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*Analysis on long-term
energy, environmental and climate
policies for RES*

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ABBREVIATIONS AND DEFINITIONS

Abbreviations:

CNG – Compressed natural gas;

EC – European Commission;

EU – European Union;

EGK – European Green Course;

FCEV – Fuel Cell Electric Vehicle;

HVO – Hydrotreated vegetable oils;

GDP – Gross domestic product;

PCA – Paris climate agreement;

FICC – Financial Instrument for Climate Change;

LNG – Liquefied natural gas;

PHEV – Plug-in Hybrid Electric Vehicles

Definitions:

- Renewable energy sources – are “identified energy resources whose recovery is dictated by natural processes. It is part of the potential energy of the sun, wind, biomass, earth heat and water, the use of which is economically justified at the current technical level” (AkadTerm, 2019) (Language consultancy: electronic database).
- Liquid or gaseous transport fuels produced from renewable energy sources are liquid or gaseous fuels, other than biofuels, which are generated by renewable energy sources other than biomass and which are used in transport;
- Hydrogen electric vehicle FCEV (Fuel Cell Electric Vehicle) A emission-free vehicle for which electricity is used, obtained from both the oxidation of hydrogen gas into the fuel cell and from battery batteries, and for which a hydrogen filling infrastructure is required for refuelling/charging;

INTRODUCTION

One of the main tasks of policy and planning documents is to promote changes by ensuring improvements, as well as ensuring a transparent and understandable transition process for all parties and society in general.

It is advisable to follow these principles, while implementing almost any policy:

- Sustainable development and targets;
- Coherence of interests, balancing and society's participation;
- Proportionality of financial opportunities and solutions;
- Territory equal development.

Other principles specified in the Development Planning System Law, Spatial Development Planning Law, State Administration Structure Law, Administrative Procedure Law and Fiscal Discipline Law need be observed in the Republic of Latvia.

Currently policy can be divided into groups of short-term (≤ 3 years), medium-term (5–10 years) and long-term policies (< 25 years).

A policy can be considered as contributing to change if sufficiently ambitious long-term objectives are set and reinforced by a mutually agreed and believable set of related policies to achieve these objectives. Interaction of policies is essential for policy planning and implementation. The interaction between policies can be strengthening, neutral or weakening. If the aim of the new policy is to strengthen the policy, then selection and implementation sequency of policy should be mutually reinforcing. If a new policy aims to weaken a policy that has been previously introduced, for example by addressing failures from previous policy (which may have been both predicted and unpredicted), then a new policy weakening previous policy should be chosen. Similarly, results-oriented policies within one sector should be seen in a broader context, assessing its interaction with other sectors' policies. This means that parallel existing policies targeting a specific sector do not create barriers to the successful implementation of other sectoral policies. Particularly for the case for mutual policy competition in the context of limited funding.

In terms of the quality of the process, a policy can be considered transparent and comprehensible if it promotes a timely and productive (i.e. objective evaluation and integration of the proposals of the parties concerned) policy development process, as well as continuous and independent involvement of all related parties in both policy development and implementation.

1. METHODOLOGICAL APPROACH USED FOR ANALYSIS

The analysis of long-term energy, environmental and climate policies in the field of renewable energy sources (RES), was based on three consecutive phases.

The first phase is the evaluation of the global framework and policy development in the field of RES, as well as the assessment of long-term energy, environment and climate policies at European level.

The second phase is the identification of policy development documents and policy assessment approaches.

During this phase, the scientific and research articles and the analysis and reports of the policy development documents carried out so far in the field of RES have been evaluated. In practice, on the basis of the information and approaches gathered, a framework for the evaluation of policy documents was established, which is used in the next phase.

At this stage, an algorithm was developed that allows to evaluate existing policy documents in the systematic and uniform way.

The third phase is the assessment of the long-term policies of Latvia's energy, environment and climate policies by economic sectors.

Details of each step and their actions and performed analyses are described in the following sections.

1.1. First phase

This phase summarises both global and European level guidelines and policy development in the field of RES.

1.1.1. Global framework and policy development in the field of RES – UN system

Paris climate agreement (PCA)

The framework for global climate objectives is set by the Paris climate agreement. The Paris climate agreement aims to strengthen the global response to the threat of climate change by preventing growth of global temperature by more than 2 degrees Celsius compared with the pre-industrial era, as well as trying to prevent growth of temperature not more than 1.5 degrees Celsius. The objective of the PCA is also to strengthen the capacity of countries to cope with the effects of climate change, as well as to ensure that the financial flow follows the low-carbon development and measures that strengthen society's resilience to climate change. Such an ambitious target requires significant resources, a new technological framework and a strengthening of national capacity, particularly taking into account the necessary support for developing countries and countries most exposed to climate change in accordance with their national objectives.

The Paris climate agreement (so-called decision 1/CP.21) highlights the following key actions to be taken to mitigate climate change:

- The long-term temperature objective (Article 2): the main objective of the Paris climate agreement (PCA) is to keep global temperatures below 2 degrees Celsius, trying to keep the temperature increase below 1.5 degrees.
- Global GHG emissions peak (Article 4): In order to achieve the temperature retention target and keep a balance between anthropogenic sources and GHG receivers in the second half of the century, PCA Member States shall aim to achieve the GHG peak as soon as possible. Countries are aware that developing countries could reach their GHG emission peak later.
- Nationally determined contribution (NDC) (Article 4) – PCA makes a binding commitment to prepare, report and maintain national targets and to take measures to achieve the objectives. Member States shall report on their NDC every five years. In each of the next NDC, more ambitious targets should be set. Developed countries undertake comprehensive measures to achieve ambitious targets for all sectors of the economy. Developing countries are improving and enhancing their mitigation efforts, taking into account national conditions, but with a clear move towards targets that will eventually apply to all sectors of the economy.
- GHG store (Article 5): PCA countries are encouraged to maintain and improve GHG sinks and reservoirs, including forests, as identified in Article 4, point 1 undersection (d).
- Voluntary cooperation and on market based and non-based approach (Article 6): The PCA allows voluntary cooperation between Member States to achieve more ambitious objectives and lays down principles, including environmental integrity, transparency and accurate accounting, that needs to be considered in cooperation on the international movement of climate change measures. The PCA shall establish a mechanism to support GHG mitigation and sustainable development and establish a framework for non-market-based sustainable development approaches.
- Adaptation (adapting) (Article 7) - The PCA introduces a global adaptation target: strengthening adaptation capacity, strengthening resilience and reducing vulnerability caused by climate change. The objective should be achieved by supporting national adaptation efforts, including through international support and cooperation. The PCA acknowledges that adaptation or adapting to climate change is a global challenge that affects every [country]. All PCA Member States should be involved in adaptation planning and submit and then periodically update a report on adaptation priorities, adaptation measures, necessary support, plans and actions. The PCA foresees that developing countries that are Member States of the PCA will receive support for their adaptation activities.
- Losses and Damage (Article 8): The PCA significantly strengthens Warsaw's international loss and damage mechanism, which will develop ways to help the most exposed countries to climate change cope with the negative impacts of climate change, including extreme weather and slower development phenomena such as rising sea levels. The PCA provides a framework for improving the action and support of Member States relating to losses and damage.
- Financial, technological and performance support for developing countries (Articles 9, 10 and 11) - The PCA foresees commitment of developed countries to help developing countries to build a climate-friendly and climate-resilient future while also providing voluntary engagement from developing countries. The resources available should be used in such a way to maintain the balance between adaptation and mitigation

measures. In addition to reporting on financial contributions already made by developed countries (which are Member States of the PCA), they should report every two years on the amount of aid planned. The PCA also foresees that the achievement of climate objectives will be supported by the Convention's Financial Mechanism, including the Green Climate Fund (GCF). Significant investments are intended to ensure the performance of developing countries, including strengthening institutional performance and creating a climate-friendly technology development framework.

- The PCA intends to pay serious attention to actions such as climate change education, teaching, building public awareness, public engagement and access to information (Article 12).
- Transparency (Article 13), Enforcement and Compliance (Article 15): The PCA is based on a well-functioning and transparent reporting system which allows to achieve a clear picture of Member States' actions and support to climate objectives, including different situations and opportunities of Member States. In addition to the obligation to provide information on climate change mitigation, adaptation and support, the PCA requires that the information submitted by Member States undergo an international evaluation. The PCA also provides a mechanism that allows to assess the implementation of PCA and the compliance of the objectives of the agreement of Member States in a non-punitive way, and how to report it annually to the Conference of Parties (CMA).
- Global Monitoring and Measurement (Article 14): Measurements on collective progress towards the PCA target are planned from 2023 onwards, repeating the evaluation every five years. Information on the results of measurements and the assessment of progress is intended to be provided to the PCA Member States to improve their actions and international cooperation to achieve climate objectives. The milestone monitoring will take into account the long-term objective to be achieved progressively under Article 4 of the PCA.
- Decision 1/CP.21 provides a number of measures to strengthen actions before 2020, including technical research processes, the provision of urgent financial and technological assistance, as well as assistance and measures to strengthen high-level engagement.

1.1.2. Long-term energy, environment and climate policies at European level - European Union framework

EU environmental and climate objectives

Entrepreneurs need a stable legislative environment aimed for long-term structural changes rather than regular changes to the legislative framework for short-term policies and actions. Particularly for this reason, EU has prepared and approved climate and energy policy framework until 2030, which will specifically promote moving towards to a low-carbon economy and by highlighting stricter restrictions on carbon-generating activities and a significantly greater role in the use of renewable resources and highly energy-efficient technologies.

One of the main questions when setting ambitious energy and climate objectives is – by which policy instruments these objectives can be achieved by? If ambitious carbon reduction targets are set in place, economic instruments will most likely have to be applied, enabling the “external costs” of this economy to be applied to all economic activities. Prices are one of the most effective ways of disseminating information in the economy and influencing both producer and consumer behaviour at both macro and micro levels. In the context of energy and climate

objectives, this means either setting tax or pollution limits (so-called “cap”). Accordingly, the effects on economic activities are direct with tax by setting the price for pollution, or indirect by determining the allowed level of pollution.

European Energy Union strategy (EEUS)

The EU's environmental and climate ideology and objectives have developed in the longer period through the preparation and approval of a number of energy-related strategies, which have been framed in the EU Energy Union strategy, which includes all the key energy and environmental aspects. The full name of the Energy Union strategy – A framework strategy for a resilient Energy Union with a forward-looking climate change policy – points to an integral link between EU energy policy and climate objectives. Base principles from documents as the Energy 2020 Strategy adopted in 2010, the 2011 EU Energy Road Map 2050, the 2014 analysis of The energy dependency of the Member States: Indicators-based assessment, the 2014 EU Energy and Climate Framework 2020-2030 and 2014, the European Energy Security Strategy serve as the ideological basis of the EEUS. As EEUS both chronologically and on idea is the latest major framework of the EU's energy and climate policy, therefore EEUS plays a key role to move EU towards a comprehensive and global transition to a low-carbon economy.

Energy 2020 strategy

When assessing the future development of energy and climate issues, the Energy 2020 strategy for competitive, sustainable and secure energy states directly that the potential price of a flawed energy and climate policy is too high. The strategy concludes that because fundamental changes in the energy system require time, even immediate actions do not guarantee that the structural changes needed for transition to a low-carbon economy will be possible by 2020, which is the time frame of strategy. Therefore, the Energy 2020 strategy points the need to look forward 2020 when planning energy and climate policy, in order to ensure that the EU is able to achieve its objectives of fully establishing a secure, competitive low-carbon energy system in the long term by 2050. In response to this long-term objective, the European Commission committed itself to prepare a road map for the implementation of the measures highlighted in the Energy 2020 strategy by 2050, with further and additional steps for those already identified in the Energy 2020 strategy. It can be assured Energy 2020 strategy has put a strong basis for further work on preparing Europe's energy policy, including clearly highlighted core values in thinking and actions to overcome future challenges.

EU Energy road map 2050

The EU Energy Road Map 2050 highlights the European Commission's vision of the challenges towards the EU's decarbonisation target, taking into account security of energy supply and competitiveness aspects of the European economy. Consumers' interests are in the centre of all measures – the well-being of European citizens, industrial competitiveness and the ability of society to work together depends on safe, sustainable and affordable energy.

Energy dependency of Member States: Assessment based on indicators

In an analysis published in 2014, the energy dependency of Member States: An indicator-based assessment assessed the impact of energy price on the economies of Member States of the European Union. The analysis concludes that rise in energy price have affected the economies of the Member States, which have had a direct and negative impact on households

and industrial energy consumers, therefore an energy policy should be adopted and measures should be taken to reduce the vulnerability associated with risks of energy supply and upward going prices, particularly taking into account the different situations of the Member States and the different energy portfolios.

