
3.1.3.21	Setting progressive restrictions on the use of fossil fuels	KEM	2050	Within the existing budget

3.5. Research, innovation and competitiveness

Base Scenario I

Latvia's total R & D expenditure (R & D) in 2022 was 291 million. EUR or 0.75 % of GDP. They increased by 17.3 % compared to 2021. Business investment in R & D activities has increased by 25.7 million since 2021. EUR, or 30.8 %. Overall, the R & D financing of companies in 2022 amounted to 109 million. EUR 37.3 % of the total R & D financing in the Latvian economy. This rate lags behind in EU Member States, where entrepreneurs account for more than half of total R & D investment in GDP (2022: EU 27-1.48 %; Latvia – 0.37 %). The low level of R & D activity and capacity of Latvian entrepreneurs is largely affected by existing economic and business activity

structure – low share of high and medium-high technology in Latvia's economy.

The main national priorities, lines of action and activity level measures aimed at developing industry, promoting access to finance, innovation and exports, as well as improving the business environment,

213examined at the meeting of the CC (08/04/2021), Minutes No 32 37. §

have been set out in various policy planning documents which are hierarchically subordinate to each other and are:

1) NAP2027 – n Osshatthe largest NB contribution to Latvia's development and the improvement of people's quality of life over a 7-year period. This includes the country's development priorities, targets and investment paths, as well as planned reforms and policy changes. At the same time, the plan includes important measures to mitigate climate change and promote environmental sustainability, as well as measures for the transition to cleaner and more sustainable energy.
2) The NIPP2027 covers all sectors of the economy and sets objectives and directions for economic growth for the next 7 years, both domestically and internationally.

This policy planning document enshrines the concept of Latvia's Smart Specialisation Strategy (RIS3) for the economic transformation of the R & I strategy.

In October 2022, 5 steering groups were set up for all areas of RIS3 specialisation, with a view to engaging in a dialogue between the interested party of the RIS3 veracity cake eco-system – businesses, research organisation, policy-makers and implemented, sectoral associations, some kinds of networks, investors, universitate, etc. – to ensure the implementation of the principle of business releases in smart specialisation areas:

- biomedical, medical technologies, pharmaceuticals;
- information and communication technologies;
- photonics, smart materials, technologies and insenger systems;
- a knowledge-intensive bioeconomy;
- smart energetics and mobilitate. 214

On RIS3 "Smart Energy and Mobility"

The RIS3 "Smart energetics and mobilitate" strategy is effective in channelling the European, national, regional and privatised financial actvitatem, which effectively strengthens the research and innovation spears of energetics and mobility of the Nacional. It also includes related industries and infrastructures: ICT, transport, benvior, rough and circular economy issues. The following R & I strands are defined: (1) Restoring RES, improving existing solutions and competence for new solutions, (2) RES, number of udenraz, technologies will develop ana, (3) energetics introducing circular economy principles, (4) promoting smart energy systems and promoting automation, (5) making available bio-based sources of sustainable energy sources in Latvia, (6) sustainable energy for transport, including: Production of SAF, (7) deployment of innovative mobility solutions, (8) infrastructure improvement needed for the use of low- and zero-emission vehicles, numbering/refuelling infrastructure, (9) data governance and ICT solutions for power generation/paterina management, innovative mobility solutions, (10) competence of energy demand management solutions, using the assets and groups connected to the grid, (11) the competence of the maximisation of intelligence and maslining solutions to the power system will provide assurances for the management of the energy system (optimisation algorithms), (12) standardising the communication management of the installation connected to the electricity system (electrical cells, heat shields, solar panel inventors, etc.).

3) ZTAIP2027 - defines science and technological development policy for the period 2021 onwards. — 2027, setting out the guiding principles, objectives, priorities, lines of action and deliverables and ensuring the continuity of these policies.

Normative framework

Latvia has a number of laws and regulations that promote research and development (R & D) and the implementation of innovation projects and initiatives, including with a focus on energy and climate. Some of the laws, regulations and regulations include:

1) The law to support start-ups' activities215;
2) Innovative entrepreneurship and priority projects aresupported 216 by the Green Corridor;

214https://www.liaa.gov.lv/lv/ris3-vadibas-grupas-ris3-parvaldibas-operacionalais-limenis
215https://likumi.lv/ta/id/287272-jaunuznemumu-darbibas-atbalsta-likums
216https://likumi.lv/ta/id/350569

3) The Law on ScientificActivities217;
4) The ClimateLaw 218 and the EnergyLaw219.

Aid framework

Between 2021 and 2029, the EM will provide substantial support of EUR 1.6 billion in investments under the RRF and the MFF to boost productivity, inequality reduction, energy efficiency, digitalisation, exportability and competitiveness.

The R & D support programmes foresee that R & D and innovation investments are concentrated in the RIS3 areas defined in Latvia. It is estimated that on average 20-25 % of all digital transformation and productivity projects will contribute to the development of energy and climate, such as the development of technologies to reduce emissions and energy, the creation of green innovations, the deployment of key solutions for the circular economy, the efficiency of resources and raw materials and production productivity.

Support is also available for national and EU-level support programmes for economic operators in reducing energetic resources Main and climate change, such as the Investment Fund (Altum), the Investment Fund (Altum), the IF, the LIFE programme, CEF, the Horizon Europe under the leadership of the European Climate, Infrastructure and Environment Executive Agency (CINEA). Latvia coordinates KEM sos finans u instruments.

Public procurement can be one of the instruments for development, growth and innovation that can meet the needs and demands of the public sector. In Latvia, public procurement accounts for 11 % of GDP on average. In 2022, around 4.3 billion was spent on public procurement. EUR, which shows the great potential of public procurement to drive development in different sectors, would help stimulate the market of the future and address pressing societal challenges. By strategically applying appropriate procurement mechanisms (innovative220 and green procurement), public buyers are expected to drive innovation, boost urban growth and the well-being of citizens, and ultimately improve the productivity, quality and accessibility of procured services. Support instruments will be developed to promote a wider use of innovation procurement.

The total R & D funding of the ERM will be concentrated on investments: 1) R & D in human capital development (111 million) EUR), where amendments to the Law on Higher Educationals in 2024 introduce a new model of doctoral training, including by changing the funding modalities and ensuring the remuneration of doctoral students during their studies, as well as providing for a single proposition process, and the new model will provide significantly higher remuneration for doctoral students and integrate research more closely into doctoral training, ensuring more targeted training of young professionals in all fields of science, while the new model will improve doctoral management through the introduction of doctoral schools; (2) R&A international cooperation (156 million) EUR), studies for economic transformation (42 million) EUR).

Under the JTF with 5.98 million The EUR investment will develop a peat research platform, support the establishment of a centre of excellence through five research projects for the sustainable use of natural resources contributing to the transition towards climate neutrality, support Latvian regions to mitigate the social and economic impacts of the transition, and promote cooperation between industry science universities, scientific institutions and economic operators to increase capacity and meet regional needs.

The main instrument for Latvia's international research and innovation cooperation is Horizon Europe (2021-2027), where inclusive and just green and digital transitions are mainstreamed both horizontally and in thematic clusters such as Climate, Energy and Mobility and Food, Bioeconomy,

217https://likumi.lv/ta/id/107337-zinatniskas-darbibas-likums
218https://tapportals.mk.gov.lv/legal_acts/7987de45-93fd-45e3-ac4c-948251c622d9
219https://tapportals.mk.gov.lv/legal_acts/7987de45-93fd-45e3-ac4c-948251c622d9
220 https://www.iub.gov.lv/lv/inovativais-iepirkums

Natural Resources, Agriculture and Environment.

In the thematic cluster 'Climate, Energy and Mobility', Latvian partners have so far participated in 37 projects (total 15.74 million). EUR) and under the thematic cluster 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' for 48 projects (total 15.04 million. EUR).

As well as FLPP funding has increased in recent years, reaching 28.6 million in the 2024 tender. EUR, and projects that develop tools for anticipating and forecasting factors related to energy and production, mobility, become significantly more visible. Increased specialisation in electrical engineering, electronics, information and communication technologies in energy and technology applications. At present, climate and energy information and adaptation tools are also being developed in the context of economic sectors.

2018 — 84 projects in the field of the knowledge-intensive bioeconomy have been supported in FLPP calls in 2023 (total 19.9 million). EUR) and 26 projects in the field of smart energy (total 6.14 million. EUR). Currently, projects under the FLPP are being implemented under the following topics related to climate, energy and green technologies:

- Contactless nanothermetry;
- Exploration of alternative biomass for energy;
- Sustainable strategies for the restoration of peat extraction sites;
- Fast response time and high efficiency GaN transistor-based DC motor converter with double power supply;
- Modelling for changing future electricity markets;
- Advanced wireless energy reconversion techniques;
- Innovative emergency mode management for low inertia power systems with high RES shares;
- A printed biopolymer device for mechanical energy production;
- A framework for the assessment of flexibility indicators for district heating;
- Climate and energy policy.

Human capital development

The MoE is currently developing a 'Human Capital Development Strategy 2024. —2027" (hereinafter referred to as the Strategy), the overarching objective of which is to ensure coordinated management of human capital issues by facilitating the adjustment of labour supply to future labour market needs.

Five thematic lines of action have been defined for the strategy and endorsed by the Human Capital Development Council, with two horizontal components: human capital management and data- and evidence-based decisions and analytics:
1) STEM education and skills, including increasing employers' participation in human capital development in STEM fields, strengthening quality and governance, improving the system of financial support for students in STEM fields and providing teaching materials, including STEM learning materials;
2) expanding the labour market, including promoting regional labour mobility and access to housing, motivating and integrating inactive groups into the labour market, creating a healthy working environment;
3) attracting skilled workers, including improving labour immigration processes and attracting Latvian and foreign students studying abroad;
4) the supply and quality of adult learning, skills, including the development of a culture of adult learning in society, and the provision and quality of support for skills development and reskilling of workers;
5) support for the capacity of entrepreneurs, including access to support for entrepreneurial performance and learning opportunities to build knowledge capacity.

For energy and climate, STEM skills are a prerequisite for highly qualified professionals. The measures included, including developing methodological support materials for educators in STEM subjects in schools, including the theme of climate change mitigation and adaptation, increasing public funding for STEM interest education programmes and increasing the number of annual STEM graduates, aim to increase the overall share of STEM students in Latvia from 25.2 % (2022) to 30.4 %

(2027). It is also planned to increase the share of ICT specialists in employment from 4.4 % (2023) to 8.4 % (2027).

It is planned to promote cooperation between the public and private sectors and to find different solutions to address labour-related challenges in the labour market of the future, including reskilling and upskilling. For example, the EM is one of the participants in the Latvian education accelerator initiated by the World Economic Forum. Measures to promote the quality of education at various levels, including lifelong learning, vocational and general secondary education, higher education and vocational qualifications, will be developed in cooperation with more than 50 companies.

On reskilling, evaluations are being carried out of the most effective result-based support tool for upskilling and reskilling of workers in cooperation with employers.

To improve existing public-sector adult learning programmes, a micro-based monitoring tool will be developed to assess the effectiveness, return and impact of adult learning programmes on the labour market and help make more informed and evidence-based decisions.

At the same time, closer cooperation with the NEP, including on climate and energy, is planned. NEP is planned to be involved in validating industry targets and labour force projections, supporting the identification of new skills and assessing the process of obtaining sectoral qualifications, thereby helping to adapt both lifelong learning and formal education to the needs of the sector.

Initiatives

Investment in HE is currently growing rapidly worldwide and also in Latvia. New solar and wind farms are being developed and electricity production is growing, which inevitably puts additional pressure on the search for efficient and economically viable solutions for transforming, transmitting and storing the energy produced. And this development phase will create a new value chain in Latvia based on affordable, cost-effective and green energy.

In view of the upcoming offshore wind projects in the Baltic Sea, energy storage solutions will be essential. When considering the potential of hydrogen and the solutions it offers, Latvia focuses on this period. The production of hydrogen and its derivatives (e-methanol, green ammonia, biofuels, etc.) is not only a way of ensuring Latvia's self-consumption of electricity, but also an opportunity to start exporting green hydrogen.

In addition, the service ecosystem linked to HE is growing. This includes tasks such as the maintenance of wind farms, the development of electrolysers and the supply of hydrogen to various sectors such as public transport, heating and production. Furthermore, it is important to highlight in the RES ecosystem the potential investments and services that Latvian ports can offer to the ELWIND project and potential future offshore wind farms.

The development of green hydrogen marks an important step in global efforts to combat climate change. This underlines Latvia's commitment to a cleaner, more sustainable future, providing new opportunities for our economy, environment and society. Latvia is a partner ***country for*** the BalticSeaH2 project. The project aims to create a large-scale cross-border hydrogen valley (ecosystem) around the Baltic Sea. The project's central hydrogen valley is located in South Finland and Estonia. The area between Finland and Estonia is optimal for the development of a cross-border hydrogen market model. Part of the necessary infrastructure – natural gas pipelines, electricity grids and active maritime traffic between Tallinn and Helsinki – already exists in the Gulf of Finland. The project will also address the reduction of CO_2 emissions from existing maritime traffic.

SAF plays an increasing role in air transport and in achieving climate neutrality objectives. As in the world, the factors of green energy and climate neutrality in Latvia become decisive for the functioning of a sustainable aviation sector. Given that Latvia plays a leading role in the aviation sector in the Baltic, especially in passenger transport, the interest of the aviation sector in the production of SAF in Latvia is obvious. These solutions also require green hydrogen. The MoS has set up a SAF working group to gather the most appropriate technological solutions for SAF production in Latvia and assess

the potential energy capacity of the SAF plant, identify green energy sources. In 2023, the EC approved the EU Technical Support Instrument (TSI 2024) project application submitted by LV for a study on SAF production opportunities in Baltia.

The LCS ensures Latvia's participation in a number of international partnership projects that have an impact on the development of climate neutrality, smart energy and green technologies. Latvia participates in partnerships on the following topics: sustainable blue economy, transformation and innovation of energy systems, managing urban transformation for a sustainable future, Nordic research cooperation, where sustainability plays a key role in thematic names.

Research capacitate, i.e. the number of knowledge workers (knowledgeers, science technicians and personal services) in Latvia (full-time equivalent expression – PLE) was 6 559 in 2020, representing 0.77 % of Latvia's total employment, almost half the smallest generation of the EU environment (1.56 %)221. Of the Latvian Knowledge Personal Number (PLE), 774 or 12 %, is related to research in the Energetic Union's priorityarea222.

Between the 50 resistant countries of the European Patent Office, 2022 after the number of inhabitants created by patent activitates, Latvia ranks 36th with 11.7 patent applications per 1 millioninhabitants223. 2018 — 2021 European Patents bureau 224 of99 patent applications by Latvian residents 22 patents registreti related to smart energetics and clean techologies jomu 225 (EV, aparati, energetics; environmental technologists; poets, suckles, turbines)226. Registret patents for innovative biomass combustion plant, biofuels, vein and solar energy technology.

221https://ec.europa.eu/eurostat/databrowser/view/rd_p_persqual11/default/table?lang=en; https://ec.europa.eu/eurostat/databrowser/view/rd_p_perslf/default/table?lang=en
222National Scientific Performance Information System (NZDIS) Register of persons elected to academic positions in scientific institutions
223https://www.epo.org/about-us/annual-reports-statistics/statistics/2022/statistics/patent-applications.html
224 European Patent Office, https://www.epo.org/
225https://new.epo.org/en/statistics-centre
226https://new.epo.org/en/statistics-centre#/customchart

Objectives to be achieved

Target	FACT 2021	TARGET 2030
share of innovative active enterprises (%) of all enterprises)	[32]227 (2020)	> 40 227 228
global Innovation Index (World Place)	38	30
European Innovation Review (heading in the	25	20
Investment in R&I (% of GDP)	0,74 229	> 1,7
Private sector investment in R & I (% of R & I investment)	33	40

III Policies and measures to achieve the objectives

Measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
				need	marked	sources
3.5.1	Carry out a study to analyse the potential of using RES in Latvian territorial waters	KEM	2024 2026	0,1	0	VB
3.5.2	Promoting the digitalisation of business, including through support programmes	EM	2030	24,3	24,3	RRF
3.5.3	Implement the Practical Orientation Studies	IRM	2030	50,1	50,1	MFF VB
3.5.4	Implement new product development (green products)	EM	2030	40	40	RRF
3.5.5	Implement the NCP "Decision Support Framework for Climate Neutrality Objectives"	KEM IRM	2024-2026	1,25	1,25	VB
3.5.6	Implement the energy research programme	KEM	2030	4,3	4,3	VB
3.5.7	Conduct a study on the feasibility of adapting the natural gas transmission system to the injection of	KEM	2024-2025	0,1	0	VB PF
3.5.8	Carry out a study on adapting the FSG to hydrogen storage	KEM TSOS	2024-2025	0,1	0	VB PF
3.5.9	Conduct a study on the feasibility of nuclear energy	KEM	2024-2026	1.0	0	VB
3.5.10	Conduct an assessment of sustainable aviation fuel (SAF) production options in the Baltic region with a view to preparing investor support	SM EM	2025	0,4	0,4	MFF

227https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__ENT__IU__IUS/IUS010/table/tableViewLayout1/
228NIPP
229https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__IZG__ZP__ZPR/ZPR030/table/tableViewLayout1/

Measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
				need	marked	sources
	the necessary "road map" to start production of SAF in Latvia					
3.5.11	Studies to improve GHG inventories by introducing Tier 2/Tier3methods in line with the guidelines of the Intergovernmental Panel on Climate Change, as well as improving activity data and GHG projections	KEM MOA COPPER	2030	0,05	0,05	EKII
3.5.12	Carry out pre-commercial research for the production of synthetic methane in Latvia	Researchers	2030	ND	ND	VB PF
3.5.13	Carry out a study aimed at finding solutions to replace peat substrate – extraction of new and efficient substrate raw materials	MOA EM KEM	2025	ND	ND	VB PF
3.5.14	Digitise the assessment of the potential of solar deployment in the building	KEM EM LEGMC	2025	0,3	0,3	VB
3.5.15	Map the HE acceleration area and develop dynamic cartographic material	KEM EM FOR MOA LVĢMC	2025	0,2	0,2	VB
3.5.16	Develop CSAS electrification potential and opportunity cartographic material	TSO DSO CSAS operators	2025	0,3	0	VB
3.5.17	Carry out a study for the creation of regional micro grids and energy islands	Researchers TSO DSO CSAS operators	2026	1.0	0	VB
3.5.18	A study on the amount of raw materials available in Latvia that have the potential to be used as transport energy (including road transport, shipping, aviation);	KEM EM	2025	0,1	0	VB
3.5.19	Study on the possibilities of retrofitting first-generation biofuel plants to adapt them to advanced biofuel production	KEM EM	2025	0,1	0	VB
3.5.20	Set up pilot projects for the start-up of hydrogen and e-methanol production	EM ECONOMIC OPERATOR I	2030	1.0	0	VB

Measure code	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Investments (million EUR)		
				need	marked	sources
3.5.21	Single point of contactfor net-zero emissions230technologies, semiconductors and critical raw materials	EM LIAA	2024	1.0		VB
3.5.22	Develop national net-zero technologies for export production	EM KEM LIAA	2030	ND	ND	ND
3.5.23	Developing skills for net-zero technologies	RTU IZM EM	2030	ND	ND	ND
3.5.24	Green Corridor for Priority Projects	EM LIAA	2024	Within the existing budget		
3.5.25	Creation of a regulatory sandbox or dedicated regulatory environment	EM LIAA	2024	Within the existing budget		
3.5.26	Supporting digitalisation in the areas of energy and climate	EM	2027	183,5	183,5	
3.5.27	Support for productivity for energy and climate development	EM	2027	543,6	543,6	
3.5.28	Develop peat research platform	IRM	2027	5,98	5,98	JTF VB

3.5.1. As part of the**study analysing the RES potential of Latvian territorial waters**, the use of marine heat in coastal settlements, as well as the use of marine biomass (algae, water grass, etc.) for biofuel/biogas and energy production, wave, tidal, etc. potential for electricity generation will be analysed.

3.5.2. Latvia envisages measures in the RRF plan, as well as in the 2021-2027 programming period, aimed at **supporting entrepreneurship to foster the digital transformation**, which will also contribute to the implementation of the Green Deal. By 30/06/2026, companies will be able to apply for support for the digitalisation of their business processes, the development of new products and services, as well as the testing and purchase of technological equipment.

3.5.3. The research programme shall231 have practical orientationsfor the implementation of commercialised R & D projects.

3.5.4. There are 8 competence centres under the competence centres action, including: Competence Centre for Smart Engineering, Transport and Energy232, which provides support for experimental and industrial research. A new support programme for **technology transfer isunderway233.** Its aim is to ensure that funding is made available to economic operators for the development and commercialisation of new products/services, research projects, in order to contribute to increasing the share of innovative operators in the economy by creating links between economic operators and public research institutions, which would facilitate the direct transfer of knowledge and become a catalyst for long-term, more in-depth cooperation between the two parties, thereby contributing to the objectives of Latvia's Smart Specialisation Strategy.

3.5.5. The objective of the NCP 'Decision-making support framework for climate neutrality objectives' is to establish a decision-making support framework based on information technology

230 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/green-deal-industrial-plan/net-zero-industry-act_lv
231https://www.cfla.gov.lv/lv/1_petnieciba-tehnologiju-attistiba-un-inovacijas
Competence Centre for232 Smart Engineering, Transport and Energy, http://www.vitekc.lv/
233https://vktap.mk.gov.lv/legal_acts/headers/9cf5a8bd-526e-42be-8038-ac803419abf3

solutions to achieve climate neutrality and energy objectives by 2050, which includes modelling alternative scenarios for achieving the target, evaluating and optimising the socio-economic impacts of the results, justifying economically, socially and environmentally more cost-effective solutions to reduce GHG emissions and increase $CO2_{removals}$.

3.5.9. The study on the feasibility of using nuclear energy provides for an analysis of the possibilities for using this technology in Latvia. The conduct of this study is essential for sound long-term strategic decision-making on energy sector development issues, including in the light of radically opposing views on the use of this technology.

3.5.10. As part of the**study on sustainable aviation fuel production options**, an assessment will be made of the production options for such fuel in Latvia, including definition of market demand, export opportunities, production technology, preliminary cost-benefit analysis, identification of project participants.

3.5.14. The digitisation of the national urban buildings sector (the development of a three-dimensional material) will be carried out as part of the digitisation of the solar technology deployment in the building and the development of detailed and dynamic solar energy potentials (layers) for national cities, thus providing building owners, real estate managers and developers with sufficient dynamic solar energy potential mapping material for buildings that is dynamic enough and where historical information would also be available to assess the development of solar energy potential.

3.5.15. As part**of the mapping of HE Acceleration Areas and the development of dynamic cartographic materials**, a wide range of cartographic material will be produced in several map layers to combine the following layers of maps: annual monitoring of wind speed, rhythm and probability of recurrence at different atmospheric levels; areas of existing and planned wind farms; annual monitoring of direct and cumulative solar radiation on different orientated surfaces of solar radiation, calculation of the climate norm; areas of existing and planned solar parks; areas used for agriculture; agricultural land of national importance; forested areas; densely populated areas (cities); biogas & biomethane producers; landfills; contaminated and potentially contaminated sites; special areas of conservation; Natura2000 sites; waste water treatment installations. Accordingly, this cartographic material should then be used to identify areas where HE technologies could be developed and decisions can be taken for specific technologies to be developed in specific areas.

3.5.16. In order to implement the CSAS electrification potential and the cartographic material development activity, it is necessary to combine map layers on the location of boiler houses, cogeneration units, different HE electricity technologies, as well as the infrastructure location of TSOs and DSOs and existing and available capacity in that infrastructure. This would make it possible to assess the options for the electrification of CSAS, i.e. where CSAS can already be electrified today and where such electrification requires capacity reinforcement or upgrade.

3.5.17. The activity of carrying out a**study on the establishment of regional micro grids and** energy islands is related to the strengthening of Latvia's energy security and efficient generejoso capacity and the need for pasteurs in the Latvian regions. The study will include regional autonomous energy production areas and a set of consumables that energy islands, where the interaction between the autonomous energetics and the energy storage facility located in the regions would be small CES, biogases and biomass cogeneries, VES, CERs, etc. are built. The principles of operation of such energy islands, their interactions and stable crytteries will be captured, control algorithms are established, benefit-cost analysis are carried out, and alternatives to a non-partridged energy year will be provided. The study will include the creation of a smart grid management system, ensuring a confection of energy between the am generejosam power and patereals used by some RES, including micro-network control and microgenerie power interaction management. As part of the study, the guidelines shall be extracted with action-shaped scenarios and the technical economic evaluation of each scenario.

3.5.22. The action will**include a map of energetic security and RES production cela and action plan**

(ensuring the availability of energy for export-oriented production) and the National Net-Zero Technologies strategy for export-oriented production as part of the activity.