EU Energy and Climate Framework 2020-2030

In 2014, the EU Energy and Climate Framework 2020-2030 was adopted, based on the priorities set out in Article 194 of the treaty of the European Union aiming to strengthen regional cooperation between Member States in order to continue market integration, preventing market distortions and helping them to achieve the overall energy and climate objectives as cost-effective as possible. The framework underlines the importance of improving energy security through joint action, energy market integration, diversification of energy resources, sustainable development of local energy resources, investment in the necessary energy infrastructure, the development of a carbon-intensive and competitive energy system through final consumption energy efficiency, research and innovation.

European Energy Security Strategy (EESS)

Less than a year before the European Energy Union Strategy (EEUS) was announced, the European Energy Security Strategy was published and adopted in 2014, serving as the last stepping stone on the road to the EEUS. The EESS and the EEUS have common that both strategies were prepared and adopted in a difficult international relation environment. The Russian Federation, which is one of the largest and most important supplier of energy resources to the European Union, carried out non-compliance with international law by occupying Crimea and creating threats to regional security in Europe. At the same time, these conditions served as another incentive for EU Member States to plan and develop an energy and climate policy that would prevent or substantially reduce vulnerability associated with the risks of energy supply rupture, both in individual Member States and in the EU as a whole. The EESS is characterised by eight key elements which include fundamentally important principles for the future development of the European energy system, which at the same time provides closer cooperation and solidarity between Member States and respects the national sovereignty aspect of building the energy portfolio, as mentioned in Article 194 of the treaty of EU:

1. Immediate action aimed at increasing the EU's capacity to overcome significant disruptions to energy supply in Winter of 2014-2015;
2. Strengthening emergency situations and solidarity mechanisms, including coordination of risk assessment and emergency actions and the protection of infrastructure of strategic importance;
3. Management of energy demand;
4. Building a fully operational and fully integrated EU internal market;
5. Increasing the share of energy produced in the European Union;
6. Further development of energy technologies;
7. Diversification of external energy supplies and related infrastructure;
8. Coordination of national energy policies and a common position in external energy relations.

It is important to see the succession of the European Energy Union arising from the European Energy Security Strategy: five dimensions of the EEUS ideologically repeats the

Energy Security Strategy is more focused by developing it further and clarifying aspects relating to energy efficiency and the decarbonisation of the economy.

The EEUS covers the main elements of the energy system — production, transmission, storage and trading:

1. Energy security, solidarity and trust;
2. A fully integrated European energy market;
3. Energy efficiency promoting demand management;
4. Decarbonisation of the economy;
5. Research, innovation and competitiveness.

The overall vision of the EEUS is detailed by 15 action directions and strengthened by a road map with projects, time frames and guidelines for those responsible for the implementation of the road map. It can be argued whether the measures on the road map come from the road map or the road map was made up of existing measures, but it can be said with certainty that cause is mutual. When the EEUS was announced at the beginning of 2015, there was scepticism and even optimists pointed out that there was nothing new in this strategy that it merely combines existing EU energy policies and activities under one roof. The EEUS is built on the need to deal with real situations and is focused on the consumer, because of positive business impacts, the EEUS is also supported by major players in the sector, so it can be safely argued that the EEUS serves as a framework for the future development of the energy sector.

Clean energy for all Europeans (CEFE)

At the end of 2016, the European Commission's Clean Energy Report was published for all Europeans, which highlighted action directions and measures that will enable the EC to accelerate the transition to clean energy, boost growth and employment based on the principles mentioned in the European Energy Union Strategy. The EEUS was one of 10 current major priorities of the EC that needs to be viewed together with other major EC initiatives, such as the Digital Single Market, the Capital Markets Union and the Investment Plan for Europe: all these initiatives aim to create jobs, boost growth and attract investment in Europe.

The CEFE package is expected to reduce EU carbon intensity by 43 per cent by 2030, compared to 2016 and the share of renewable energy will increase up to half of the electricity generated in EU. The CEFE package has three main objectives: making energy efficiency an absolute priority in all economic activities and daily; making the European Union a global leader in the use of renewable energy; making energy and energy use more comprehensible and accessible to consumers. For these purposes, starting with 2021, the EC intends to spend an additional €177 billion annually on public and private investment, generating annual growth of up to 1 per cent of EU GDP and creating nearly a million jobs over the next decade.

The EU's 2030 energy and climate targets require nearly €380 billion of investment annually over the next ten years. These resources, which are intended to be mobilised from EU companies, are needed for investments primarily in energy efficiency, renewable resources and infrastructure. The transition to a low-carbon economy should be seen as creating new opportunities for industry and the economy, considering that €27 billion annually will be invested in public and private research aiming to create and commercialise innovation.

Priority - Energy efficiency

In the report Clean energy for all Europeans, the European Commission reviewed only two years previously set 27 per cent energy efficiency target to be reached by 2030, setting a new 30 per cent improvement target, estimating that the target increase will contribute an additional €70 billion to EU's GDP, will help create a further 400000 jobs, reduce the EU's dependency on imported fossil fuels, achieving the set 2030 GHG emission reduction and increasing the renewable energy share target.

Global leadership in the use of renewable energy

The 2030 renewable energy target for CEFE is set at least 27 per cent of the final consumption and is binding on the EU as a whole without setting a binding individual target for Member States. Member States are expected to contribute sufficiently to the EU's overall objective by means of a new instrument – the National Energy and Climate Plan – which, until now, links energy and climate themes and objectives in an unprecedented way. EU Member States should submit their first national energy and climate plan to the EC by the end of 2019.

More understandable and affordable energy for consumers

The EC intends to improve operation of the energy market by education and information, strengthening consumer's opportunities and the capacity to make energy consumption and market-related choices. For business consumers this means better competitiveness. The ability to make better choices is based on better availability of information and awareness of energy consumption and costs. Legislative initiatives are designed to build around the European Energy Union's core principle: the consumer is the most important. The introduction of smart meters, understandable and informing bills, easier options for changing energy suppliers, eliminating traders' early replacement fines, certified comparison tools for traders, energy performance certificates for consumer sources with a smart indicator are some of the main directions for strengthening the consumer.

European Green Deal

The communication "European Green Deal" (EGD), published by the European Commission on 11 December 2019, reinforces existing strategic policy documents to address CO₂ reduction, energy efficiency and the use of renewable energy sources, highlighting two key action directions: preparing a set of policies geared towards change and including sustainability principles in all policies of the European Union.

EGD highlights eight directions of policies whose main idea is ambitious climate objectives, clean and affordable energy, the circular economy, the efficient use of energy and resources, sustainable and smart mobility, fair and environmentally friendly production of healthy food, the preservation and restoration of ecosystems and biodiversity, and the commitment to eliminate any pollution. EGD highlights sustainable development as the most important horizontal principle to be taken into account in future in the policies of every sector of the economy, in particular by marking the link between funding and compliance with sustainable development criteria.

The European Commission (EC) intends to devote significant financial resources to research, innovation and climate neutrality, including review process of existing funding bodies

and financial institutions to the development of the low-carbon economy. EU Member States will also have to respect the principles of green funding in their national budgets, ensuring that Member States' resources are used to achieve climate objectives in closer coordination with EU financial resources. Finally, the EC intends to draw up and publish a European climate pact by March 2020, focusing on informing, educating and encouraging society to act responsibly on environment and climate.

1.2. Second phase

Based on the evaluated scientific and research papers (Puig, 2013), (Thomas Horschig, 2017), (Aikaterini Papapostolou, 201), as well as on reports and statements about assessment of performed policy development documents in the field of RES so far ((ECF), 2019), (Network, 2019), (IRENA, 2018), three approaches have been identified:

1. Assessment of quantitative policy;
2. Assessment of qualitative policy;
3. Assessment of hybrid policy, which combines assessment of quantitative and qualitative policy approaches.

A general classification of policy assessment approaches is shown in Fig. 1.1.

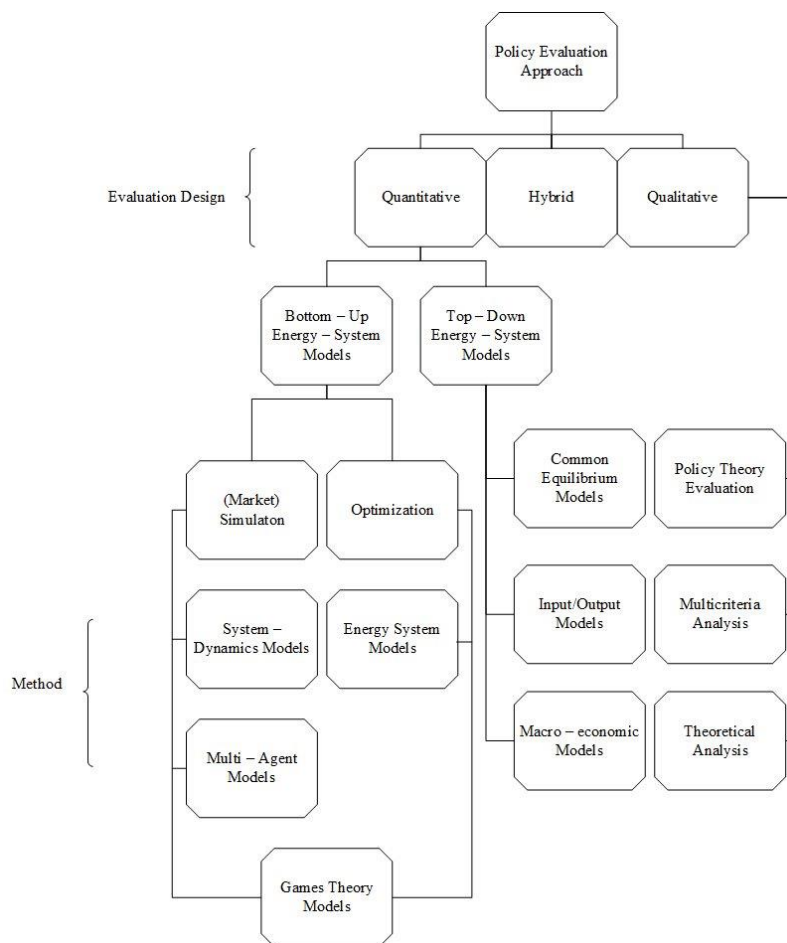


Fig. 1.1. Classification of policy document evaluation approaches (Thomas Horschig, 2017)

The assessment of quantitative policy is based on the Bottom-up and Top-down methods. Qualitative policy assessment is based on the policy theories (including theoretical analysis) and multi-criteria methods.

Sequentially, based on an analysis of the policy assessment approaches, a framework for the long-term framework for Latvia's energy, environment and climate policy in the field of RES was established.

The methodological approach used in the analysis is classified as a hybrid policy assessment, since quantitative and qualitative policy assessment approaches are combined.

1.2.1 Framework for evaluating policy documents

A framework for the evaluation of policy documents was developed in order to have a uniform analysis of policy documents that was based on the performed analysis of literature and policy documents on assessment of policy approaches.

The framework for the evaluation of policy documents was based on (IRENA, 2014) and (ECFs), 2019) studies. As well methodological approach (Puig, 2013) was included.

The framework for evaluating policy documents is shown in Table 1.1.

Table 1.1. Framework for the evaluation of policy documents

Policy Evaluation Framework
Long-term guidelines of policy documents for economics sectors in the field of RES.
1. Adequacy of objectives (adequacy measure)
<p>An analysis of the relevance to the EU targets for 2020 and/or 2030, also considering required outlook for activities until 2050, if any.</p> <p>Existing RES targets can be classified as follows:</p> <ul style="list-style-type: none"> • Inappropriate; • Appropriate; • Moderately ambitious; • Ambitious, e.g., expecting to reach a net zero emission level in 2050. <p>It is essential to determine whether and how the goals are justified, i.e. whether they are mechanically taken over from, for example, EU planning and development documents or whether they are specific to the local situation and the opportunities and needs of the sector.</p>

2. Policy details

Describes a set of policies and planned activities (instruments, measures, solutions, etc.): in the field of RES (including necessary investments, barriers (existence/absence/assessment of disruptive, competitive, exclusive, braking, parallel), existence/non-existence/assessment of policies, etc.).

The policy detail assessment is based on:

- qualitative criteria;
- quantitative criteria.