3.5.23. As part of the**Net-Zero Technology Skills Development** Action, it is envisaged to set up a Udenraz Centre of Excellence and ensure the development of skills, as well as to analyse and promote the development of other skills, match the academia of the Net-Zero Technology Regulation (consortia that develop relevant educational programmes).

3.5.24. Within the**framework of the Green Corridor initiative, priority projects** shall ensure the coordination of the activities necessary for the implementation of these projects and the provision of the relevant services as a matter of priority and within a time frame. The Green Corridor is available for priority projects corresponding to the 'Smart Energy and Mobility' RIS3 area, as well as the improved framework, may result in projects that will implement zero-emission technology investment projects as a priority project.

3.5.25. As part of the**establishment of the regulatory sandboxes**, the conditions and modalities for applying, approving, ending a specific dedicated regulatory environment will be developed, providing a clear framework for economic operators and scientific institutions to test and test innovative products, technologies and services for the commercialisation of relevant solutions.

3.5.26. As part of the action to support**digitalisation in the fields of energy and climate**, financial instruments for digitalisation, support for the digitalisation of processes, the discovery of new products and services and the development of digital skills, as well as support for the establishment of a European Centre for Digital Innovation and Regional Hubs, whereby 20-25 % of all projects are effective in contributing to energy and climate development.

3.5.27. Within the framework of the**action to support productivity in the field of energy and climate** development, support (financial instruments) is to be provided to MVK's business development and R & D for new products, technologies and services, where 20-25 % of all projects are effective in contributing to energy and climate development.

3.5.28. The development of the**peat research platform** is to be implemented under the JTF. The outputs to be achieved under the action are: (1) the creation of a supported centre of excellence through five research projects contributing to the transition towards climate neutrality for the sustainable use of natural resources; (2) support for Vidzeme, Latgale, Kurzeme and Zemgale to mitigate the social and economic impact of the transition; (3) cooperation between industry science universities, scientific institutions and economic operators for capacity building and meeting regional needs under the JTF has been encouraged.

3.6 Adaptation to climate change

Base Scenario I

Global climate observations over a period of more than 100 years show that climate change is changing. As in the world, changes in climatic conditions have been observed in Latvia over an extended period of time, both in terms of average values of meteorological parameters and changes in their extreme values.

2022 was warmer than the climate norm, a situation that has been observed for the tenth consecutive time. It is particularly important to highlight the summer, which became the 3 rd warmest in the history of meteorological observations. The average temperature in Latvia in 2022 was + 7.3 °C, which is 0.5 °C above the climate standard (1991-2020), becoming the 12nd warmest in the history of observations (since 1924)234. The last year, with Latvia's average air temperature of + 7.8 °C, became the 3 rd warmest in the history of observations, divided by 2015. Furthermore, it was the 11st consecutive year, warmer than the standard climate standard. In particular, September, which was 3.5 °C warmer than the norm, became the warmest September in the history of observations.

234https://videscentrs.lvgmc.lv/jaunumi/198380174

Rainfall in 2023 was higher than the norm, although May was the dryest, and June was the second dryest month in observation history. By contrast, the beginning of the year was wet, with January becoming the 2nd most humid in the history of observations, and in the second half of the year, the total rainfall was considerable over several months, with August and December being the 4th most wetest in the history of observations in October 5.

2023 also leaves the day when the maximum wind gust reached a storm force of at least 20 m/s. The most significant bleak in 2023 was observed on 7 August, with wind gusts in Dobelé reaching 32.6 m/s and large grain Kroes causing great damage.

An analysis of past climatic conditions, as well as future climate change scenarios, shows that climate change trends will continue throughout this century. In addition, extreme values of climatic parameters will be most affected by the most significant changes, with unusual and extreme weather conditions in Latvia becoming more frequent in the future. Changes in climatic parameters and indices over time have an impact not only on natural capital (species, habitats, ecosystems) but also on the health, well-being, safety and economic activities of the population. The most significant risks identified in Latvia are changes in seasons, including the growing season; fires; the proliferation of pests and pathogens, tree diseases, displacement of native species, introduction of new species; the spread of respiratory systems and infectious diseases; heat flue; rainfall floods, windstorms; power disorders; increase in run-off, hydropower fluctuations; defrost, malle, desiccation; eutrophication; infrastructure damage, overheating of equipment; reduction of water run-off during the summer season.

TheTSCG P235has been prepared taking into account the experience of different European countries in the field of climate change adaptation risk management and climate change adaptation planning. The plan is developing a climate change adaptation cycle in Latvia, which provides for an assessment of climate impacts, vulnerabilities and risks; adaptation planning; the introduction of adaptation measures; monitoring and evaluation. The development of the LACPP is based on Latvia's analysis of climate change to date and climate change scenarios for the period up to 2100, as well as assessments of the impacts and risks of climate change in Latvia in six areas such as construction and infrastructure planning, civil protection and disaster management, health and well-being, biodiversity and ecosystem services, agriculture and forestry, tourism and landscape planning.

The LVĢMC has developed new climate scenarios for Latvia up to 2100, based on236the most recent GHG emission scenarios237adopted by the IPCC Expert Group in the Sixth Assessment Report (AR6). The current and future climate change tool developed reflects past and future climate change in Latvia and municipalities, as well as coastal change classes and annual maritime coastlines. The user of the tool is able to view information on the different parameters characterising climate change and their indexes for annual and four seasons (winter, spring, summer, autumn) and select the municipality

235https://likumi.lv/ta/id/308330-par-latvijas-pielagosanas-klimata-parmainam-planu-laika-posmam-lidz-2030-gadam
236 https://klimats.meteo.lv/klimats_latvija/klimata_riks/
237https://www.ipcc.ch/report/sixth-assessment-report-cycle/

or national city area they want (by clicking on it on the map or in the top menu bar). The maps can select three different climate change scenarios (SSP1-2.6 – small climate change, SSP2-4.5 – medium climate change and SSP3-7.0 – significant climate change).

Objectives to be achieved

Objective
Reduce the vulnerability of Latvia's people, economy, infrastructure, construction and nature to the impacts of climate change and promote the exploitation of the opportunities created by climate change.

III Achievement of the objectives of policies and measuresi[238]

No	**Action to be taken to implement the action**	**Institution involved in enforcement**	**Execution deadline**	**Financing sources**
3.6.1	The early warning system is responsive, regularly updated and provides high-resolution modelling to predict the effects of extreme weather events	Varam MoI	2024	VB MFF PF
3.6.2	Preventive measures to protect human health and life from the adverse effects of climate change	VAR VM EM IRM LM SPCC	2030	VB PB PF MFF
3.6.3	Strengthening economic sectors against climate change risks and extremes	VARAM EM KEM FM	2030	VB MFF IFIS
3.6.4.	Protecting economic resources in forestry, agriculture and fisheries from the adverse effects of climate change	MOA COPPER	2027	VB MFF
3.6.5.	Ensuring the tourism sector adapts to climate change	KM VARAM EM	2024	VB MFF
3.6.6	Use of green infrastructure to mitigate climate risks	COPPER, MEM SM MOA VM	Permanent	VB MFF
3.6.7	Ensuring and adapting engineering systems and infrastructure to climate extremes	COPPER MOU EM KEM	2025	VB MFF
3.6.8.	Adapting buildings and buildings to the impacts and pressures of climate change	EM	2024	VB MFF
3.6.9	Mitigation of negative impacts of climate change on ecosystems and conservation and restoration of species biodiversity	COPPER	2030	VB MFF

[238] Detailed information on measures and specific actions to be taken are included in the COPP

No	Action to be taken to implement the action	Institution involved in enforcement	Execution deadline	Financing sources
3.6.10	Establishment of a control system for the containment of alien invasive species, pests and pathogenic organisms	COPPER	2024	VB PB PF MFF MFF
3.6.11.	Nature (of which: Protecting the values of Baltic Sea coastlines and cultural landscapes from the adverse effects of climate change	COPPER	2027	VB MFF IFIS
3.6.12.	Establishment and maintenance of a climate change adaptation monitoring, reporting and evaluation system	Varam KEM IeM	Permanent	VB NFI MFF
3.6.13	Enhancing the potential of science and research to implement policies on climate impacts and risks, vulnerabilities and adaptation to climate change	KEM IRM	Permanent	VB MFF IFIS
3.6.14	Integrating climate change projections and risk mitigation solutions into spatial development planning and sectoral policies	KEM COPPER	2027	VB PB MFF NFI MFF

Additional information on the necessary funding and specific tasks for the implementation of the measures is set out in the LACPP.

4. IMPACT ASSESSMENT OF PLANNED POLICIES AND MEASURES

4.1. Energy consumption projections Target Scenario

In the target scenario, total and final energy consumption in 2 030 are projected to be 10.3 % and 10.1 % lower than 2021 respectively, reaching 46 877 GWh and 42 433 GWh respectively. The developed Target Scenario reduces the total consumption of all fossil energy sources and solid biomass fuels, except for solid fossil fuels. The largest decrease is projected for the consumption of natural gas and petroleum products. The largest increase in RES consumption is projected for solar and wind energy, taking into account the implemented support programmes and solar projects implemented, as well as the planned high-capacity wind farms.

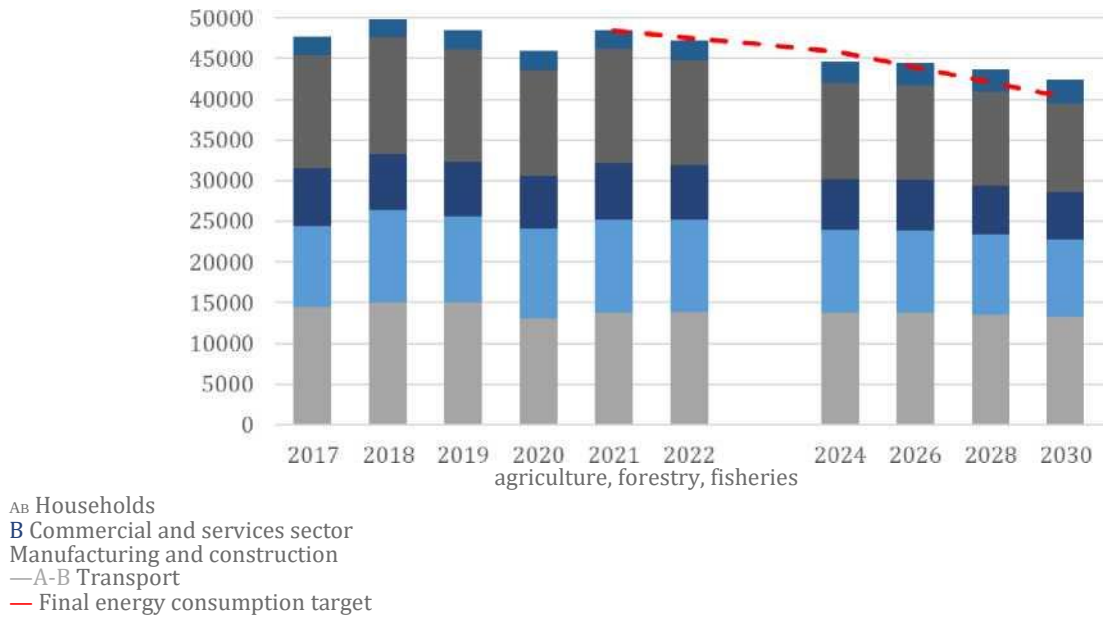


Figure 14: Final energy consumption and its target (Objective scenario)[239] [240] (GWh)

Reduction in final energy consumption 2021. — 2030 is forecast for all sectors except agriculture, forestry, fisheries: 25.8 % increase where the highest the decrease is forecast for households and for the commercial and services sectors, mainly due to energy efficiency improvement measures of 21.9 % and 16.3 % respectively.

4.2. RE Development Forecasts

Considering the measures planned in the Plan and taking into account the conditions and targets of mandatory EU legislation, the share of HE in final energy consumption in the Target scenario will increase to 62 % by 2030, including if the targets in the transport sector are fully met (see Chapter 3 for details)

Figure 15: AE volume (left-hand scale, GWh), share and target (right axis, %) (Objective scenario) [240]

In view of the modelling results, the highest contribution to increasing the share of AE is the increase in the share of AE in individual heating and the CSA, while increasing the share of AE

239FEI
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in transport, which makes a significant contribution to Latvia's non-ETS objectives, contributes less to the overall RES share target, taking into account Directive 2018/2001 7 and 25. — The conditions for calculating the percentage laid down in Article 28. While increasing the share of renewable electricity makes the least contribution to the overall RES share target, it makes a significant contribution in the buildings, industry and transport sectors where the amount of renewable electricity consumed is calculated taking into account the share of national renewable electricity. According to the modelling results, increasing the share of AE above 60 % would require a rapid increase in the share of AE in the CSA above 70 %.