The qualitative criteria of the assessment are mainly related to the level of detail of the operation, activities and actions described in the policy, i.e. how specific and precise the main direction of operation is identified to achieve the policy objectives. This does not currently include and cannot include a comprehensive and full impact assessment and does not assess the possible effectiveness of the current or additional policy (i.e. the results achieved) or the accuracy of the information provided. This analysis looks at the details of the policy resulting from the available legislation and planning documents.

The qualitative criteria for policy detail shall also include a breakdown and clarification of the impacts of the policy identified, which may cover the following aspects:

- Implementation of RES based on the “polluter pays” principle;
- Distribution of revenue and expenses for the transition to RES;
- The potential of stakeholders and parties to participate in policy development.

For the assessment of existing and planned RES volumes, capacity and final consumption, the assessment is based on the quantitative criteria:

- Parameters of policy value/performance:
 - Existing (base) and planned (e.g., 2030) RES installed capacity, e.g., kW, MW, including dynamics and trends;
 - Existing (base) and planned (e.g., 2030) final consumption of RES per year, e.g., kWh, MWh, including dynamics and trends;
- Parameters of policy efficiency:
 - Existing (base) and planned (e.g., 2030) specific investments in RES, e.g., EUR/MW;
 - Existing (base) and planned (e.g., 2030) costs of final energy from RES, e.g., EUR/MWh.
- Planned funding, amount of support and type.

3. Quality of process.

In practice, they are the following criteria:

- Policy development process to assess the contribution of the parties involved, public engagement and format:
 - Early publication and transparent development of a policy document;

- Independent assessment, including interinstitutional harmonisation in sectoral terms, existence of strategic environmental impacts;
- Public consultation options and solutions;
- Institutional capacity and amount of human resources of the responsible authority.
- Policy development time axis and relevance to policy format.

Conclusions, comments and recommendations

Main conclusions on the particular policy development document in the field of RES.

1.2.2. Analysis of the long-term energy, environmental and climate policy framework for the AER sector algorithm

In turn, a special algorithm adapted for planning of Latvia's development was developed in order to ensure the possibility of evaluating policy documents in a uniform manner and obtain easier understandable and usable evaluation results.

The structure of the algorithm is based on the framework for evaluating the policy documents described and the three dimensions included:

1. The adequacy of objectives;
2. Policy detail;
3. Quality of process.

The algorithm itself is designed to allow systematic analysis of policy documents across all sectors of the economy, taking into account all levels of planning documents and their hierarchy. An expanded algorithm is shown in Fig. 1.2.

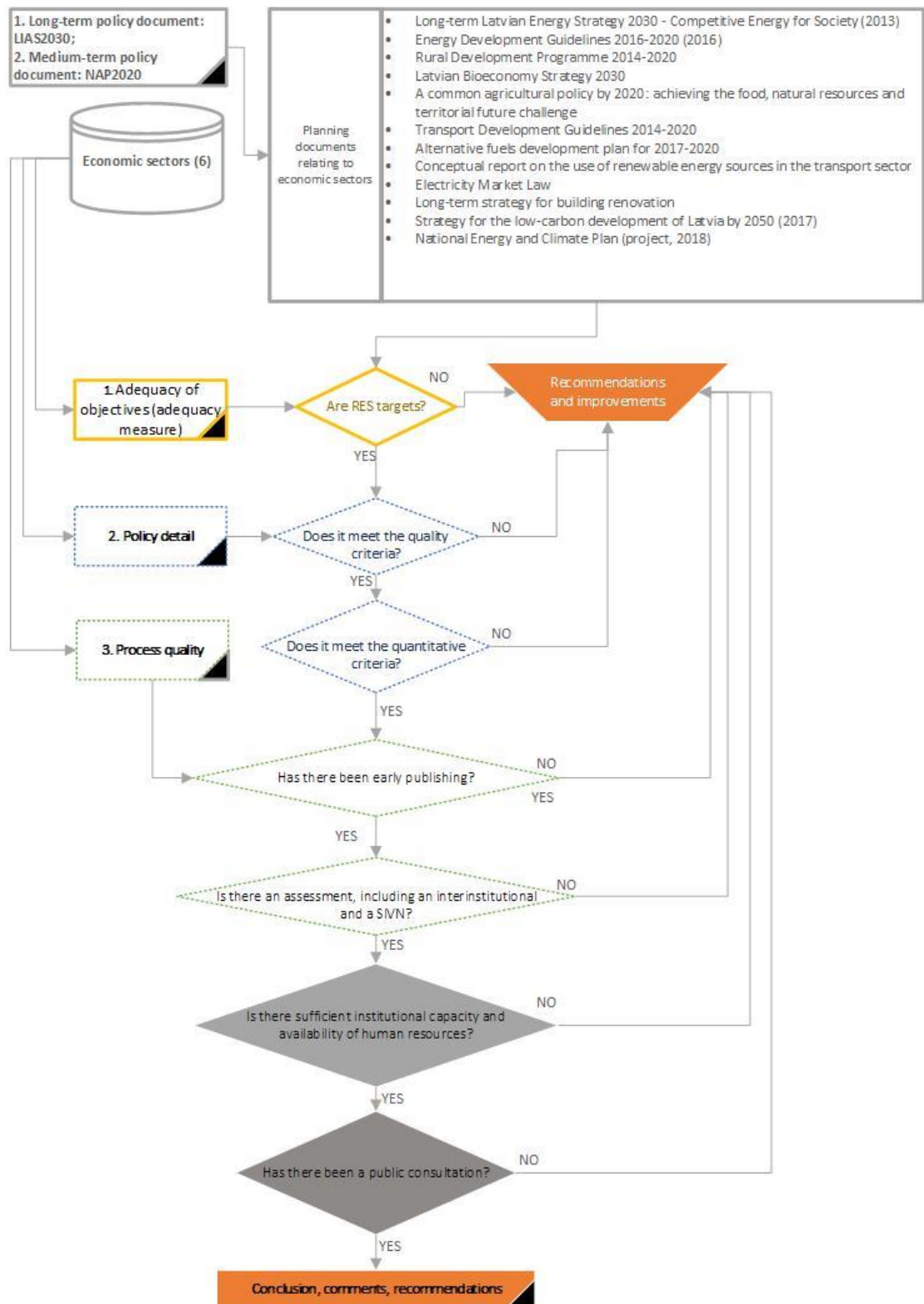


Fig. 1.2. Analysis of the long-term energy, environmental and climate policy guidelines for the RES sector algorithm

1.3. Third phase

In this phase, the long-term energy, environmental and climate policy guidelines by economy sectors in the field of RES are evaluated, taking into account the principles of long-term planning documents in Latvia.

At first, the development of a given economic sector in the field of RES are identified in the long-term and medium-term development planning documents higher in hierarchy. After, the specific development and planning documents for a given economic sector and the directions and objectives to be achieved (if marked) in the field of RES are identified sequentially.

The analysis of the long-term energy, environmental and climate policies in the field of RES is based on the evaluation of existing planning documents by economic sector. The sectoral division is based on the existing approach of the CSB and are as follows (6 economic sectors in total):

- Energy transformation sector;
- Industry (including construction) sector;
- Transport sector;
- Agricultural sector;
- Commercial and public sector;
- Household sector.

Another justification for sectoral division is the amount of energy consumed in the sectors. For example, the largest consumer of energy resources in 2018 was the transport sector, which consumed 30.1%, while households – 28.8%, and industrial sector – 22.9% of total energy consumption in the country (Central Statistical Bureau, 2019).

1.3.1. Development of long-term planning documents' principles in Latvia

In order to be able to go into and understand the planning and development documents assessed, as well as to assess their linkage with RES, the principles for the development of long-term planning documents in Latvia were identified.

Firstly, planning documents (including key development directions and guidelines) must respect the hierarchy of planning documents and ensure compliance with the principle of coherence in development planning.

Secondly, planning documents should be integrated into a single framework, taking into account the level of the document (national, regional, local) and the duration (long-term, medium-term, short-term) (Cross-Sectoral Cooperation Centre, 2016).

Thirdly, as a separate division for planning documents is an appropriate economy sector which are directly affected by them.

Hierarchically the highest national level **long-term planning document is Sustainable development strategy of Latvia (LIAS2030)**.

Hierarchically the highest medium-term planning document is the National Development Plan (NAP2020). Given that the final draft version of the new National Development Plan for 2021-2027 was completed only on 20.12.2019, it is not covered by this analysis for all sectors, except for industrial sector.

The planning framework of development and hierarchy of existing policy documents, as well as the significance in Latvia are summarised in Fig. 1.3.

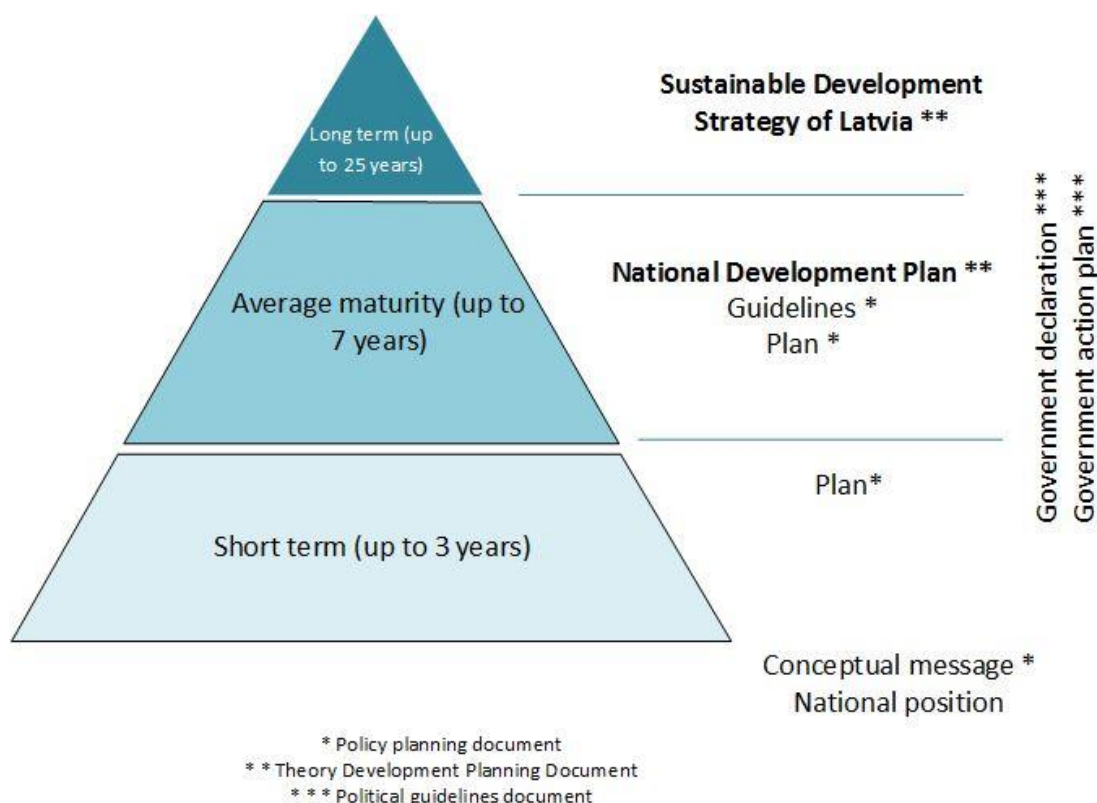


Fig. 1.3. Development planning in Latvia (Cross-Sectoral Coordination Centre, 2016)

Development planning documents, which are prepared for a particular economic sector or in general for one field, must comply with the national development objectives specified in the Sustainable Development Strategy of Latvia and the National Development Plan.

When drafting a planning document for any level and duration, it must be consistent with hierarchically higher planning documents (vertical integration), and compliance or non-overlapping with other policy planning documents (horizontal integration), identifying their interlinkage:

- non-overlapping: clearly separated competencies and information exchange to avoid collision between sectoral policies;
- compliance: agreement and synergy between sectoral policies, common priorities, and an extended policy perspective.

The interlinkage of policy planning documents can be explained by:

- 1) assumptions and forecasts;
- 2) the hierarchy of results and performance indicators;
- 3) evidence based research;
- 4) opinion of experts or professionals in the relevant field and/or sector who have acquired the rights or status of an expert in a given field.

2. LONG-TERM GUIDELINES FOR LATVIA'S ENERGY, ENVIRONMENT AND CLIMATE POLICY

This section summarises an analysis of the long-term energy, environment and climate policy framework for RES in the relevant sectors of the economy.

2.1. Energy transformation sector

The energy sector, in particular the transformation of energy, is linked to other sectors, since it provides transformation of energy sources (primary energy sources) into useful or usable energy (final consumption).

The energy sector has close and more direct links to the household, industrial and agricultural sectors. Less direct links are with the transport sector.

Currently, a directly targeted policy for the energy sector is the “Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society (2013)” (Ministry of Economy, 2013) and **Energy Development Guidelines for 2016-2020 (2016)**.

Energy affecting planning documents and policies are as follows:

- Latvia 2030 – Sustainable Development Strategy of Latvia until 2030 (2010);
- Parliament’s statement on National Development Plan of Latvia for 2014-2020 (2012);
- Latvia’s Low-carbon development strategy until 2050 (2017);
- National Energy and Climate Plan (project, 2018).

2.1.1. Information report “Long-term Energy Strategy of Latvia 2030 – Competitive Energy for Society (2013)”

In order to reduce import of energy sources (e.g., fossil fuels, natural gas) and to promote local energy production, the Strategy 2030 also focuses on promoting the use of RES in electricity and heat generation, and the transport sector. Latvia aims to reach a 40% share of energy produced from renewable energy sources by 2020. By 2030, a non-binding 50% RES threshold for gross final energy consumption can be achieved by introducing market-based, technologically neutral support and ensuring an appropriate tax and emission trading policy.

2.1.2. Energy Development Guidelines 2016-2020 (2016)

This section describes results of the policy analysis for the energy transformation sector in the field of RES.

Table 2.1. Policy document analysis: energy transformation sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p>Reach 40% of RES in final consumption by 2020.</p> <p>Share of RES in gross final energy consumption in transport 10%.</p> <p>The RES targets are in compliance with those set by EU Member States.</p>
<p>2. Policy detail</p>	<p>Promotion of the use of RES in electricity and heat generation and the transport sector.</p> <p>The following steps are identified to achieve the RES target:</p> <p>5. Increase in the share of RES</p> <p>5.1.1. Maintenance of the electricity mandatory procurement component of EUR 26,79/MWh until 1 April 2019.</p> <p>5.1.2. Review of existing support mechanism for electricity generation in line with the EC Guidelines on State aid for environmental protection and energy for 2014-2020 (published on 28.6.2014).</p> <p>5.1.3. To develop amendments to the regulatory enactments regulating the mandatory procurement of electricity and the guaranteed fee for the installed capacity of the power plant, taking into account the results of coordination with the EC.</p> <p>5.1.4. Develop a new State aid mechanism for electricity generation through the RES, in line with the EC Guidelines on State aid for environmental protection and energy for 2014-2020 (published on 28.6.2014).</p> <p>5.1.5. Reconcile the new state aid mechanism for electricity generation using RES with the EC.</p> <p>5.1.6. Introduce a state aid mechanism for energy-intensive processing industry traders.</p> <p>5.1.7. Prepare and submit EC reports on progress made on the share target of energy produced from RES.</p> <p>5.1.8. Carry out an assessment of the subsidized electricity tax during the annual state budget process and, if necessary, a review.</p> <p>5.1.9. Improve the system of acknowledgement of origin in line with the principles of the European Energy Certificate System and implement a functional national register of acknowledgment of origin.</p> <p>5.1.10. Assess the need to amend the methodology for calculating the Natural Resources Tax, using comparable conditions regarding to all HES.</p>

	<p>5.1.11. Prepare and submit a MC report on additional measures needed to achieve the RES target.</p> <p>Direct promotion of use of RES in the energy sector is not observed, with the exception of maintaining the mandatory procurement component for electricity or revising the existing support mechanism for electricity generation in line with the EC Guidelines.</p> <p>No specific actions have been identified to increase the share of RES.</p>
3.Process quality.	<p>On 28 May 2013, the Cabinet of Ministers (hereinafter - CM) took note of the information report “Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society” (hereinafter - Energy Strategy 2030), asking the Ministry of Economy (hereinafter - ME) to draw up and submit to CM energy policy guidelines for the period until 2020.</p> <p>During the development of the Energy Policy Guidelines, an information report “On the financing of energy policy for the period 2014-2020” was prepared, which was discussed at the meeting of the CM on 20 May 2014.</p> <p>On 23 October 2014, the draft guidelines developed by ME were submitted to public deliberation and inserted on the EM website. (https://em.gov.lv/lv/par_ministriju/sabiedribas_lidzdaliba/diskusijai_nodotie_dokumenti/)</p> <p>In addition to the public deliberation on the ME website, on 22 November 2014, the Energy Sub-Committee of the Council of Economic Affairs held a consultation meeting on the draft guidelines with the participation of industry and public representatives. In addition to these meetings, a number of meetings were also held with representatives of individual sectors to discuss the issues to be addressed in the draft guidelines. The proposals submitted by industry representatives were assessed at the meeting of the State Secretaries before and after the announcement of the draft guidelines and the draft guidelines have been clarified.</p> <p>A Strategic Environmental Impact Assessment has been prepared – a public consultation has been held on 29 April 2015.</p>
Conclusion	<p>Overall, the energy transformation sector sets out precisely defined national targets to be achieved in the field of RES and meets EU requirements. They are mechanically transferred from EU development policy objectives to EU Member States.</p> <p>It would be advisable to indicate how the related fields and/or sectors will implement the targets in the field of RES.</p>

2.2. Transport sector

The development of the transport sector and its contribution to the overall national targets in the field of RES is very essential.

2.2.1. Sustainable Development Strategy for Latvia until 2030

The chapter “Energy efficient and environmentally friendly transport policy” of Strategy, as recommended solutions suggest promote the transition of public transport and private road

transport to electric drive, biogas and biofuel-powered and hybrid-powered vehicles, thereby reducing environmental pollution and the consumption of fossil energy.

Energy consumption in transport accounts for about a third of Latvia's consumption of primary energy resources and is almost entirely based on imports of petroleum products, as the share of electricity and biofuels in transport energy final consumption is relatively small. The challenge for transport is the wider use of electric drive, both in public and private transport. Biofuels and biogas have good prospects in energy transport.

The use of renewable energy sources in the transport sector will be certainly linked to the development of electric motor technology, possibly also hydrogen engines. Latvia should be actively involved in the international cooperation, research, and knowledge-building in this area.

In the long term, the transition to the use of more environmentally friendly vehicles, electric cars and hybrid vehicles, particularly in large urban centres and agglomerations, should be encouraged. Gradual handling of public vehicles with local RES fuels and support for the use of fuel-saving vehicles at household level should be organised. Pilot projects to adapt transport infrastructure to the use of locally produced biogas and biofuels should be supported (Cross-Sectoral Coordination Centre, Latvia's Sustainable Development Strategy until 2030, 2019).

2.2.2. National Development Plan 2014–2020 (NDP)

Support implementation of new technologies and the rational use of resources, thereby reducing pollutant emissions in the energy, industrial, transport and agricultural sectors and households. Do not exceed the levels of long-term environmental pollution and greenhouse gases (by reducing energy, industry, transport, agriculture, fisheries and household pollutant emissions and waste generated).

In the context of the “Energy efficiency and energy production” direction, the tasks to be carried out relate to the development of support programmes for the transition to renewable energy sources in the transport sector and the provision of the necessary infrastructure, supporting only alternative energy sources that are economically viable, as well as supporting innovation which contributes to the use of economically viable alternative energy sources (Statement by the Parliament on Latvia's National Development Plan 2014-2020).

2.2.3. Information report “Long-term Energy Strategy for Latvia until 2030 – Competitive Energy for Society”

The Strategy 2030 states that one of the policy performance indicators to be achieved, which will show increased security and sustainability of energy supply, is the widest possible use of RES. Therefore, the Strategy 2030 sets a non-binding target of 50% of RES in gross final energy consumption by 2030. This will be achieved by increasing the share of RES in the heat, electricity and transport sectors.

The Strategy also notes that there is a significant market failure in providing energy efficiency, particularly in the buildings and transport sectors. In order to prevent this and promote energy efficiency in all sectors, the Strategy 2030 sets out preconditions, such as providing a public-sector model for energy efficiency measures in the transport, building and heating sectors through pilot projects, by publicly sharing information about them, including the possibilities to attract public and private funding for the projects. In order to reduce import rate of energy sources

(e.g., fossil fuels, natural gas) and to promote local energy production, the Strategy 2030 also focus on promoting the use of RES in electricity and heat generation and the transport sector.

A non-binding 50% RES threshold for gross final energy consumption can be reached by 2030, promoting a wider use of RES in public transport, including through further electrification of rail transport and the transition of public transport to biofuels, as well as the development of private electric road transport infrastructure, ensuring the introduction of a uniform charging network standard (Ministry of Economy, 2013).

2.2.4. Strategy for the Low-carbon development of Latvia until 2050 (LCD)

LCD outlines a vision for reducing emissions: targets and ways of achieving targets, including the transport sector. The successful implementation of the strategy has identified challenges, including in the transport sector – the reduction of GHG emissions and the gradual transition from the use of fossil fuels to RES and the introduction of alternative means of transport.

LCD highlights GHG emission decoupling from economic growth. GHG emission decoupling from GDP means simultaneous economic growth in the country and simultaneous reduction in GHG emissions. The decoupling of GHG emissions depends mainly on which alternative renewable energy resource are used in energy, production processes and the transport sector, and on the reduction of fossil fuel dependency, as well as on the implementation of different energy efficiency measures, and how changes public thinking.

Solutions to ensure low carbon development in the LCD strategy foresee a vision for 2050, as how Latvia has developed in each sector affected by the development of GHG emissions. LCD can be implemented in various sectors, strategy provides the following division: energy, transport, land management, global energy efficiency, consumption, technology research and innovation. The division covers as many areas, sectors and different angles as possible, where changes and significant improvements can be potentially made with an aim to achieve carbon neutrality and sustainable sectoral development.

Chapter 5.3 “Resource efficient and environmentally friendly transport” describes in detail the measures to be taken to reduce emissions in the transport sector. LCD expects significant reductions in emissions from the transport sector in 2050, mainly due to a variety of initiatives and innovations in transport infrastructure and vehicle technologies, as well as changes in society's daily habits. The electrification of road transport is an essential part. Road transport is mostly electrified and the charging infrastructure is widely available. Most citizens and businesses use electric vehicles as light passenger car and trucks. Electric vehicles have become dominant transportation type since technological development allow to drive greater distance and do not generate GHG emissions. Road transport is mostly electrified and the charging infrastructure is widely available.

The charging infrastructure for electric vehicles is available on TEN-T30 roads and cities, allowing for easy and rapid charging of electric vehicles. Most charging stations are fast-charging, which means that it takes little time to charge the transport without causing inconvenience to car users. Electricity for charging of electric vehicles are mostly obtained from RES (Chapter 5.1).

The distribution of electric vehicles has also contributed to the development of the operating infrastructure by providing available and developed services, favourable financial

solutions for the purchase of electric vehicles and links to intelligent transport systems. The tax system fully complies with the “polluter pays” principle, which has reduced fossil fuel-powered vehicles for private purposes to a minimum.

State administration and local government authorities have renewed their automobile park with environmentally friendly alternative fuel vehicles, thereby ensuring the fulfilment of the criteria for green public procurement and giving an example to society.

Similarly, air transport efficiently uses biofuels and alternative fuels of future generations, and energy-efficient solutions are integrated into aircraft and airports. Rail transport is electrified and/or other alternative fuels are used for transportation. Water transport uses alternative fuels and energy-efficient solutions to reduce fuel consumption (Strategy for the low-carbon development of Latvia by 2050)

2.2.5. Latvian bioeconomy strategy 2030 (LIBRA)

One of the most important causes of the problem is global dependency on fossil resources, which are widely used not only in energy and transport. Increased use of renewable bioresources can reduce the dependency on fossil resources, which is also typical to the transport sector. In relation to the transport sector, reference has been made to biofuels: LIBRA points out that biofuel production is generally considered to be a transitional resource while vehicle electrification is developing. At the same time, in the future biofuels could be used in cases where electrification is difficult to introduce (Latvia's bioeconomy strategy 2030).

2.2.6. Transport Development Guidelines for 2014–2020

In Latvia, as elsewhere in Europe and the world, transport plays a key role in the economy and accessibility. The share of transport in GDP has been around 10% in recent years, employing around 9% of the population. It is important for Latvia to make an optimal use of its beneficial geographical location, as well as evenly distribute road and railway network in order to increase country's economic growth.

Transport Development Guidelines for 2014–2020 (updated in 2018) are the main policy document for the transport sector.