In the target scenario, the share of renewable electricity increases significantly, rising from around 51 % in 2021 to 100 % in 2030, provided by a significant increase in solar and wind energy of 297 and 30 times respectively. In view of the electrification of the economy and, in particular, of the heating and transport sectors, an increase of 14.5 % of electricity consumption is projected.

In the period to 2030. The target scenario predicts that the share of AE in the CSA will increase to 68 %, which is explained by the implementation of medium intensity programmes, moving from the use of natural gas to the use of solid biomass fuels in MSW. At the same time, the share of HE in heating (outside CSA) will increase by more than 10 percentage points to 68.1 % in 2030, taking into account the envisaged support programmes for individual heating in the industrial, commercial and public sectors and households and the measures taken by households outside the support programmes, such as the installation of heat pumps, the use of solar technologies for heating, etc. and improving energy efficiency in households. Taking into account activities in individual heating, the total share of AE in heating will increase by around 11 percentage points to 68.2 %.

In the target scenario, fuel suppliers could reach 30.3 % (with the multipliers set out in Article 27 of Directive 2018/2001) or exceed 17.5 % the actual share of renewable transport energy by setting the GHG intensity and renewable transport energy targets set out in Article 25 of Directive 2018/2001, which will significantly increase the use of advanced biofuels and RFNBOs, as well as measures to promote the use of zero-emission vehicles. That share would be achieved with advanced biofuels, RFNBOs and renewable electricity.

The target scenario does not project the achievement of the target for the share of HE in the buildings sector, but the target for the share of HE in industry and construction (and ICT) is planned to be significantly exceeded, where the increase in the share of HE in industry and construction is explained by more targeted electrification of the industrial sector. The share of AE in buildings in the Target scenario will be similar to the Basel scenario and will be around 3 percentage points higher in 2030 than in 2021. Such a slight increase is explained by the already achieved high share of HE in individual heating and/or in one or two apartment buildings and the high share of energy consumption in multi-apartment buildings in final energy consumption in buildings.

The detailed energy balance is included in the templates developed by the EC and published on the KEM website.

4.3. Prediction of the achievement of the energy efficiency target

Article 8 of Directive 2023/17917 requires a Member State to achieve new savings on 01.01.2021-31.12.2030 on an annual basis under the conditions defined in that Article. Latvia's calculated cumulative end-use energy savings target for that period is 106.28 PJ (29 522 GWh).

In order to achieve this objective, the energy efficiency and energy saving measures described in the plan are expected to be implemented. As the legal framework for the delegation of energy efficiency obligations has not yet been fully finalised, only the measures listed in the Plan are collected.

The largest contribution is expected to be achieved from fuel and electricity savings in industry. The measures include the implementation of the already planned support programmes for enterprises, the modification of the already existing framework for the imposition of obligations on major energy consumers and the setting of requirements for companies in certain sectors to carry out energy audits and measures. The second largest contribution is expected to be achieved by households, building on existing programmes for the refurbishment of apartments and private houses, for the replacement of heating installations for individual heating. In addition, it is planned to implement programmes for the installation of thermal control systems for multi-apartment dwellings, the connection of private houses to efficient CSAS and information measures. In the commercial and service sector, measures are planned to improve the energy efficiency of public bodies' buildings, impose obligations on public authorities to monitor and reduce energy consumption, as well as the replacement of heating installations in the commercial sector and the connection of buildings to CSAS.

In the transport sector, the measures include a shift in road transport (private and public) from internal combustion engines to EVs (PHEV and BEV), the electrification of rail and an increase in passenger transport by rail by reducing transport by passenger cars, as well as the optimisation of public transport and the implementation of non-motorised mobility measures.

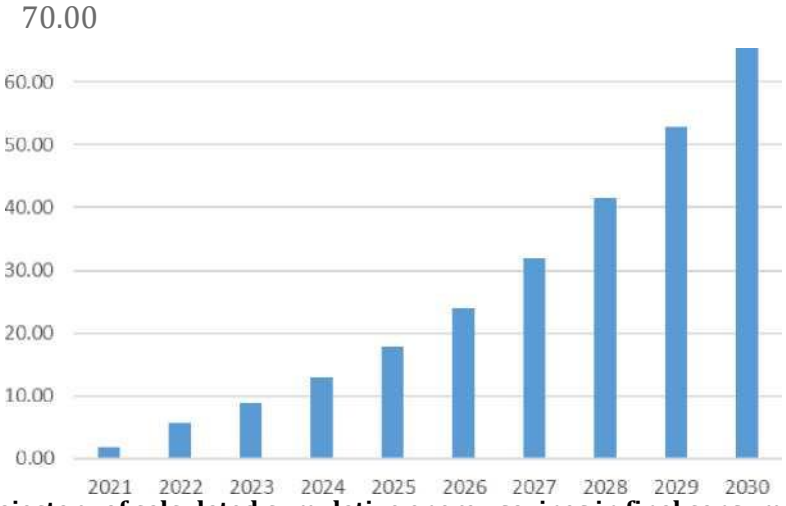

Figure 16: Trajectory of calculated cumulative energy savings in final consumption to 2030

The largest contribution to cumulative energy savings is expected from the industrial sector (40 %). The contribution of the household sector is 22 %, while the commercial and public sectors account for 20 % and the transport sector for 18 % of total cumulative savings. The estimated contribution of public bodies to total cumulative savings is around 7.5 %.

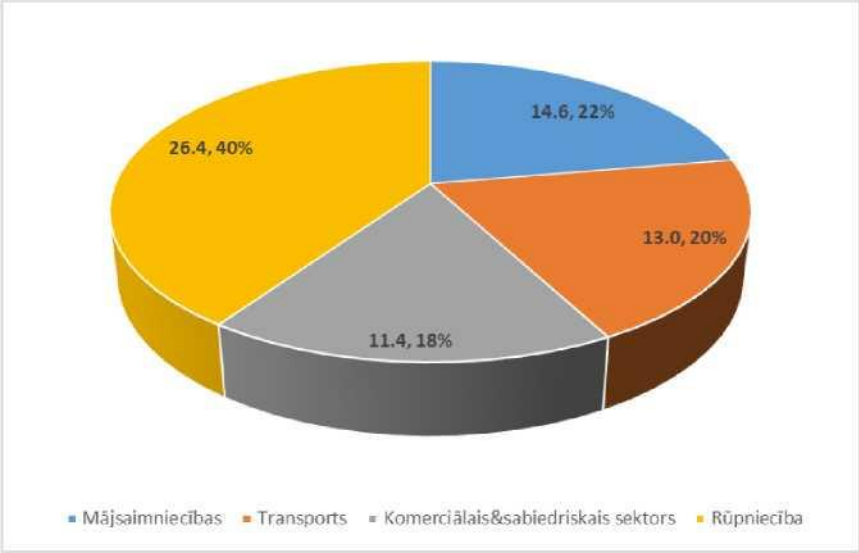

Figure 17: Estimated amount of energy savings cumulatively per 2 030 g of planned energy efficiency improvement measures in sectors (PJ and %)

The measures set out in the plan are grouped (packages) and their overall contribution to energy savings has been assessed, calculated as cumulative savings per 2030, taking into account the likely dynamics of the implementation of the measures and the lifetime of the measures to be implemented.

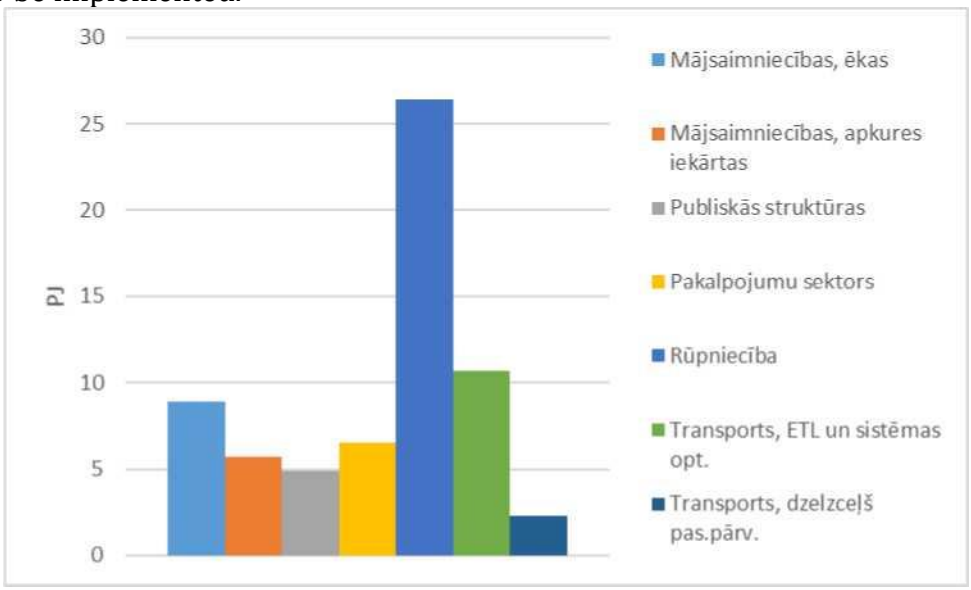

Figure 18: Estimated amount of energy savings cumulatively per 2030 by group of measures (PJ)

4.4. Energy security and internal energy market

By implementing the measures set out in the Plan, Latvia is expected to ensure that the defined energy security and energy independence targets are met by increasing self-generation, diversifying energy sources and maintaining interconnection and gas storage capacities. In the target scenario, Latvia is projected to significantly reduce its electricity imports in the coming years and become an electricity exporting country in the period up to 2030. According to TSO projections, Latvia's electricity production will exceed its consumption by 5 % to 21 % in 2030.

4.5. Projections of GHG emissions and CO2 removals

Actual values of total GHG emissions and projected GHG emissions 2023. —2030 Comparison in the Target Scenario based on the information included in the 2024 GHG inventory for 2005. Overall, there is a 26.7 % reduction in GHG emissions in 2030 compared to 2005. The biggest reduction is due to (1) the energy sector (55.3 %) due to the planned increase in the use of HE

and the wider implementation of energy efficiency improvement measures, (2) the waste and wastewater management sector (40.4 %), as the main measures are planned to increase the recycling of biodegradable waste; pilot projects to improve the efficiency of waste sorting in regional landfills, 10 % per 2035 and (3) the transport sector (21.2 %) due to increased use of advanced biofuels and electricity in both private and public road transport, increased use of non-motorised transport, thus reducing the use of passenger cars and increasing passenger transport by rail. Emissions from the agricultural sector in 2 030 are 22 % higher than the 2005 GHG emissions reduction in the Target Scenario versus baseline, a targeted afforestation of organic soils on drained agricultural land.

Calculated GHG emission projections in the Target Scenario show that GHG emissions from non-ETS activities will decrease by 20.5 % in 2030, reaching the non-ETS sector's GHG reduction target of -17 % in 2030 vs. 2005. According to the Target Scenario projections in 2030, Latvia's GHG emissions from the non-ETS sector are projected at 6 834 kt CO2eq. 2030

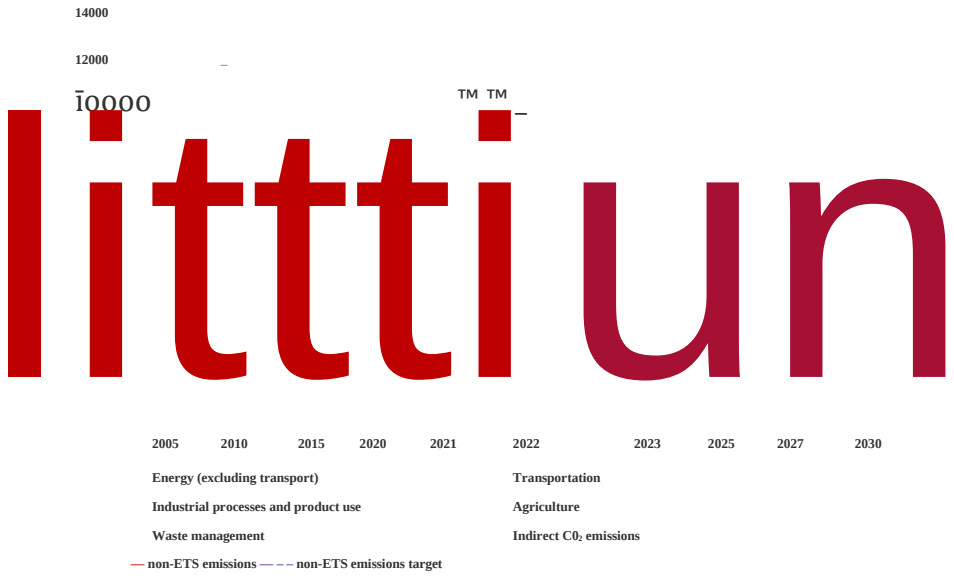

Figure 19: Total GHG by sector and non-ETS sector GHG 2005. — 2030 Target scenario (kt CO_2 eq.)