Table 2.2. Policy document analysis: transport sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p>According to the National Development Plan of Latvia for 2014-2020 (“NAP2020”), the main theme “Economic breakthrough” and the priorities – “Growth of National Economy”, “Human Securability” and “Growth for Regions”, the transport policy aims for a competitive, sustainable, co-modal transport system that ensures high quality mobility by using resources efficiently, including EU funds.</p>
<p>2. Policy detail</p>	<p>The chapter on closely related other development planning documents highlights the objectives to be achieved in the “National Reform Programme for the implementation of the EU 2020 strategy” for the transport sector in the field of RES: the share of</p>

	<p>renewable energy in the transport sector must reach at least 10% of gross final energy consumption in transport.</p> <p>In turn development direction “2. Established internal and external reach and opportunities for high quality mobility throughout the country” description, measure 2.5.1 “Establishment of electric vehicle charging infrastructure in Latvia [4.4.1 SAM Developing the charging infrastructure for electric vehicles in Latvia]” is the only measure where linking and compliance with the field of RES is indicated. Consistency with the priorities of NAP2020: “Support for the transition to renewable energy sources in the transport sector and providing the necessary infrastructure, supporting only alternative energy sources that are economically viable, as well as supporting innovation that contributes to the use of economically viable alternative energy sources.”</p> <p>Necessary funding and potential sources: 8.4 million EU funds for the 2014-2020 planning period, national budget.</p>
<p>3. Process quality</p>	<p>The guidelines for transport development for 2014-2020 have been developed and approved in 2013.</p> <p>In 2017, guidelines had interim evaluation which concluded that, due to different circumstances, some important points in the guidelines need to be clarified. The full explanation of the clarifications is made in Chapter 6.1.</p> <p>Amendments to the Transport Development Guidelines 2014-2020 (Regulations of the Cabinet of Ministers No. 73 on 27 February 2018 “Amendments to the on Transport Development Guidelines for 2014-2020”) have not changed the objective of the guidelines, the direction of action, the basic policy principles, the nature of the current situation, the linkage with other planning documents and the description of the problems, as the information refers to the whole time-period of the guidelines, and as concluded in the interim evaluation, would not be changed in the middle of the period.</p> <p>Some of the results, targets and measures to be achieved have been clarified and the results have been supplemented with the indicators achieved by 2016. A brief justification for the amendments is given in a separate chapter.</p>
<p>Conclusion</p>	<p>The RES guidelines do not define the quantitative targets that should be achieved in the transport sector, despite the fact that “the National Reform Programme for the implementation of the EU 2020 strategy” states that the share of renewable energy in the transport sector must reach at least 10% of the gross energy consumption in the transport.</p>

2.2.7. Alternative fuels development plan 2017-2020

The alternative fuels development plan 2017-2020 (hereafter – Plan) is designed to reduce the negative environmental impact of transport and to take over the requirements of Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (hereafter – Directive 2014/94/EU), as well as to meet the requirements of the Cabinet of Ministers on 13 September meeting No. 45 52, § TA -1907-IP (restricted access information), completing the task referred in point 7.2.

Table 2.3. Policy document analysis: transport sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p>The Plan aims to identify the necessary research and analysis directions that will result in the development of a future policy on the deployment of alternative fuels in certain transport sectors to reduce greenhouse gas emissions.</p>
<p>2. Policy detail;</p>	<p>The Plan states that “without taking into account the reduction in the share of fossil fuels in final consumption, Latvia may not reach the 10% RES target in transport by 2020.”</p> <p>Towards action 1.2. “To carry out an assessment within the framework of the “Tax Policy Guidelines for 2017-2021” regarding the tax reliefs for vehicle users of CNG, LNG and FCEV, with biofuel, paraffinised and synthetic fuel obtained from RES, and also the possibility to change the excise duty rate for diesel fuel by approximating it to the highest petrol rate for the time being.”</p> <p>Performance: The most appropriate tax solutions in the field of taxes for more efficient use of CNG, LNG and FCEV, biofuel, paraffinised and synthetic fuel obtained from AER for promoting the purchase of adapted vehicles.</p> <p>Performance indicator: assessment has been carried out.</p> <p>Deadline: until 31.12.2019.</p> <p>Responsible institution: Ministry of Finance, co-responsible institution: Ministry of Economics and Ministry of Transport.</p> <p>Towards action 1.4. “To carry out an assessment within the framework of the “Tax Policy Guidelines for 2017-2021” in the order to ascertain the possibilities for reducing the vehicle operation tax load for ecological vehicles (PHEV, FCEV, with biofuel, paraffinised and synthetic fuel obtained from RES, hybrids, midget cars, etc.) with CO₂ less than 50 g/km.”</p> <p>Performance: Proposals for the vehicle operation tax rates for environmentally friendly vehicles.</p>

	<p>Performance indicator: assessment has been carried out.</p> <p>Deadline: until 31.12.2019.</p> <p>Responsible institution: Ministry of Finance, co-responsible institution: Ministry of Economics and Ministry of Transport.</p> <p>Towards action 2.6. "According to the research results of section 1.1 of the Plan, to develop amendments to laws and regulations for promoting the purchase of CNG, LNG, FCEV vehicles, vehicles driven by biofuel, paraffinised and synthetic fuel obtained from RES."</p> <p>Performance: Aid for purchase of CNG, LNG, FCEV vehicles, vehicles driven by biofuel, paraffinised and synthetic fuel obtained from RES.</p> <p>Performance indicator: Amendments have been made to laws and regulations.</p> <p>Deadline: 31.12.2020.</p> <p>Responsible institution: Ministry of Transport, co-responsible institution: Ministry of Finance.</p> <p>Towards action 3.4. "According to the research results of section 1.1, to establish refuelling stations for vehicles which are driven by biofuel, paraffinised and synthetic fuel obtained from AER."</p> <p>Performance: publicly available refuelling stations of biofuel, paraffinised and synthetic fuel if it provided for in the research referred to in section 1.1.</p> <p>Performance indicator: Places of refuelling stations of biofuel, paraffinised and synthetic fuel (the number in conformity with that laid down in the research referred to in section 1.1).</p> <p>Deadline: 31.12.2020.</p> <p>Responsible institution: Ministry of Transport, co-responsible institution: Ministry of Economics and Latvian Association of Local and Regional Government.</p>
<p>3. Process quality.</p>	<p>For the development of the Plan, the Ministry of Transport established an interinstitutional working group involving representatives from the Ministry of Economics, Ministry of Environment and Regional Development, Ministry of Finance, VAS Road Traffic Safety Directorate, VAS "Latvijas Naval Administration", SIA "Hygen", association "Auto Association", Riga Technical University, association "Latvian Maritime Administration", Latvian Fuel Traders Association, Latvian</p>

	<p>Hydrogen Association, Association of Zero emission mobility support society, the Freeport of Riga, Latvian Academy of Sciences, Liepaja Special Economic Zone Authority, Freeport of Ventspils Authority, as well as invited experts to share their opinion on the working group meetings in the field of alternative fuels.</p> <p>For public participation, the project of the Plan was placed on the website of the Ministry of Transport on 2 September 2016.</p> <p>In accordance with law “On Environmental Impact Assessment” and regulations of the Cabinet of the Ministers No. 157 on 23 March 2004 “Procedures for the Strategic Environmental Impact Assessment” defined about the Plan, the Ministry of Transport has consulted the Nature Conservation Agency, the Health Inspectorate and the State Environmental Service regarding the Plan. As a result of the consultations carried out, the institutions have expressed the view that there is no need to carry out a strategic environmental impact assessment. The decision of the Environmental State Bureau also states that it is not necessary to apply the procedure of the strategic Environmental Impact Assessment.</p>
Conclusion	<p>Despite the fact that the transport sector is important for achieving the overall national targets in the field of RES, as the fact that, without regard to the reduction in the share of fossil fuels in final consumption, Latvia may not reach the 2020 RES target of 10% in transport, it can be concluded that the plan does not mark certain practical actions and activities to be implemented.</p>

2.2.8. Conceptual report “On the use of renewable energy resources in the transport sector”

The Regulation of CM intends to support the version of the solution contained in the conceptual report “On the use of renewable energy resources in the transport sector”, which anticipates the implementation of the activities referred to in section 2.1 (alignment of the regulatory base) of the conceptual report and the obligation referred to in section 2.3 (introduction of the mandatory obligation mechanism) referred obligation to provide the fuel traders a certain share of energy from renewable sources in the fuel used, the mandatory obligation requirements were introduced in reduced amount from 1 January 2019, but starting with 1 January 2020 in full amount, while maintaining the requirements of the mandatory blend, as well as by making changes to the regulation of CM No. 332 of 26 September 2000 “Requirements for conformity assessment of petrol and diesel fuel” and the regulation of CM of 18 October 2005 No. 772 “Regulations regarding requirements of biofuel quality, conformity assessment, market supervision and procedures for consumer information in Latvia” in order to ensure that starting from 2018 in the time frame from 1 April till 31 October diesel fuel can be traded only by adding at least 4.5-5 % of biofuel in the temperate climate, as well for arctic and severe Winter conditions.

2.3. Industry (including construction) sector

The largest energy consumer in 2018 was transport, which consumed 30.1%, households (28.8%) and industry (22.9%) (Central Statistical Bureau; 2019). Given the large impact of the

industrial sector on gross final energy consumption, it is important what policy and actions are planned in the planning documents to increase the use of RES in the industrial sector.

At the end of 2019, the following planning documents were in force and affected energy-related policy in Latvia:

- Latvia 2030 – Sustainable Development Strategy of Latvia until 2030 (2010);
- National Development Plan of Latvia 2014-2020 (2012);
- Strategy for the Low-carbon development of Latvia by 2050 (2017);
- National Energy and Climate Plan (project, 2018);
- National Development Plan of Latvia 2021-2027 (2019).

As it can be seen, long-term planning documents are not numerous and their objectives are set in general terms: the Sustainable Development Strategy of Latvia until 2030 (LV2030), the Strategy for the Low-carbon development of Latvia by 2050 (OMA2050), the information report: Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society.

There are a number of planning documents whose operation or ideological impact horizon is set by 2020, such as the Energy Development Guidelines for 2016-2020 and the National Development Plan for 2014-2020.

The planning documents do not directly mention the use of RES in the industrial sector, thus the choice of documents to assess is not easy. The use of RES can only be discussed contextually, mainly in terms of expanding energy resources and energy efficiency and deploying smart and flexible energy systems.

2.3.1. Latvia 2030 – Sustainable Development Strategy of Latvia until 2030

Latvia 2030 – Sustainable Development Strategy of Latvia until 2030 includes electricity micro-generation in paragraphs 218 and 222, stating that “production of dispersed and micro-level energy from renewable energy resources should also be developed in the private sector” and “In future also dispersed production of electricity would be possible and preferable, allowing private individuals to produce the electricity necessary for their households and to transfer the remainder to the joint transmission network”. According to the amendments proposed by the Ministry of Economy, electricity micro-generation is also intended to be stimulated for legal persons in future, in response to development trends in technology and network management.

At the level of the European Union's policy papers, the main directions for industrial development are highlighted by the EU's Industrial policy strategy. The European Commission has announced that it will launch a new Industrial policy strategy in March 2020, but till then the Renewed EU Industrial policy strategy approved in September 2017 is in force, which refers to the growing role of RES in the industrial sector with an emphasis on investment in carbon reduction and carbon neutrality, by introducing innovative production technologies and solutions on using RES. The Strategy points out that after 2020, quotas of Emissions Trading System (ETS) is planned to be used for the new innovation fund supporting large-scale demonstration projects of low-carbon technologies in energy-intensive industries, renewable energy resources and capture and storage of carbon. The Modernisation Fund is expected to support the modernisation of energy in ten lower-income Member States (Renewed EU Industrial Policy Strategy, 2017).

Similarly to the household sector, the role of the industrial sector will continue to grow in the future, with developing technological solutions that will be able to become a part of the demand response service system, making energy micro-generators as participants not only on the consumption side, but also on the storage and supply side.

2.3.2. Strategy for the Low-carbon development of Latvia by 2050

The strategy for the Low-carbon development of Latvia by 2050 (LCD2050) under section 5.5 “Sustainable consumption and production” is an indirect reference to promoting the use of RES – the idea of sustainable consumption and production includes the efficient use of resources and energy.

The EU aims to achieve a reduction of at least 80% of GHG produced in Europe by 2050 against 1990 levels. At the same time, the EU's objectives on economic growth, global competition, secure energy supply and social equality remain unchanged, which are also relevant for Latvia.

LCD2050 points out that in the target year “economic development is designed to maximise and fully use all raw materials, products and waste to save energy and reduce GHG emissions. The objective is achieved not only through technology but also by eliminating non-economic production and the unsustainable lifestyle and consumption of society in both public and private sectors. More intelligent designs and more efficient recycling can improve resource recycling and reduce total resource consumption” (Information report entitled “Strategy for the Low Carbon Development of Latvia by 2050”, 2018). The production models implemented by companies are based on innovation, focusing on the efficient use of resources throughout the product life cycle, ensuring that as few resources as possible are released into waste. Companies cooperate in resource management (industrial symbiosis) (Information report entitled “Strategy for the Low Carbon Development of Latvia by 2050”, 2018).

Increasing the share of RES in the industrial sector can make an important contribution to the reduction of GHG emissions, given that in 2015, 7% of Latvia's total GHG emissions were generated by industrial processes and the use of industrial products, as well as the use of chemicals. Although the amount of emissions in the sector are relatively small, it has a tendency to grow rapidly since 2009. The largest GHG emissions come from cement production, accounting for 63% of total CO₂ equivalent emissions from industrial processes in 2015. LCD2050 points out that considering anticipated industrial development trend, a further increase in GHG emissions can be expected, leading to an 11% increase in emissions in 2050 against 2015 and 19% increase compared to 1990 (Information report entitled “Strategy for the Low Carbon Development of Latvia by 2050”, 2018).

2.3.3. Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society

The information report “Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society” (Strategy 2030) highlights the reduction of energy costs and does not include direct references to the use of RES for the industry.

The Strategy 2030 refers to electricity micro-generation in the context of security of energy supply, stating that future network management and operational planning will need to take into account the increasing prevalence of micro-generation in order to be able to effectively integrate the electricity produced from the micro-generation process into the grid, and stressing that

decentralised micro-generation energy can only be effectively integrated into the grid on condition if energy supply networks are closely monitored, analysed and planned for their operation and development, and effective balancing of capacity in the network (Ministry of Economy, 2013).

One of the sub-objectives of the Strategy 2030 is sustainable energy, which guarantees energy sustainability in economic, social and environmental terms. This is intended to be achieved by improving energy efficiency and promoting efficient RES technologies. The Strategy 2030 does not mention the more extensive use of RES in the industry sector. In an indirect way, the conclusion on the use of RES can be derived from the emphasis on increasing energy efficiency if it is assumed that energy efficiency measures could be considered broadly, including the deep renovation of building engineering systems with following design and installation of the RES deployment solutions for electricity microgeneration. The Strategy 2030 states that energy efficiency should become a horizontal cross-sectoral policy objective, including it in other policy areas such as regional and urban development, transport, industrial policy, agriculture. This sub-objective is in line with the EU sustainability objective.

Electricity micro-generation as an option for legal entities was not envisaged during the preparation and approval of the Strategy 2030, but in 2019 the Ministry responsible for the sector made forthcoming amendments on the Electricity Market Law public, which provides the possibility for legal entities to participate in the net metering system (so, micro-generation). Such changes have the potential to increase the use of RES in the industrial sector.

Latvia's long-term policy planning documents and policy documents with other status do not refer to increasing the role of RES in the industrial sector, rather emphasising the importance of cheap or low-cost energy resources and importance of energy for industrial growth. For example, the Strategy 2030 points out that the sustainably lowest possible energy price, including safety and quality, is and will be the most important factor for industrial growth.

At the same time, the Strategy 2030 points out that one of the policy indicators to be achieved, which will show increased security and sustainability of energy supply, is the widest possible use of RES. Therefore, the Strategy 2030 sets a non-binding target to achieve 50% share of RES in gross energy final consumption in 2030. This will be achieved by increasing the share of RES in the heat, electricity and transport sectors.

2.3.4. National Development Plan of Latvia for 2021-2027

National Development Plan of Latvia for 2021-2027 (Final Draft 20.12.2019.) (NDP2027) contains a number of references to the role of energy in the development of the economy and society. NDP2027 points out that in the target year, the long-term dependency of the economy on fossil resources has been reduced and the share of renewable energy sources in energy production has been increased. The goal of priority "Quality living conditions and territorial development" of NDP2017 is defined as "The living environment provides for balanced regional development" [244] and includes a direct reference to the wider use of local, renewable energy and alternative resources. In turn, the availability and use of sustainable energy sources for energy production and production in general is a prerequisite for the competitive business. In order to reduce Latvia's energy dependency on fossil fuels and to increase the security of the energy supply in regions, scientific institutions' achievements in the wider use of cost-efficient local, renewable and alternative resources are significant for the state. Research and innovation are a driving force for the transition to a low-carbon economy [248].

The National Development Plan for 2021-2027 has been selected for assessing the adequacy of objectives, policy detail and process quality, as from the planning documents discussed above, NDP2027 contains the most directly and contextually relevant references to the wider use of RES in the industrial sector, as well as is the most recent document (which is still waiting for approval), and has a concrete time frame for implementation in the direction of specific tasks.

Table 2.4. Policy document analysis: industry (including construction) sector

<p>1. Adequacy of objective (adequacy measure)</p>	<p>NDP2027 does not include specific indications on the use of RES in the industrial sector, but when considering the role of RES more broadly in the economy and assessing the goals and objectives of the various action directions, it can be concluded that the wider use of RES in the industrial sector system comes from the intended context of RES and economic development.</p> <p>NDP2027 includes a precautionary approach to the use of RES, stating that “Climate change, the transition to clean energy and the reduction of social inequalities are closely linked dimensions which, in the event of rapid political initiatives, can heavily polarise different social groups and hinder their chances of achieving good quality of life” [254].</p> <p>The target indicators for the “Technological Environment and Services” action direction show a 47.5% share of energy produced from RES in total final energy consumption in 2027. Operational tasks specify how the indicator will be achieved by mentioning energy production for self-consumption as well.</p>
<p>2. Policy detail;</p>	<p>Guidance on the wider use of RES is included in a number of actions related to nature, the environment and technology of NDP2027. Policy detail is considered to be reassuring, sufficient, but not high. If conceptual policy objectives and principles are transferred to industry policy planning documents, there is a possibility that more details appear in the industry planning documents with specific quantifiable objectives.</p> <p>The “Nature and Environment” action axis contains references to a progressive but at the same time responsible climate, energy and environmental policy. It is noted that low-carbon and climate-resilient developments to reach the national objectives of climate, energy, air pollution reduction, improvement of water status and waste management, and to ensure the preservation and improvement of environmental quality, as well as the sustainable use of natural resources [257].</p> <p>It is also noted that an environmental, natural resources management and energy policy based on fairness and mutual trust is being implemented, public support for nature and climate protection measures, with clear and open models of public-population cooperation and involvement in decision-making [259].</p> <p>NDP2027 includes the indication that the country's dependence on energy import is decreasing, energy security will be increased and air pollution will be mitigated by improved energy efficiency and the</p>

	<p>substitution of fossil fuels by using local and renewable resources, in particular solar and wind energy [262], while noting that the decarbonisation of the economy is possible along with the quality available on the global market. and cost-effective discoveries of carbon-intensive technological solutions [263].</p> <p>The “Technological environment and services” action axis contains references to dispelled energy production, noting that, during the target period, innovative and energy-efficient solutions are available in energy supply, leading to a greater self-sufficiency and dispersed energy production [296].</p> <p>Indirectly, the need to increase the use of RES in the industrial sector is highlighted in the context of the development of energy supply infrastructure, where the main goal is cost-effective investment in the energy supply system and ensuring its sustainability, which is essential for addressing the risks of national energy supply, ensuring the operation of any infrastructure, as well as the functioning of the economy and competitiveness in general. The main support directions are energy supply infrastructure, energy production and energy management and energy consumption efficiency in different sectors. In order to improve overall energy efficiency and meet energy saving commitments, incentives will be needed to attract more private investment in this area, as well as support mechanisms to encourage citizens and businesses to make more use of renewable energy sources (including self-consumption) and additional investment to develop additional renewable energy production [301].</p> <p>Increasing energy security and independence and moving towards full integration of energy markets, continuing involvement in the synchronisation of the Baltic States' electricity networks and the creation of a single market for gas, while supporting microprojects for civil energy in order to involve households in the production of energy from renewable sources for own consumption and construction and restoration of energy-saving buildings [318].</p>
<p>3. Process quality.</p>	<p>The preparation process for NDP2027 can be seen as open and inclusive, with possibilities for public participation, starting with the launch of the preparation of NDP2027 on February 2018 and ending with the last final draft version of NDP2027 published on December 2019. High availability of information was secured during the preparation of NDP2027 which was provided by the website of the Cross-Sectoral Coordination Centre: https://www.pkc.gov.lv/lv/nap2027.</p>
<p>Conclusion</p>	<p>The quality of the NDP2027 preparation process is considered as high. The process of preparation and consultation of NDP2027 has been open and inclusive, with good opportunities for public participation. The preparation of NDP2027 respects the high availability of information.</p>

2.4. Agricultural sector

As regards to the use of RES in the agricultural sector, policy planning documents and regulatory enactments relating to the use of RES in general are binding.

In the context of the RES in the agricultural sector, a policy on the extraction of raw materials for the production of biofuels (growing energy crops) in agricultural lands and the change in land use in the context of sustainable extraction of RES is also ongoing. Consequently, the agricultural sector of RES is covered in two aspects: the use of RES for agricultural activities and obtaining RES in agricultural land.

Given that Latvia's agricultural policy is largely subordinated to the EU framework, it is helpful to first see the objectives of the RES at EU level.

2.4.1. Regulation of European Union

The production and use of RES has a major importance to EU rural development policy, however there are no quantified targets at EU level for the production of RES in agricultural lands or for the use of RES specifically in the agricultural sector. However, in accordance with 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, the conditions for achieving the RES targets and the support mechanism, the use of agricultural land for energy crops is an undesirable development. In spite of this, the agricultural land can be important for RES development in the long-term by providing resources for generating energy from raw products, as well as by offering areas for deploying various other types of RES (e.g. solar power plants and wind turbines).

Regulation No. 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by (EAFRD) and repealing Council Regulation (CR) No. 1698/2005 (hereinafter referred to as Regulation No. 1305/2013) may be considered as the main EU policy document in the field of agriculture. In Regulation No. 1305/2013, one of the six priorities are promoting resource efficiency and supporting the shift towards a low-carbon and resilient economy in agriculture, food and forestry sectors. Within this priority, the key areas include:

- Increasing the efficiency in water use by agriculture;
- Increasing energy efficiency in agriculture and food processing;
- Facilitating the supply and use of renewable resources of energy, of by-products, wastes and residues and of other non-food raw material, for the purpose of the bioeconomy;
- Reducing greenhouse gas and ammonia emissions from agriculture;
- Fostering carbon conservation and sequestration in agriculture and forestry.

Regulation No. 1305/2013 provides that at least 30% of the financing of each rural development programme should be directed towards measures relating to environment and climate change. As regards to RES, Regulation No. 1305/2013 provides that measures should be taken to promote the production and distribution of RES by developing predictable support schemes, priority network access or guaranteed access and priority in the distribution, as well as publicly announced standard rules regarding the cost-taking and distribution of technical adjustments. Each Member State should adopt a national renewable energy action plan.

EU Member States may apply specific measures to the development of renewable energy, such as investments in the production and use of renewable energy. Energy efficiency is also to be supported in this context.

2.4.2. Sustainable development strategy of Latvia until 2030

The “Renewable and Safe Energy” section of Sustainable development strategy of Latvia (hereafter – SDSL 2030) stated “to ensure energy independence of the state by increasing the provision of energy resources and integrating in the EU energy networks”.

The use and innovation of renewable energy resources is one of the priorities for the long-term action in the field of renewable and safe energy. Potential solutions indicate that energy crops suitable for the production of biofuels could be cultivated in unused agricultural areas. At the same time, it is stressed that the development of biofuels must be linked to innovation and the transfer of the best practices, so that the amount of energy used in production does not exceed the amount of biofuel energy produced. It is also noted that production of biomass as a renewable energy resource should be planned in areas where agricultural land is less favourable for food production.

The strategy identifies the promotion of biofuels in public transport and agriculture as one of the solutions to the development of RES use and innovation, but does not set specific objectives in this respect.

One of the objectives of SDSL 2030 is the use and innovation of RES (indicator: RES share in gross domestic energy consumption in 2030 > 50%), but there are no targets for extraction of RES.