Transport accounts for the largest share of non-ETS emissions (36 %), followed by agriculture (32 %) and energy (23 %). The remaining share of non-ETS emissions is generated by the waste management (6 %) and non-ETS RPPI sector (3 %).

Calculated net GHG emission projections for the LULUCF sector in 2030.The target scenario is -2 435.98 kt CO2eq, meaning that the indicative target of -644 kt CO2eq is achieved s.241

4.1. ..., In the LULUCF sector, with increased harvesting volumes since 2015 and 2020 reduction of net CO2 removals in the forest land category. Sequestration of CO2 in forest land 2014, 2015, 2020. — In 2022, total GHG emissions from the LULUCF sector, mainly from organic soils, peat extraction and land use change (mainly deforestation) were not covered. Net removals remained in forest land until 2021, but in 2022, there are GHG emissions in forest land, mainly due to an increase in logging due to Russia's aggression in Ukraine, disruptions of existing wood supply chains and wood market shocks. The overall increase in net GHG emissions in the LULUCF sector in 2022 compared to 2021 is also explained by the decrease inCO_2 removals in the forest land category.

For the period from 2023, the Target Scenario predicts a gradual stabilisation of GHG emissions and $CO_{2removals}$ and an increase in $CO_{2removals}$ at the end of the calculation period due to the implementation of climate change mitigation measures, including the development of

241Based on the GHG inventory submitted in 2024, the target would be -2 214.77 kt CO 2_{eq}. The final target for 2030 will be determined in accordance with the 2032 GHG inventory.

processing capacity for logs currently exported in Latvia, the use of biochar on agricultural land and the reduction of GHG emissions in agricultural organic soils. Arable land in 2030 becomes a sink of CO_2 from an emission source thanks to the restoration of forest ecosystems on agricultural land with organic soils, as well as the planting of short rotation coppices and woodland strips on arable land.

The main sources of emissions in the sector in 2030 will be organic soils on forest land, deforestation activities carried out in previous years, as well as peat extraction for agricultural purposes.

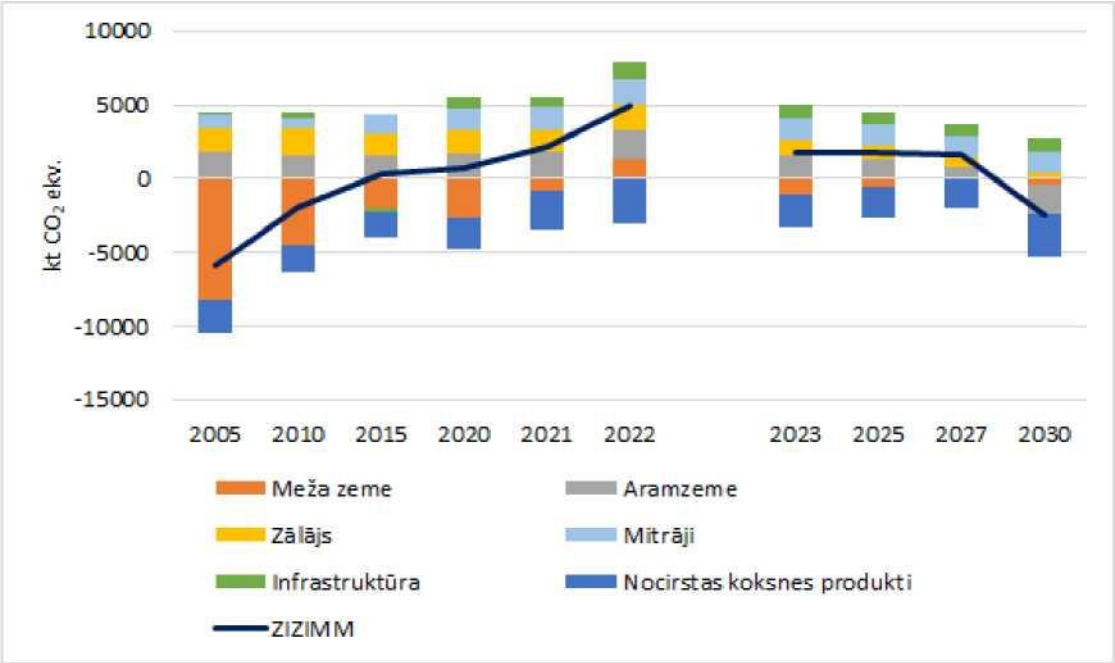

Figure 20: Historicals[242] of the LULUCF sector and projected GHG emissions and $CO2_{removals}$ in the Target scenario (kt CO_2 eq.)

The achievement of climate policy objectives in both the non-ETS sector and the LULUCF sector in 2030 can only be ensured by the full implementation of the measures planned in the Target Scenario. A detailed description of GHG emissions and CO_2 removals Target Scenario projections is provided in Annex 2.

4.6. Consistency of the production and use of fuels from forest biomass feedstocks with LULUCFtarget 242 243

Pursuant to Article 29(7a) of Directive 2018/2018 (as amended by Directive 2023/2413), Latvia must assess and ensure that the production of fuels from domestic forest biomass complies with the targets set out in Regulation 2018/841 and with the policies and measures set out in the Plan. Article 4 of Regulation 2018/841 requires Latvia to ensure that emissions do not exceed removals for the periods 2021-2025 and 2026-2030.

In the target scenario, Latvia's total GHG emissions in the LULUCF sector in 2025 and 2030 shall not exceed the commitments under Article 4 of Regulation 2018/841. The LULUCF sector achieved a net negative GHG emission balance in 2025 and 2030, i.e.$CO2$ removals in different carbon pools exceed GHG emissions. At the same time, significant GHG emission reductions are ensured thanks to planned measures to reduce GHG emissions and promote $CO2_{removals}$.

A forecast of the total volume of biomass fuel produced from round timber harvested in Latvia and imported in Latvia, while the existing quantity of imported logs remains, is shown in the

2422024 GHG inventory
243Silava

Figure below in the Target Scenario. Biomass fuel production increased in 2022, with a break in traditional wood supply chains and a temporary increase in harvesting. By 2030, biomass fuels produced in Latvia from raw materials are projected to grow thanks to the development of new woodworking and wood chemical processing capacities through the implementation of climate mitigation measures under the NECP target scenario. The forecast for an increase in the supply of wood biofuels in 2030 is not linked to an increase in harvesting, but to a decrease in log exports. The volume of biomass fuel produced from imported round timber (wood by-products) is relatively small and, with current imports, is 0.3 million m^3/year on average.

Figure 21: Forecast for the production of solid biomass fuels under Target Scenario

The forecast oftotal biofuel consumption in the Base and Targets scenarios, converted to the volume of wood, is shown in the figure below. In the target scenario, the consumption of solid biofuels in 2030 will increase to around 6.8 million $m^3$and continue to grow beyond 2030, reaching around 8.2 million m^3/yearin 2040. The Base Scenario also predicts an increase in consumption of solid biofuels.

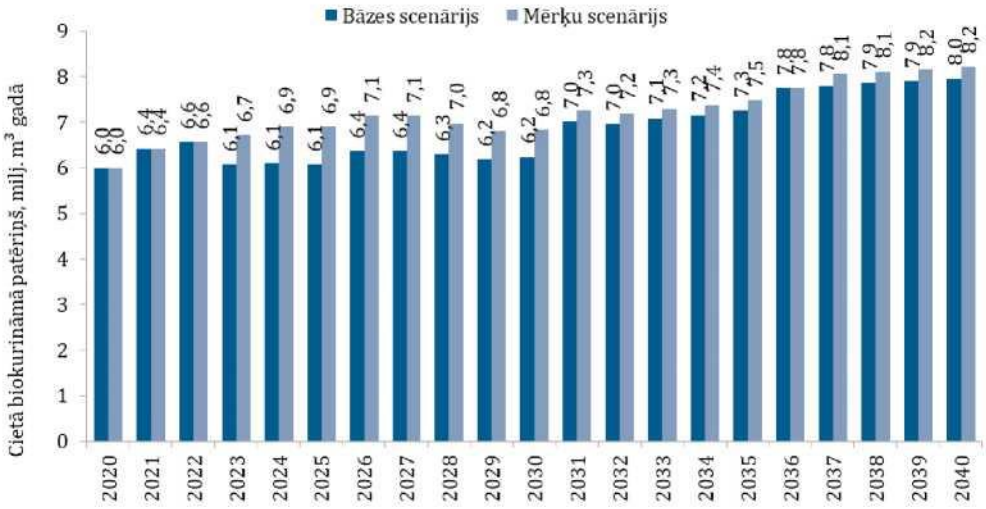

Figure 22: Forecast of consumption of solid biomass fuels in the Base and Target Scenarios

The ratio between the production of solid biomass fuels from indigenous raw materials and the consumption projections is shown in the Base-to-Objective scenarios in the figure below (a negative value indicates excess production of solid biomass fuels in the graph). Today, the production of solid biomass fuels from indigenous raw materials exceeds the demand of the Latvian energy sector by an average of 5.2 million$^{m^3}$ per year, and unsolicited solid biomass fuels are exported, mainly in the form of particle pellets. In 2030 and beyond, the production of indigenous solid biomass fuels is also expected to be higher than demand in the Latvian energy sector, but the share of solid biomass fuel exports is likely to decrease. The assessment carried out shows that the consumption of solid biomass fuels in 2030 can be further increased (79 %) in the Target Scenario by using indigenous solid biomass fuels currently exported. There is also a 53 % increase in the consumption of solid biomass fuels in 2040 compared to the demand for solid biomass in the energy sector projected in the Target Scenario.

Figure 23: Solid biomass fuel shortage forecast comparing biomass fuels produced from indigenous feedstock in Latvia and the forecast for its consumption

Pursuant to Article 29(7a) of Directive 2018/2001 (version of Directive 2023/2413), Latvia is to include in the Plan an assessment of the available domestic supply of forest biomass that meets the sustainability and GHG emissions saving criteria for energy in 2021-2030. Figure 21 shows the forecast for the availability of solid biomass fuels, including the calculation of indigenous resources only. The biomass fuel produced complies with the criteria for land use, land use change and forestry as defined in Article 29(6) and (7) of Directive 2018/2001.244

244 https://m.likumi.lv/ta/id/349169-par-latvijas-tiesibu-aktu-ka-ari-uzraudzibas-un-izpildes-sistemas-speju-

The projected consumption of forest biomass for energy production is in line with Latvia's 2026 to 2030 targets and budgets set out in Article 4 of Regulation 2018/841. the projected volume of biomass fuel production using wood processing by-products, processed wood and logging residues is significantly higher (79 % in 2030) than the demand for solid biomass fuels in the Latvian energy sector, so the projected increase in consumption of solid biomass fuels on the Latvian market will not affect the volume of harvesting and the fulfilment of obligations in the LULUCF sector. However, changes in the economic situation and the increase in demand for solid biomass fuels in other European countries may affect the availability of fuels on the domestic market. This risk can be mitigated by installing short rotation coppices and woody plantations for biomass fuel supply and through long-term contracts for the supply of solid biomass fuels.

4.7. Interaction with air pollutant emissions

Poor air quality has a negative impact on quality of life, especially that of the urban population. The European Environment Agency stresses that air pollution is the main cause of negative health effects. This can cause and amplify health problems such as respiratory and cardiovascular diseases. Heart disease and stroke are the most common causes of premature death linked to air pollution, followed by lung disease and lung cancer. Increased disease has a significant impact not only on quality of life but also socio-economic impacts, linked to the absence of working days due to illnesses and increased costs for healthcare services, especially for children and the elderly, as well as short-term effects of exposure to pollution such as respiratory irritation, an increase in the frequency of medication and the frequency of doctors' visits.

The European Environment Agency245 has assessed that in Latvia in 2021:

- particulate matter $PM_{2.5}$ (hereinafter – fine particulate matter (dust)) pollution caused around 1400 premature deaths;
- Of the$_2$ pollution caused 130 premature deaths;
- ozone pollution caused 70 premature deaths.

It is also estimated that the pollution of fine particulate matter (dust) in 2 021 in Latvia was 14300, NO_2 pollution 1300 and ozone pollution– *750 years of life lost*-246.

For the loss of life years in 2021, Latvia is better than the EU-27 average for NO_2 and ozone impacts, but worse for the impact of fine particulate matter (dust).

The largest share of the GHG emission reduction measures in the plan reduces air pollutant emissions and improves air quality. Such measures include measures to improve energy efficiency in all sectors, the use of wind and solar energy in the energy sector and the use of non-emission technologies for heat production in all sectors. All planned measures in the transport sector related to the increased use of EVs, the development of non-motorised mobility infrastructure and the support and optimisation of public transport will reduce emissions. In certain cases where it is not possible to prioritise zero-emission technologies or to use efficient CSAs, for example in cases involving the substitution of natural gas with biomass, measures increase the emissions of fine particulate matter (dust), in which case the measures must also ensure that technologies consistent with the best available techniques areinstalled247248.

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lesinat-Meza-biomass-Raw material-corresponding to Fib-Sustain-Sustain Pine-Criteries

245 EEA report 'Harm to human health from air pollution in Europe: burden of disease 2023', Table 2: https://www.eea.europa.eu/publications/harm-to-human-health-from-air-pollution/table-2

246possible life years lost as a result of premature death. The age of death shall be taken into account in the calculation; therefore, the contribution to the total loss of life years is higher for premature deaths occurring at younger age and lower premature deaths occurring at an older age.

The247 Law on Pollution

248With a '-'mark emission reduction and + mark increase in emissions

The policies and measures provided for in the plan have an impact on emissions of air pollutants in Latvia with regard to fine particulate matter (dust) emissions, nitrogen oxide emissions, non-methane volatile substances emissions and ammonia emissions reduction.

In order to assess the overall impact of the policies implemented in the Target Scenario on air pollutant emissions, the impacts calculated using the bottom-up method were compiled for the different groups of measures. This means that only measures for which performance indicators have been presented have been assessed and, in some cases, the possible interaction between the measures has not been taken into account. Consequently, the actual impact of all measures may vary.

It is estimated how the measures in the plan can reduce life years lost by around 8 % compared to the 2021 figures.

Table 5: Estimated impact of the measures on changes in emissions of air pollutants in sectors and overall for 2030 compared to the situation where measures are not implementedi[248]

Sector	SOx	Fine particulate matter (dust)	NMVOC	NOx
	tons			
Energy sector	97	110	—4	—452
Industry	—32	3		—281
Households	—37	—445	—366	—48
Commercial and public sector	—55	—61	—77	—284
Transportation	ND	ND	ND	—515
Total	—27	—393	—447	—1580

4.8. Climate change and gender issues

Climate change also affects gender issues. Latvia, in line with international commitments under the UN Framework Convention on Climate Change and the Paris Agreement, takes gender aspects into account when developing a national policy framework for climate change mitigation and adaptation.

This aspect is expected to require increased attention in the future, given that support must be given to the most vulnerable groups in order to ensure a just green transition. Women are more at risk of poverty than men. It is essential to ensure that policy instruments and measures do not increase gender inequalities.

In Latvia, in decision-making processes relating to environmental and climate change issues, the proportion of women in senior civil servants in public administration is at EU level. The representation of women in the parliamentary commissions and sub-committees dealing with these issues is insufficient.

4.9. Socio-economic impacts of planned policies and measures

4.9.1. Macroeconomic impact and investment of the planned policies and measures

Measures aimed at replacing imported fossil fuels by HEs, as well as measures to improve energy efficiency, contribute not only to reducing GHG emissions, diversifying energy supply, increasing self-sufficiency and reducing the cost of imported energy sources, but also bring a number of social and economic benefits. They relate both to the development, production and installation of RES technologies, as well as to their operation, maintenance and fuel preparation, as well as to the implementation of energy efficiency measures and the production of the necessary materials. Furthermore, the use of HEs and the implementation of energy efficiency

measures are closely linked to the promotion of entrepreneurship, innovation and the use of modern technologies.

Based on the results of the Target Scenario modelling obtained with the TIMES-Latvia model, some of the economic-social indicators for the implementation of the scenario have been assessed. The total investment needed to maintain and develop the infrastructure of the energy system (supply and consumption sectors), which includes investments not only for new additional energy generation capacities but also for the replacement of existing energy capacities over time, as well as the maintenance of different energy transport systems, is ~ 3.6 billion in the Target scenario 2023-2030. EUR/year, but 4.2 billion EUR 2031-2040 EUR per year. These are investments made by all actors in the energy system to provide the necessary energy services (individual consumer, company, state, municipality, etc.).

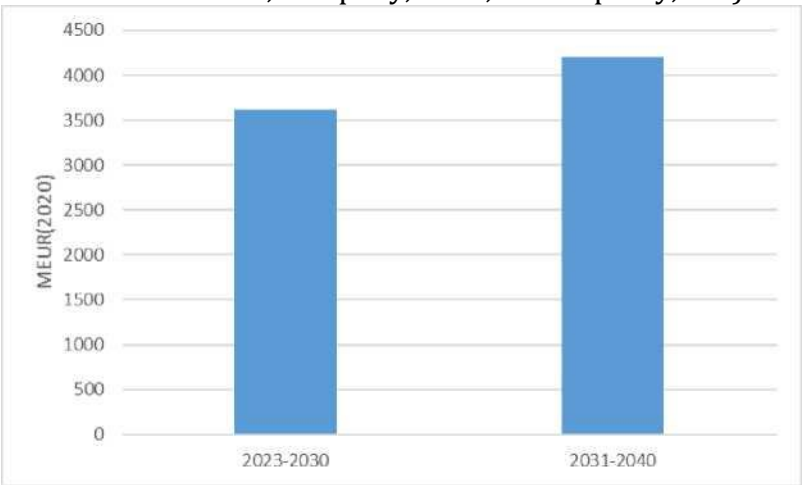

Figure 24: Estimated total investments to maintain the energy system over time periods on average per year

The target scenario envisages the implementation of broad energy efficiency improvement measures across all consumer sectors. Total investments in 2023 — 2030 is ~ 2.9 billion. EUR. This amount includes both the financing of the planned support programmes and the private financing of market participants.

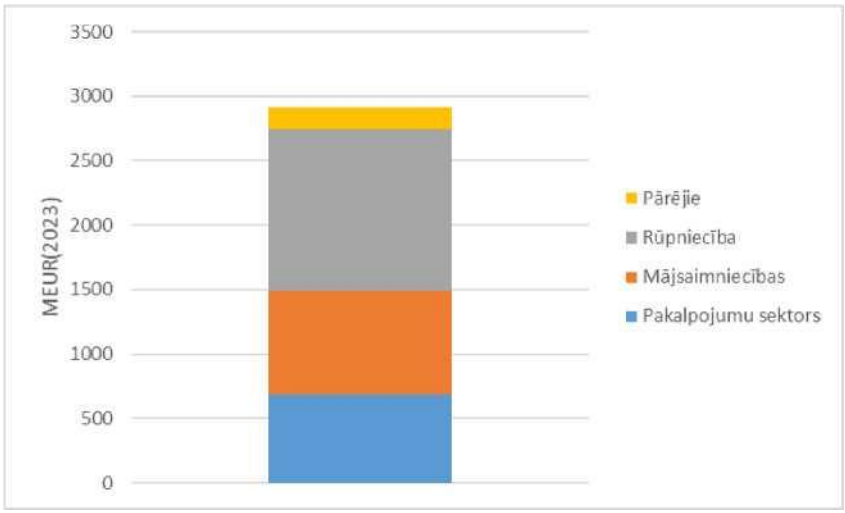

Figure 25: Estimated investment for energy efficiency improvement measures 2023-2030

Measures to improve energy efficiency and the increased use of HEs reduce the expenditure on imported energy resources, thus improving the export balance of national trade imports. From this point of view, the analysis of the results of the Targets against the Baseline Scenario shows, on the one hand, that energy efficiency and increased use of RES reduce the cost of imported energy resources, on the other hand, that additional investment is needed to implement these policies and measures. In the Target Scenario, the cost reduction for imported fuels almost fully compensates for the necessary additional investments in energy efficiency improvement measures and the installation of additional AE capacities.

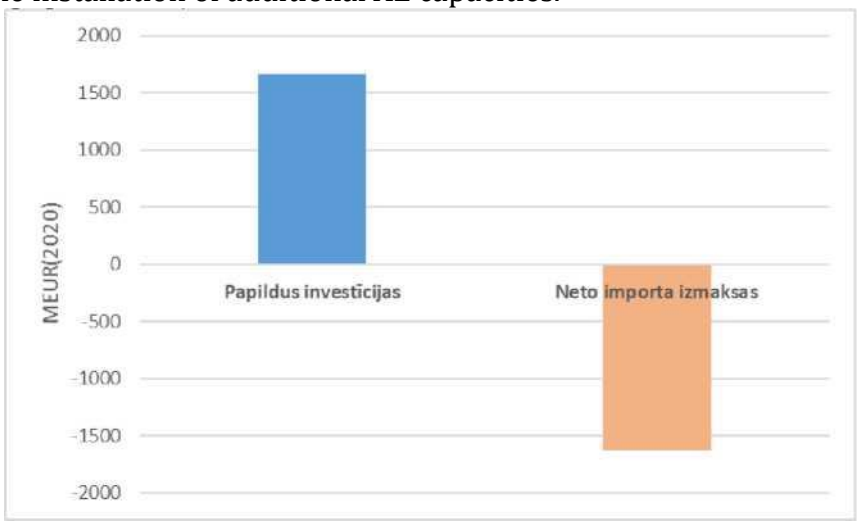

Figure 26: Decrease in expenditure on imported energy sources (brown column) and increase in expenditure on investment in technology (blue column) Target scenario against Baseline 2023-2030.

4.9.2. Impact of planned policies and measures on jobs

Improving energy efficiency through the renovation of buildings in the household and services sector not only leads to energy savings and reduced energy and fuel expenditure, but can stimulate economic growth by developing the construction and materials industry. The planned implementation of energy efficiency measures for building renovation can stimulate local and regional development through job creation.

Based on modelling results on the amount of energy saved in 2030 and the investments needed, the numberof 249 jobs was calculated from the implementation of energy efficiency policy

249The number of jobs is calculated on the basis of information available from international literature on the number of jobs per investment (jobs PLE/MEUR) or energy savings (working PLE/GWh). The assessment is given as the average of the two methods used. The PLE is calculated as an average over the lifetime of an energy efficiency measure. These indicators are different for each energy consumption sector.

measures in households, services and industry. Estimated jobs include both direct and indirect jobs.

The implementation of energy efficiency improvement measures in 2023-2030 can result in ~34500 direct and indirect jobs per year on average over the period 2023-2030. Estimated jobs between sectors where measures are implemented roughly equal.

The target scenario involves the installation of additional capacities for HEs by 2030, including electricity generation and heat generation. The installation of these new capacities also creates additional jobs. There are significant differences between different HE technologies, i.e. employment in bioenergy projects differs significantly from wind and solar projects. For the latter, jobs in Latvia are mainly generated by the installation and operation of installations, while bioenergy projects are complemented by the production and supply of biomass. The introduction of additional HE capacities by 2030 can lead to around 1400 new direct and indirect jobs. It should be noted that this assessment does not take into account possible job losses in the servicing of fossil installations.

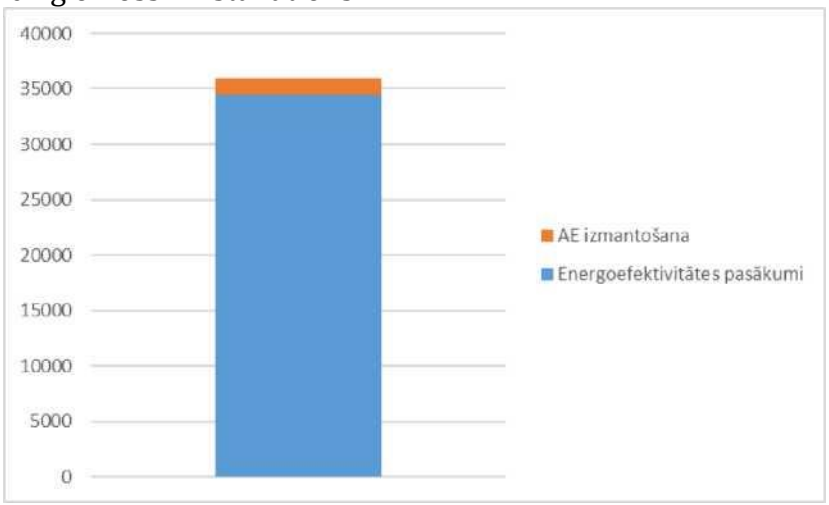

Figure 27: Estimated direct and indirect jobs from energy efficiency and HE policy implementation target scenario over the period 2023-2030.