2.4.3. Energy strategy 2030

The Strategy states that “national (as well as the EU Energy Infrastructure Fund) support for the development of 2nd generation biofuels production is needed, by 2016, by preparing the tender conditions for the creation of a BTL synthetic biodiesel plant with a capacity of at least 100 million litres per year, which would contribute significantly to the extensive use of local biomass in the transport sector by providing wood, peat and farming a waste demand of 1,5 million m³ per year”.

It is also stated that “taking into account the effects of reducing greenhouse gas emissions from biogas produced in agriculture, replacing fossil fuels and reducing methane emissions to promote environmental protection, animal by-products and derived products, as well as waste plants and waste water treatment gases, are to be used for energy production. The use of biogas in electricity generation complexity address the management of biodegradable by-products and derived products from agricultural production, processing and processing processes, reducing the risk of soil, water and air pollution, as well as potential risks to human health.”

According to the Strategy, the electrical capacity and electricity generated from biomass power plants in Latvia will increase several times between 2010 and 2020 and will continue to grow significantly in 2030, too.

2.4.4. National Development Plan 2014-2020

The National Development Plan 2014-2020 (hereafter – NDP 2014-2020) states that it is necessary to support the deployment of new technologies and the rational use of resources, thereby reducing pollutant emissions in the energy, industrial, transport and agricultural sectors and households. The aim is not to exceed the input levels of pollution and greenhouse gases in the environment for long-term development (by reducing the emissions of pollutants from energy, industry, transport, agriculture, fisheries and households and the amount of waste generated). The national total emissions of air pollutants by pollutant have been used as an indicator to achieve the target.

In NDP 2014-2020 vision for Latvia until 2020, a separate section is devoted to energy efficiency. In line with the vision "comprehensive energy efficiency has become the cornerstone of the country's energy independence. Improving the energy efficiency of the manufacturing and service sectors is a matter of both competitiveness and the quality of working and living environments". There is also a vision that "Latvia has a favourable environment for investment in green energy that is predictable in the long term and economically sound, and one that does not place an excessive burden on society or the state budget. The Latvian energy system is evolving to be stable and flexible and is successful at integrating into the European energy systems, combining efficient high-capacity energy generation with small-scale dispersed energy production, supported by the development of smart grids."

The description of the action objective the Energy Efficiency and Energy Production states that energy has become one of the most important providers of the competitiveness and independence of the national economy today. Latvia is rich in renewable energy resources, which are currently not sufficiently used to produce energy in the country. Therefore, this direction of action is intended to promote the use of local energy sources in energy production. This does not mean the possibility of abandoning energy imports immediately, but helps to balance the structure of energy production and import.

The action direction is to ensure the sustainable use of the energy resources needed for the national economy by promoting the availability of resource markets, a reduction in the energy intensity and emissions intensity of the sectors and an increase in the share of local renewables in total consumption, focusing on competitive energy prices. In turn, the development of municipal energy plans, including complex measures to promote energy efficiency and the transition to renewable energy sources, is defined as one of the tasks to be carried out in the framework of the action objective.

In the area of agricultural land, NDP 2014-2020 has identified the need to stimulate the use of agricultural land by supporting production and the provision of services. At the same time, land use must be both intensive and sustainable.

According to NDP 2014-2020, it is intended to support the production of energy from the RES, but in this respect no relation to the agricultural sector has been identified. There are no targets for agriculture in the field of RES. It is only part of the overall RES target of all sectors.

2.4.5. Rural Development Programme 2014-2020

The rural development programme for 2014-2020 (hereafter – RDP 2014-2020) stresses that agriculture is the third most important source of GHG emissions, representing 20% of total

national emissions, and with a forecast for GHG emissions to increase in the future, therefore farms and food production companies need to provide investment support for modern, in compliance with standards and energy resources saving, the deployment of efficient GHG emissions and ammonia-reducing technologies, including those producing energy from RES. According to the document, the need to promote the reduction of GHG emissions and increase of the use RES in agriculture is identified. As part of this need, one of the priorities under Regulation 1305/2013 is to: “facilitating the supply and use of renewable sources of energy, of by-products, wastes and residues and of other non food raw material, for the purposes of the bio- economy”. The objectives are intended to be met by supporting agricultural operators who use residual products from their farm to produce energy for their own farm needs.

The total investment target for renewable energy generation under the RDP 2014-2020 is 40 million EUR for 2023, of which 16 million EUR is intended from the public sector. The investment is intended to support 25 actions.

Table 2.5. Analysis of the policy document: agricultural sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p>Although the promotion of the use of RES, along with the reduction of GHG emissions in agriculture, is identified as one of the three main needs for the development of the agricultural sector, <u>a specific target for RES has not been set.</u></p> <p>In the field of RES, priority is given to “facilitating the supply and use of renewable sources of energy, of by-products, wastes and residues and of other non food raw material, for the purposes of the bio- economy”.</p> <p>The direction of the development of the RES is in line with those identified at EU level, but at national level the priority is uncertain and does not determine what actions and targets should be achieved in the field of RES. Consequently, it has not been established how the objectives achieved can be evaluated.</p>
<p>2. Policy detail</p>	<p>As an ex-ante condition applicable at national level for the RES RDP 2014-2020, the following are set out:</p> <p>“Measures have been taken to promote the production and distribution of renewable energy sources” as a criterion, “transparent support schemes, priority access to the grid or guaranteed access and priority in the distribution, as well as publicly announced standard rules on the taking-up and distribution of technical adjustment costs, and are in conformity with Article 14 point 1 and Article 16 point 2 and 3 of Directive 2009/28/EC”, and “a Member State has adopted a national Renewable Energy Action Plan in accordance with Article 4 of Directive 2009/28/EC.”.</p> <p>The performance assessment includes: “an annual increase in the number of new projects that starts electricity generation from renewable energy sources, receiving aid in the form of feed-in tariffs where the right to sell under mandatory electricity procurement has been received and contributing to the achievement of the objectives set out in Directive 2009/28/EC. An increase in the number of such projects is also expected in the coming period. At the same time, mandatory electricity procurement, which is currently being revised to make it more flexible and economically</p>

	<p>justified, taking into account the risk created for end-users, is not the only support mechanism implemented in Latvia for energy production using renewable energy sources."</p> <p>Target objective 5C is intended to be implemented by supporting agricultural operators who use residual products from their farm for energy production to their own needs.</p> <p>The total investment target for renewable energy production for 2023 is 40 000 000 EUR. The investment is intended to support 25 actions.</p>
3. Process quality	<p>The RDP 2014-2020 was developed by the Ministry of Agriculture. RDP 2014-2020 version 1.2. was approved on 13.02.2015, the current version 7.0 was approved on 08.05.2019.</p> <p>An ex-ante assessment has been carried out, including a SIVN report.</p> <p>The public consultation meeting took place on 15 August 2019, the public consultation of SIVN report continued till 16 September.</p>
Conclusion	<p>Overall, the RDP 2014-2020 supports the use of RES, which is also demonstrated by a properly defined need. Despite the fact that the promotion of the use of RES is one of the main priorities, policy planning in this area is not considered to be successful because there is no specific objective, there is a lack of a clear action plan, as well as only one instrument for promotion of the use of RES is mentioned – financial support in the form of investments.</p> <p>It should be noted that the RDP 2014-2020 document is extensive, but at the same time the information is repeated in many areas. The structure of the document (integrated comments) makes the document chaotic and opaque. The above shortcomings make the document difficult to perceive.</p>

2.4.6. Latvian Bioeconomy Strategy 2030

The Latvian Bioeconomy Strategy 2030 looks separately at the production of bioresources in agriculture, focusing mainly on increasing the efficiency of both land use and added value. The RES is not mentioned in this context, but there is mentioned a strong need to introduce circular economic principles which, to some extent, relate to opportunities for the development of RES.

The Strategy points out that the cascading principle should be used as much as possible – agricultural and forestry output by-products and waste products which cannot be used for food production and woodworking or other high value added products can be used to produce energy, thus replacing fossil energy sources.

Table 2.6. Policy document analysis: agricultural sector

1. Adequacy objectives (adequacy measure)	Targets for the production or use of RES in the agricultural sector have not been set.
2. Policy detail	The Strategy information report states that it in the current stage does not provide the identification of specific measures, responsible performers and sources of funding.
3. Process quality	<p>The strategy was prepared by the Ministry of Agriculture, and the technical preparation was carried out by researchers of the Latvian University of Life Sciences and Technologies. The preparation of the strategy involved the associations of binding industries, the scientific authority, as well as representatives of the interministry Steering Group chaired by the Ministry of Agriculture from the Ministry of Economics, the Ministry of Environmental Protection and Regional Development, the Ministry of Education and Science, the Ministry of Welfare and the Cross-Sectoral Coordination Centre.</p> <p>During the development of the Strategy, cooperation with the Nordic Council of Ministers' Office in Latvia has taken place, organising seminars and international conferences in order to facilitate the transfer of good practices of the North to the bioeconomy.</p> <p>The information report has been opened for public consultation from 04.08.2017 till 18.08.2017.</p> <p>Strategy was adopted by CB on 19.12.2017.</p>
Conclusion	In the Strategy, the only relationship between the agricultural sector and the RES appears to be a proposal to develop a circular economy and to use the cascade principle. In general, although the objectives set out in the Strategy could contribute to the production and use of RES in the agricultural sector, the paper does not directly contribute to this, since there are no relevant objectives and measures.

2.4.7. A common agricultural policy by 2020: achieving food, natural resources and territorial future challenges

In the document of the Ministry of Agriculture of 25 November 2010 states that after 2013 EU funding under rural development policy should be provided for measures to promote the sustainable development of the rural economy, including the production of renewable energy sources. It is noted that agricultural development planning should also take into account global challenges in the context of climate change, thereby focusing on sustainable use of resources and the production and promotion of alternative forms of energy, such as bioenergy. Specific objectives and measures have not been established in this regard.

Table 2.7. Policy document analysis: agricultural sector

1. Adequacy objectives (adequacy measure)	Targets for the production or use of RES in the agricultural sector have not been set.
2. Policy detail	No specific measures are expected to promote the production and use of RES in the agricultural sector.
3. Process quality	The document was prepared by the Ministry of Agriculture.
Conclusion	RES is only mentioned in the document, so that the document refers only indirectly to the RES.

2.4.8. Conclusion

Long-term agricultural policy planning documents generally support the production and use of RES. Energy extraction from bioresources is recognised as an important means to mitigate climate change already in Sustainable development strategy of Latvia until 2030 and in the National Development Plan for 2014-2020. Latvia has adopted priorities from EU level proposed priorities in the field of agricultural development, which also includes promoting the use of RES, by-products, waste, residues and other non-food raw materials for bioeconomy purposes. This priority is embedded in the RDP 2014-2020, with the need to promote the use of these raw materials accordingly, but there is no specific objective and a plan for its implementation. The funding instrument for promoting the use of RES set out in the RDP 2014-2020 is a financial support – the total investment target for renewable energy production for 2023 is 40 000 EUR in order to support of 25 actions.

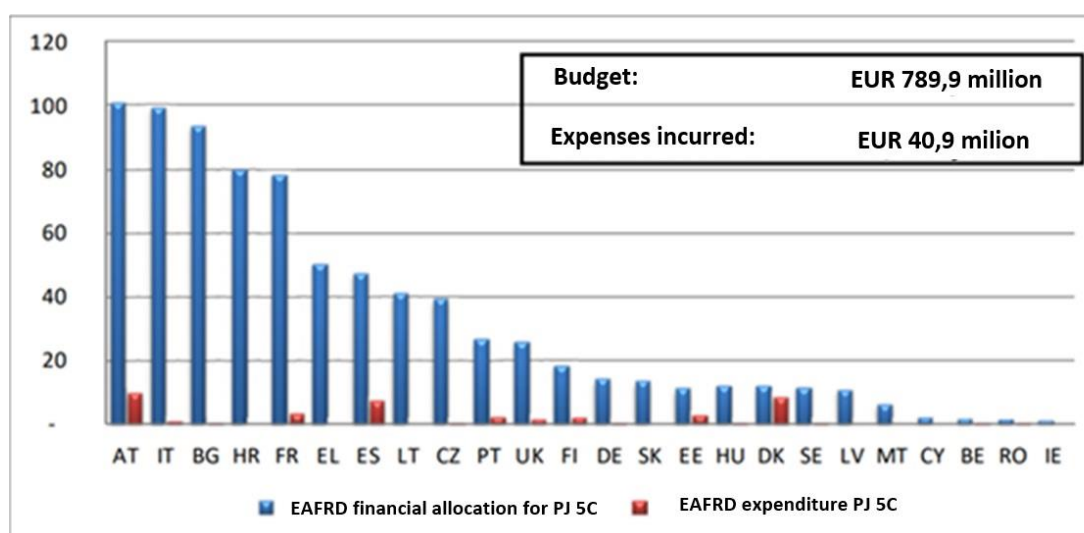


Fig. 2.1. Funding allocated for renewable energy (priority area 5C) in EU Member States for the 2014-2020 period and expenditure incurred, data of 12 October 2017 (EUR million) (European Court of Auditors, 2018).