It can therefore be concluded that the implementation of energy efficiency and HE policies can generate around 35900 direct and indirect jobs on average per year over the 2023 period. In addition, energy efficiency measures help to reduce energy spending for consumers. The estimated reduction in expenditure from energy savings for consumers to 2030 is ~108 million. EUR/year. The planned renovation measures for multi-dwelling buildings in households could, on average, reduce the total cost of heating and warm water production by around 9 %.

4.9.3. Ensuring a just and fair transition

The planned policies and measures included in the Plan do not materially affect aspects of a just and fair transition during the coverage period of the Plan, as no measures are foreseen for major changes in an economic sector. Several of the measures proposed in the Plan promote employment in activities such as energy efficiency improvement measures, modern

production of biofuels, installation and operation of non-emission technologies, conversion and maintenance of land reclamation systems, etc.

Agricultural land use is an emission-intensive activity and a large part of GHG emissions originate from activities where GHG emission reduction measures are very difficult to implement. Similarly, the agriculture, land use and forestry sector in Latvia employs around 7 % of total employment, the vast majority of which is employed in the regions. However, this employment is higher when taking into account related sectors, such as the food industry, the wood industry, which will be affected by changes in the agricultural and LULUCF sectors.

Consequently, when planning a sectoral change or promoting measures to shift from GHG-intensive agricultural, land-use and forestry techniques and technologies to less intensive ones, it is also necessary to plan and take measures to promote changes in the employment of the population without having a significant impact on the social situation and well-being of citizens. These measures include training and career reorientation of the population, assistance in finding employment in another sector, including, where necessary, assistance in changing residence.

Although Latvia's energy sector (excluding transport) is not significantly emission intensive, as it is dominated by the use of natural gas and various types of biomass fuels, in the period up to 2050, the transition towards the decarbonisation of the energy sector and a significant improvement in energy efficiency may also be necessary in the long term to shift energy workers towards opportunities in other sectors and sectors. Some of the largest industrial plants in Latvia are also currently emission intensive, where part of the emissions originate from production processes rather than fuel use activities, and if these companies decide to change their production, volume or sector of activity at all, in order to provide Latvia's contribution to the EU's objective of climate neutrality in 2050, workers employed in such enterprises would also need assistance and measures should be implemented for such employees not to worsen their social impact through employment change.

EU structural funds linked to the transition to a climate-neutral economy should also be used to ensure a just and fair transition, as these funds would enable the financing of measures to support upskilling, skills development for employees or mitigate the impact of higher energy prices on households' financial capacity.

4.10. Impact of policies and measures on other EU Member States and regional cooperation

The policies, their objectives and the measures planned to be implemented in Latvia will not have a major negative impact on the other two Baltic States. In contrast, for example, the development of offshore wind farms in Latvia's maritime area will have a positive impact on the region's energy supply. Based on existing monitoring programmes for wind farms such as the North Sea, it is possible to carry out appropriate planning and mitigation measures to build offshore wind farms without causing significant environmental damage. It should be borne in mind that coastal coastlines are technically suited to wind energy development, but these habitats are also attractive for many of the benthoscommunity250.

The Baltic States have coordinated the measures proposed in their Plans and assessed the potential impact of the measures on neighbouring countries, with most of the measures not having a negative impact on other countries. Measures related to electricity and gas infrastructure development projects are expected to have a direct cross-border impact. This impact will be generally positive in terms of energy prices and energy market integration. In addition, Latvia and Estonia are currently Europe's largest producer of wood pelletsi[251] posing a shortage of RES in other European countries. This is being strengthened by:

250https://www.wwf.no/assets/attachments/84-wwf_a4_report__havvindrapport.pdf

[251] https://www.graanulinvest.com/eng/frontpage

through sectoral cooperation in the supply of wood (including chips, pellets) for the wood industry and the energy sector, such asBaltpoo l252, proposed by a Lithuanian operator. In addition, future technologies (energy storage, CCU, hydrogen, etc.) will be sought in Nordic-Baltic cooperation.

5. FINANCIAL IMPACT OF THE PLAN

To implement the measures and tasks included in the Plan, it is planned to use public funding (national and local government budget funding), EU budget funding available to Latvia in the form of EU funds and other financial instruments of the EU budget, other foreign financial instruments, other funding sources and private capital, depending on the nature of the measure. The institutions shall implement sectoral policies and measures within the NB funds allocated to them, measures relating to the drafting of legislation and policy planning documents and the related studies or evaluations. The actions planned for the implementation of the action lines included in the plan are implemented within the framework of the funding provided by the institutions involved in the execution. The implementation of the plan by the institution involved in the execution will be ensured in 2024 within the allocated national budgetary resources. The question of the additional necessary funding for the implementation of the plan's measures in 2025 and beyond is to be seen during the preparation and examination of the draft Law on the State Budget for 2025 and the Budget Framework for 2025, 2026 and 2027, together with applications for priority measures submitted by all ministries and other central state authorities, in accordance with the financial capacity of the State budget. If, during the preparation of the draft State budget law, additional State budget funding for the implementation of the plan measures is not allocated or is partially allocated, the authorities involved in the execution will ensure that the plan measures that can be provided within the allocated State budget resources are implemented.

The total amount of funding required for the implementation of the measures proposed to implement the policies of the Plan and its possible sources are included in Chapter 3 of the Plan, where the amount of funding required253 and earmarked for each measure is the total amount and may include, depending on the type of measure, both the share of EU funds, national funding and, for example, private and complementary public funding. The254 sum of the total investment needsof the identified measures for the 10-year period includes both the continuation of the measures already implemented and the additional necessary investments.

When assessing and designing the aid measures referred to in the Plan, they will be assessed in accordance with the relevant framework for the control of aid for commercial activities. Similarly, in order to attract and invest investments, it is also necessary to ensure that investments comply with the conditions for sustainable investment stemming from Regulation 2020/852.

Possible sources of funding

VB

Vb funding is to be used as part of support for energy efficiency improvement measures, deployment of RES technologies, or support or co-support other GHG emission reduction measures. Similarly, VB could be affected by the applicable tax incentives or exemptions for zero- or low-emission fuels or the use of technologies. The R & D funding instruments of the Vb

252https://www.baltpool.eu/lv/

253The funding required for the implementation of the measures does not mean that this funding has already been "committed" or planned. The necessary funding for the implementation of the measures must be requested from the relevant national authority in accordance with the procedures laid down in the Republic of Latvia, by requesting the NB and the medium-term budgetary framework in the process of preparing the annual budgetary framework or by attracting EU or other foreign funding.

254taking into account baseline investments and additional investments to implement accompanying measures, where the total investment consists of both EU Structural Funds, NB or WB, ENII funding and private financing

are the basic and applied research programme, the NRP and the Innovation Fund.

In the framework of the ENII 2021. — The available funding could reach around 820 million over the 2030 period. EUR 255 At the same time, it should be taken into account that the future impact on revenues from auctioning of emission allowances will be a revision of EU legislation, *such as the Proposal for a Council Decision (EU, Euratom) amending Decision (EU, Euratom) 2020/2053 on the system of own resources of the European Union,* which is intended to establish new categories of own resources to be entered in the EU budget, including annual contributions of 30 % of Member States' auctioning revenues of emission allowances. As a result, the available funding under the ENII, which would be channelled to support GHG emission reduction measures or co-support compared to current projections, will decrease. At the same time, preliminary revenues from auctioning of emission allowances under the 'new' ETS to the time the Plan was drawn up cannot be determined due to the lack of binding information.

Revenues from the auctioning of emission allowances shall be used to mitigate climate change and ensure adaptation to climate change. The functioning of the EQF is primarily based on two components:

1) around 90 % of the revenues from the auctioning of emission allowances on the primary market are allocated to climate change mitigation and adaptation projects;
2) around 10 % of the revenues from the auctioning of emission allowances in the primary market are directed towards institutional capacity to deal with climate change.

The funding available under the MF for eligible Member States comes from two tranches, auctioning 2 % of the total EU emission allowances for the period from 2021 onwards. — 2030, as well as auctioning 2.5 % of the total EU emission allowances for the period 2024 onwards — In 2030, Latvia's share represents 1.44 % and 1.0 % respectively of the total volume of emission allowances to be auctioned under the MF, according to the above breakdown. The funding available under the MF depends on the price of emission allowances and the monetisation of emission allowances is gradual, so it is not possible to determine the exact amount of funding due to Latvia due to the high uncertainty caused by fluctuations in the price of emission allowances. At the average emission allowance price of EUR 70-80, until 2030, the funding available to Latvia under the MF could amount to around 350 million. EUR. The use of MF funding is laid down in Cabinet Regulation No 396255256257258.

PB

According to the Law on Local Government Budgets, local authorities draw up their own PBs, taking into account the legislation in force, and the State administration does not have the power to intervene in the development and execution of the PB. The PB is composed of a number of tax revenues, part of which also relates to energy and climate actions, such as the DAT, the IIP. Local governments also have the right to determine tax allowances. In Latvia, many local governments provide for financing in their budgets for the implementation of energy efficiency measures, including the introduction of energy management systems, both for their own properties and as support for measures to improve energy efficiency for their residents. Similarly, a number of municipalities apply IM exemptions for energy efficiency measures taken on properties, such as apartments in heated multi-apartment residential buildings.

255ETS period 3 (2013) — 2020) revenues from the auctioning of emission allowances amounted to 249.42 million. EUR total for the whole period
256https://likumi.lv/ta/id/343812-modernizacijas-fonda-darbibas-kartibas-noteikumi-un-daudzgadu-darbibas-programma
257 EU cohesion policy programme for 2021-2027 approved by Cabinet of Ministers on 16.11.2021 https://likumi.lv/ta/id/349490-par-project-ideju-priexatis and-to-submittances-European-Union-cohesion-Policy-programmes-20212027-year-213-specific-Support-merka-Enganat-pielagosanos-climate-paramainam-risk-noversanu-and-noturibu-anti-catastrophe-2132-measure-nacionalas-nozimes-pludu-and-shore-erosion-in-project-selection-second-card-frames
258 https://www.esfondi.lv/planosana-1

MFF

The main financial instruments under which Latvia receives financial support are the EU Cohesion Policy Fundi[257.258:] European Regional Development Fund (ERDF), European Social Fund (ESF) and Cohesion Fund (CF), Just Transition Fund (JTF), Recovery and Resilience Facility (RRF) and Common Agricultural Policy

within the framework of the European Agricultural Fund for Rural Development (EAFRD), the European Agricultural Guarantee Fund (EAGF) and the European Maritime, Fisheries and Aquaculture Fund (EMFAF).

10.44 billion is available to Latvia for this MFF programming period. EUR 184.23 million of which EUR under the JTF and 1.82 billion. EUR under the RRF. Similarly, the 2023 approved amendments to the RRF plan adding a new component 'REPowerEU' foresee an additional over 134 million for Latvia. EUR to invest in the transformation of the energy sector, providing funding for the synchronisation of the electricity transmission system, the modernisation and development of electricity transmission and distribution networks, as well as the diversification of energy sources and the clean energy transition.

A number of other sources of financing have been established under the MFF that could contribute to achieving the plan's objectives: Invest EU, Horizon Europe, CEF, LIFE Programme for Environment and Climate Action

EC financial instruments (programmes)

SKF

In line with the provisions of Regulation 2023/995, there are 463.67 million available for Latvia under the SCF. EUR 2026 — For the period 2032 In addition, Latvia must provide co-financing of at least 154.56 million. Million. The objective of Regulation 2023/995 is to contribute to a socially fair transition towards climate neutrality by addressing the social impacts of the inclusion of buildings and road transport in the EU Emissions Trading System (ETS2), in particular for groups affected by energy poverty or transport poverty. Support shall target vulnerable groups: vulnerable households, vulnerable transport users and vulnerable micro-enterprises.

In accordance with the provisions of Regulation 2023/995, in order to obtain access to SCF funding, Member States must draw up and submit to the EC a Social Climate Plan that will identify eligible measures and investments (the potential eligible measures are listed in Article 8 of the Regulation). Work on the preparation of the plan has started in October 2023, while the submission of the plan to the EC is foreseen for the period until June 2025. Accordingly, it is not possible at this stage to identify specific SCF support activities and the funding needed to implement each activity.

IF[259]

The IF is designed to support innovative low-carbon technology solutions, contributing to the decarbonisation of the EU and the transition towards climate neutrality, while contributing to the EU's competitiveness. The Fund is financed under the EU ETS through the auctioning of a certain volume of emission allowances for the period from 2020 onwards. — 2030, so the total amount of funding available under the Fund depends on the price of emission allowances.

The Fund shall focus on co-financing innovative but sufficiently mature projects with the aim of achieving an optimal balance between the uptake of innovative technologies in all sectors, including through cross-sectoral projects and covering activities such as the development of innovative low-carbon technologies and processes in energy-intensive industries, carbon capture and utilisation, carbon capture and storage, innovative renewable energy generation as well as energy storage.

Financing by international financial institutions

Given the total amount of financing needed to implement the policy measures included in the

[259] https://ec.europa.eu/clima/policies/innovation-fund_en

Plan and the funding that could be available under EU funding, funding from international financial institutions such as the European Investment Bank, the European Bank for Reconstruction and Development and the Nordic Investment Bank could also be a source of financing. International financial institutions offer market-based financing in areas where there are market failures and investment gaps, while ensuring complementarity, thus investing in projects where private sector financing is not or only partially available.

Private funding

Given the total amount of funding needed to implement the policy measures included in the Plan, it is understandable that Latvia will also require a substantial contribution from private financing to meet the targets set.

6. INTEGRATED MONITORING AND REPORTING SYSTEM

Regulation 2018/1999 requires the submission of the EC's integrated national energy and climate progress report every two years covering all five dimensions of the Energy Union. The content of the integrated progress report is laid down in Commission Regulation (EU) 2022/2299 of 15 November 2022 laying down rules for the application of Regulation 2018/1999 as regards the structure, format, technical details and process of the integrated national energy and climate progress reports. In addition to assessing the progress of the Plan, it is necessary, using national environmental monitoring and other available data, to produce an environmental monitoring report twice during the planning period (2024 and 2028) and to submit it (also in electronic form) to the State Environmental Monitoring Bureau.

The implementation of the monitoring and reporting conditions included in Regulation 2018/1999 in Latvia will require significant changes both in the legislative framework and in institutional capacity issues. For the qualitative fulfilment of integrated reporting under Regulation 2018/1999, it is necessary to establish an effective monitoring and reporting system in Latvia, which will determine both the bodies for compliance with the monitoring and reporting conditions and the procedures for the circulation of data and information, so that the data and information already available are not re-examined and evaluated during the reporting process. At present, Latvia's regulatory framework lays down the conditions for assessing the progress of GHG emissions and $CO2_{removal}$ targets and biennial reports on progress – a report on policies, measures and projections, and sets out a national system for greenhouse gas inventories and a national system for preparing greenhouse gas projections.

The establishment and implementation of the integrated monitoring and reporting system will require additional financial resources and it is possible to mobilise EU structural funds to carry out these tasks. In order not to have a significant impact on NBs and no new authorities should be created, it is possible to designate an existing authority under or under the authority of ministries as the main competent authority for the functions of the integrated monitoring and reporting system.

In order to implement the requirements relating to the LULUCF sector set out in Part 3 of Annex V to Regulation 2018/1999, the identification of the necessary data to improve the national regulatory framework (i.e. the development of Cabinet Regulation No 675 of 25 October 2022 on the establishment and maintenance of the greenhouse gas inventory system, the forecasting system and the system for reporting on adaptation to climate change) is ongoing. Negotiations with potential data providers are organised. In parallel, a remote-sensing solution is being developed to characterise GHG emissions and $CO2_{removals}$ using a*wall to wall -based approach*that will allow for a more precise description of the rare land use categories listed in Part 3 of Annex

V to Regulation (EU) 2018/1999.

7. CONSULTATION PROCESS AND REGIONAL COOPERATION

7.1. Key issues of cross-border relevance

In the context of the plan, the most important measures implemented concern the interconnections of the Baltic energy market, the common energy market and energy security issues.

In a cross-border context, it is also important to coordinate measures between the Baltic States that affect not only infrastructure and electricity connectivity, but also the flow of energy resources (both fossil energy sources, biomass and biofuels) between the Baltic States.

In the context of decarbonisation, it is crucial to develop and maintain a common (harmonised) vision of decarbonisation opportunities in the Baltic States and a common approach to implementing decarbonisation measures. However, the application of the common approach to implementing decarbonisation measures could be hampered by the different situations of Member States, in particular as regards the energy mix and the main sources of GHG emissions, where Latvia has the highest share of GHG emissions from non-ETS activities from all Baltic States (EU Member States 2) and non-ETS activities are dominated by the agricultural sector and transport, while in Estonia the share of GHG emissions from non-ETS activities is among the lowest in the EU Member States with dominant transport emissions. Lithuania's share of GHG emissions from non-ETS activities and their structure, dominated by the transport and agriculture sectors, is more similar to Latvia than Estonia. However, in all three Baltic States, transport is one of the largest sources of GHG emissions from non-ETS activities and it would therefore be advisable to take coordinated action specifically to reduce emissions from the transport sector.

7.2. Consultation and involvement of national and EU Member States, bodies

The plan was developed in cooperation with sectoral experts and stakeholders in the Plan through the development of expert working groups set up in the framework of the National Energy and Climate Council. As of December 2023, each expert working group had to meet at least once a month until the additional measures were submitted to KEM.

7.2.1. Involvement of the Saeima and the Cabinet of Ministers of the Republic of Latvia

Information report on "Developing the National Energy and Climate Plan" 260 The content and timing of the Plan, as well as the principles and responsibility for preparing the information. The MoE and VARAM (currently the Chancellery) were the main coordinators for drafting the plan and the MoA, MoF, MoA, MoA, MoA and Cross-Sector Coordination Centre (now the State Chancellery) are also involved.

05.12.2023 An information report entitled 'Actualised National Energy and Climate Plan 2021' was approved at the meeting of the CCC. — Project 2030 and submission of its summary for EC evaluation261, to which the Plan project was annexed.

By Order No 2023/1.2.1.-328 of the Prime Minister of18.12.2023, Energy, Environment and Climate Committees262 were set up to coordinate and monitor the achievement of energy, climate and environmental objectives, including the issue required for the design and

260Cabinet minutes decision 'Information report on the elaboration of the National Energy and Climate Plan' (Article 50 of Cabinet minutes No 30 of 26 June 2018)
261https://tapportals.mk.gov.lv/legal_acts/56f1c764-386b-4961-97e6-7d66cedca1c4
262https://likumi.lv/ta/id/348436-par-energetikas-vides-un-klimata-jautajumu-komitejas-izveidi

implementation of the Plan at each meeting of theCommittee263.

The conditions to be included in the plan and the related sectoral policy planning documents for 2023 and 2024 have been discussed by several committees of the Saeima Saeima, such as the Saeima Committee for Sustainable Development, the Committee on Economics, Agriculture, Environment and Regional Policy of the Saeima.

7.2.2. Consultation of stakeholders, social partners, involvement of civil society, involvement of local and regional authorities

In 2023, a number of stakeholder suggestions for updating the Plan have been received, such as the LDDC, NCPs, Green Freedom. The updated draft Plan was published in November 2023, where 193 objections and proposals for the Plan project were received following the publication of the Plan.

In January-February 2024, KEM provided more than 50 face-to-face and remote meetings (subject to *Chatham House* Rules) – NGOs, industry operators, experts, associations, educational experts and social partners to listen to proposals, objections to improve the Plan and energy and climate policies. In June 2024, the Plan was provided with a public consultation where it received input from individuals and social partners, a collection of contributions received and KEM's responses to them are published on the KEMwebsite264. The contributions received were assessed by line ministries and taken into account, to the extent possible, in the updating of the Plan, while discussions will continue in the relevant working groups on both the public's views and those of the social partners received during inter-ministerial coordination, in accordance with the Cabinet Order.

7.2.3. Iterative process with EC

On 19.4.2024, a remote meeting took place with Paula Abreu Marches, Head of Unit for Strategy, Policy Coordination and Planning, Inter-institutional Relations, and the experts in charge of DG ENER on the development of the Plan and the implementation of the recommendations prepared by the EC in the field of energy, with a particular focus on the HE and energy efficiency dimensions and the national targets set out in the above-mentioned areas and their contribution to the EU objectives.

7.2.4. — 24/05/2024, a high-level visit to Latvia by Ivonnas Slingenberg, Deputy Director-General of DG Climate Action, took place. During it Latvia's progress in updating and implementing the Plan was discussed with the responsible sectoral ministers, sectoral policy makers, cooperation partners and NGOs. The views of the Latvian representatives were heard and the Commission's vision for the EU's climate targets for 2030 and 2040, as well as the availability of EU funds for the transformation of the economy to achieve climate neutrality will be presented.

7.3. Regional cooperation in preparing the plan

Latvia participates in various forms of regional cooperation in the field of climate and energy (in the context of the Paris Agreement and climate and energy policy), including:

- The Baltic Asambleja265;
- The summits of the prime ministers of the Baltic States;
- The Baltic Council of Ministers (BCM);

263https://www.mk.gov.lv/lv/energetikas-vides-un-klimata-jautajumu-komiteja
264https://www.kem.gov.lv/lv/nacionalais-energetikas-un-klimata-plans-2021-2030-gadam
Interparliamentary cooperation between265 Estonia, Latvia and Lithuania

- Baltic Energy Market Interconnection Plan (BEMIP).

While intensive coordination on energy policy issues in the Baltic States takes place at the level of senior officials of the BCM, more regional cooperation is also linked to countries such as Finland, Sweden, Poland, Denmark and Germany. In the EU context, regional cooperation takes place in the BEMIP format, covering infrastructure planning and helping to increase and efficiently use financial resources, including CEF, which supports cross-border energy projects, thus further enhancing cooperation in the Baltic Sea region.

In October 2023, Latvian representatives, together with representatives from Lithuania, Estonia and Poland, discussed the drafts of the Plan, the measures included therein and the public's views on them, and discussed possible areas of regional cooperation. On 18/06/2024, a remote regional meeting took place with German, Polish, Lithuanian and Estonian counterparts, where each country's plans, challenges and further steps in implementing the NECPs were presented. The exchange of information and discussions on specific aspects of the NECPs or their implementation will continue to be organised.

At present, 2 cross-border AE projects – ELWIND and Lode-Penuja wind parks – have been approved266. A number of projects are also ongoing to improve the security of electricity and gas supply in the Baltic region and to ensure efficient market development. The key regional project is the synchronisation of the Baltic electricity grid with the European electricity grid. There are a number of other key projects so far to ensure the efficient functioning of the market, such as joint interconnections as well as modernisation of the UGS, etc. In the transport sector, regional cooperation is ongoing on the implementation of the Rail Baltic project and the construction of a charging network for EVs, which is being carried out in all EU Member States. Cooperation with other countries is already ongoing to ensure the smooth use of EV charging networks by foreign representatives within the EU. As a result, the conditions for the possibility of moving with EVs between EU Member States have been created. Regional cooperation to reduce GHG emissions from agriculture is also carried out in accordance with Directive91/676/EEC K 267 (on nitrogen emissions) or the Action Plan to reduce air pollution (on ammonia emissions).

The Baltic States agreed that regional cooperation could be extended to energy efficiency and RES development areas specific to the transport sector, including:

- development of biomethane production and market, adaptation of the conditions for guarantees of origin for biomethane;
- coordination on biofuel requirements (biofuel blending and taxation issues);
- coordination of possible tolls (in Latvia – tolls) or tolls for trucks.

In addition, the potential regional cooperation could be extended to include cooperation between national EV charging network operators at Baltic level and to include the agricultural and forestry sectors (e.g. drainage, soil quality measures, etc.), taking into account the potential cross-border impact of agricultural, forestry or fisheries activities.

The planning and implementation of long-term (by 2030 or 2050) energy and climate policies and measures could be improved or implemented with the required quality, through the opportunity to share experience and knowledge with other EU Member States, in particular in the field of reducing carbon emissions and promoting energy efficiency, as this could help Latvia to choose the most appropriate instruments and actions to achieve specific objectives.

The Baltic States will continue to cooperate in the planning and implementation of RES, energy efficiency and climate actions in the framework of various working groups and activities,

266https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A02022R2202-20231217
267https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:31991L0676&from=LV

namely:

- Baltic regional security cooperation launched by the Baltic CSOs (Elering, AST, Litgrid);
- BRELL (Belarus, Russia, Estonia, Latvia and Lithuania) system by February 2025;
- Regional Gas Market Coordination Group and UAB GET Baltic;
- The activities of the International Energy Agency (the three Baltic States are members of the IEA).

1. ANNEX 2: European Commission recommendations
2. ANNEX 2: Description of baseline and Target scenario, methods used to analyse and predict energy system developments and GHGs