However, although the aid can be measured in the form of investments, investments alone do not show a successful development in this area. It is also important to mention that, in the middle of the 2014-2020 programming period at European level, the amount of expenditure on renewable energy (priority area 5C) represents only 5.1% of the total budget allocated (Fig. 2.1), which shows that there are other relevant factors affecting the development of RES energy.

In general, the policy planning documents at the level of Latvia, which are binding for the agricultural sector, make it necessary to minimise the impact on the environment and climate change by pointing to the significance of the RES, but in most cases, this issue has only been dealt superficially. RES in relation with the agricultural sector are mainly mentioned when considering development opportunities rather than expressing needs and setting appropriate targets. Energy savings and energy efficiency are more focused on energy efficiency.

It is important to note that it is already recognised at European level that the issue of RES energy has not been sufficiently taken into account in rural development planning (European Court of Auditors, 2018). Consequently, there is also a lack of a clear vision and guidelines for the development of RES in agriculture at national level. In addition, the objective at EU level in this area would be to provide additional incentives for the generation and development of successful policies.

2.5. Commercial and public sector

This sector consists mainly of public and local government buildings and company-owned buildings where services are provided.

The use of RES in the commercial and public sector is primarily viewed in the context of building policy planning.

At EU level, one of the policy documents on the use of RES in the building sector is Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (hereinafter – Directive 2010/31/EU). Although Directive 2010/31/EU as a whole sets out a policy on the energy performance of buildings, it also applies to RES. Directive 2010/31/EU states that the EU's energy efficiency targets can be best achieved while developing measures to improve energy efficiency and promoting the use of RES at the same time. However, quantitative targets for the RES in the building sector have not been set.

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (hereinafter – Directive 2012/27/EU) requires each Member State to ensure that 3% of the total area is renovated each year in buildings owned and used by its central government, heating and/or cooling to meet at least the minimum energy efficiency requirements which it has established. In accordance with Directive 2012/27/EU, increasing the efficiency of heating also includes an increase in the share of RES. Under Directive 2012/27/EU, the annual savings of 1.5% of energy delivered to national end-users should also be achieved.

The aim of the specific support “Promoting energy efficiency in public buildings and housing sector” measure “Promoting energy efficiency in the public buildings” of the European Regional Development Fund (ERDF) also includes the support for the transition to RES. The aim of the measure is to promote energy efficiency improvements, the use of smart energy management and RES by direct public administrations or sub-national authorities, or buildings owned or used by a derived public person performing state delegated functions. In order to improve the energy efficiency of public buildings, funding is planned to restore 3% of state-owned buildings annually from 2017 till 2025.

The initial assessment of the “Promoting energy efficiency in the public buildings” measure has been carried out. It provides a description of the mechanism for implementing the measure, assessing the impact on the environment, the economy, business, the social environment, health and the regulatory environment, and assessing the potential benefits and risks of carrying out projects.

During the 2014-2020 planning period action programme “Growth and Jobs” of the EU funds, the promotion of energy efficiency and the use of RES in public buildings has been identified as one of the priorities. Funding for the use of RES measures (where specific energy performance indicators are reached), 97.86 million EUR is foreseen accordingly to the public buildings and 42,56 million EUR in municipal buildings.

Twenty-three Latvian municipalities have signed the Covenant of Mayors on Energy and Climate. The pact provides for municipalities to develop sustainable energy and climate action plans, a key document in which the signatories of the Covenant of Mayors set out how they intend to meet the energy and climate commitments at EU level. The EU “Horizon2020” programme implements the project “Ensuring neutral carbon emissions in regions by 2050”, which aims to mobilise and support national administrations by reviewing and developing energy policy priorities for low carbon development by 2050, as well as promoting cross-sectoral cooperation and encouraging municipalities to find funding, developing and implementing energy and climate plans to achieve neutral carbon emissions by 2050. The project was launched in 2018. Currently, several Latvian municipalities are developing sustainable energy and climate plans with the assistance of the project.

2.5.1. Sustainable Development Strategy of Latvia until 2030

SDSL 2030 states that “in order to make the most efficient use of available natural and human resources for the production of needed energy, it is also necessary to develop the production of distributed and microlevel energy from renewable sources in the private sector. It could mainly be the use of solar energy for water heating and electricity generation”. This is partly the case for the commercial sector, but there are no specific objectives set in this area.

It is noted that energy-efficient street lighting in cities should be promoted by providing “investments in prospective and environmentally friendly technologies, such as automatic lighting systems and light emitting diodes”. This measure could include the development of the RES, but in particular the RES has not been mentioned. As a long-term benefit from the implementation of this measure, the reduction in municipal spending is mentioned.

The SDSL 2030 RES has not been directly addressed in relation to the commercial and public sector and no targets have been set. The commercial and public sector of RES is only part of the overall RES target.

2.5.2. National development plan 2014-2020

In the context of energy, NDP 2014-2020 sets out the challenges of “development of local government energy plans providing for complex measures to promote energy efficiency and transition to renewable energy resources” and “energy efficiency programmes in the sector of state and local government public buildings”.

The planning of the RES policy for the commercial and public sector is shown in indirect way – as the overall objective to increase the share of RES and the key objectives of promoting the use of RES.

2.5.3. Long-term strategy for building renovation

At the meeting of the CM on 26.05.2014, the information report “Towards an indicative national energy efficiency target for 2014-2016 in accordance with directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC” was approved, and as an annex Long-term strategy for building renovation based on Article 4 of Directive 2012/27/EU, which requires each EU Member State to develop a long-term strategy for buildings in order to mobilise investments in both the renovation of public and private residential buildings and commercial facilities.

Long-term strategy for building renovation for the period 2014-2016 developed in 2014, provides an overview of the current situation regarding the use of RES in public buildings and the deployment of support measures for the transition to RES.

The policy measures to be taken to ensure the energy efficiency of buildings mention that “conditions should be established for the transfer of tax revenues (e.g. excise tax on fossil energy sources, taxes on natural resources, etc.) to improve the energy performance of buildings and the use of renewable energy sources for buildings”. It is also noted that real estate taxation policies implemented by municipalities can serve as an instrument for promoting the energy efficiency of buildings and for the use of energy from RES in buildings. However, no quantitative targets were set for the commercial and public sector in the field of RES.

Directive 2012/27/EU requires member states to update the strategy every three years. The updated version of the long-term strategy for building renovation – Long-term strategy for building renovation – was developed in 2017. According to the information report of the updated Strategy, as in the previous version of the Strategy, an overview of the RES use in public buildings is provided. Reference is made to the objectives set out in Directive 2012/27/EU: achieving 1.5% of the energy savings delivered to national end-users each year and restoring 3% of the area of state-owned buildings each year.

Table 2.8. Policy document analysis: commercial and public sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p><u>No quantitative targets have been set for the production or use of RES in the commercial and public sectors.</u></p> <p>The RES target is included in the Strategy under the heading “Long-term Goals Regarding the Energy Performance of Buildings in Latvia”. The objective of “promotion of energy efficiency and use of local RES in the centralised heating. Percentage of renewable energy in the gross final energy consumption –60% (the 2014–2020 programming period of the EU Funds)” does not directly refers to the commercial and public sector, but only covers them.</p>
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	<p>The document sets out the planning documents relating to the energy performance of buildings, which set out the planned energy efficiency policy measures for buildings.</p> <p>The section “The Goals to Be Included and Set in the Strategy for 2030 and 2050” is composed of a small paragraph stating that Latvia should set quantifiable, achievable targets.</p>
2. Policy detail	<p>As an indicator to be achieved for the above-mentioned objective “promotion of energy efficiency and use of local RES in the centralised heating. Percentage of renewable energy in the gross final energy consumption – 60% (the 2014–2020 programming period of the EU Funds)” is defined as “Increase of energy generated from renewable energy sources – 70 MW. Reconstructed heat supply networks – 70 MW (in 2023)”. The indicative funding is 53 million EUR (EU funds). Deadline: 2014-2023.</p> <p>The target achievement indicator “Increase of energy generated from renewable energy sources – 70 MW” is not clearly defined as it is not understandable in terms of what is meant by generated energy. Consequently, a vaguely mentioned indicator also potentially makes it difficult to achieve and assess the target. Moreover, capacity growth has not yet shown an increase in proportion.</p> <p>The document describes the EU funds available to promote energy efficiency in buildings, including the transition to RES.</p> <p>Specific measures to promote the production and use of RES in the commercial and public sectors are not expected. Financial support is identified as the main instrument for switching to RES in buildings.</p>
3. Process quality	<p>The information report was prepared by the Ministry of Economy in 2017.</p>
Conclusion	<p>Within the framework of the document, as well as the implementation of the measures set out, RES are also included in the context of the energy efficiency of buildings and are not divided separately.</p> <p>The indicator for achieving the overall RES target is defined in vague terms and clearly does not indicate the achievement of the target. The support is focused mainly on public and municipal buildings.</p>

2.5.4. Conclusion

There are no quantifiable targets at national level for RES in the commercial and public sector. Objectives set in the policy planning documents in the field of RES are mainly covering all building fund in general.

In both EU and Latvian policy planning documents, the promotion of the use of RES is often viewed as a part of energy efficiency, which can make it difficult to identify RES targets. In particular, the promotion of the use of RES in the commercial and public sector are limited to measures in the public and municipal buildings. The main policy instrument for promoting RES in public and municipal buildings is financial support, mainly from EU funds.

2.6. Household sector

The household sector also plays an important role in achieving the objectives of the use of RES. The role of the sector will continue to increase in the future with the development of technological solutions that will raise demand response services to a new level, making many different micro-generators part of the energy system not only on the consumption side but also on the storage and supply side.

The strategic energy policy documents contain references to both the energy efficiency of households and the wider use of RES in the future, but the objectives are set out in general, without mentioning specific benchmarks or quantity. This approach can be explained by the fact that many participants with possibly competing interests have been involved in the preparation of policy documents and there has been insufficient clarity (clear forecasts) on technological solutions for energy microgeneration, storage and consumption after 10, 20 or 30 years.

Long-term planning documents are not numerous, and their objectives are set in general terms: LV2030, LCD2050, Information Report: Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society. There are a number of documents whose operating or ideological impacts set the horizon for 2020, such as the Energy Development Guidelines for 2016-2020 or the National Development Plan for 2014-2020.

2.6.1. Sustainable development strategy of Latvia until 2030

In the Sustainable Development Strategy of Latvia until 2030, energy generation and efficient consumption issues are included not only in the section of sustainable RES [Renewable and safe energy (Cross-Sectoral Coordination Centre, Latvia's Sustainable Development Strategy until 2030, 2019)], but also integrated as a horizontal issue in other thematic sections (Cross-Sectoral Coordination Centre, Latvia's Sustainable Development Strategy until 2030, 2019). Micro-generation of electricity is included in paragraphs 218 and 222, stating that “the generation of distributed and microlevel energy from renewable energy sources in the private sector also should be developed” and that “in the future, it would be possible and desirable to also spread electricity generation, allowing individuals to produce the electricity needed for their household and to transfer its surplus into the overall transmission network”.

2.6.2. Strategy for the Low-carbon development of Latvia until 2050

LCD 2050 in section 5.1 “Sustainable energy”, the scenario 2050 states that “the use of biomass and solar energy contributes to the role of primary energy sources in the household sector. In households, biomass and biomethane are the primary sources for the production of heat energy of RES. Not only the use of wood and their products has increased, but also the use of other types of biomass – straw, dread, etc. Solar energy is used to provide hot water and electricity. Simultaneous use of several RES technologies play an important role, where, for example, electricity generated from RES is used for the production of heat energy of RES technologies”.

Currently, a directly targeted policy for the energy sector is the information report “Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society (2013)”, which, from a formal point of view, is not considered to be a policy planning document, and **Energy Development Guidelines for 2016-2020 (2016)**.

2.6.3. Information report “Long-Term Energy Strategy of Latvia 2030 – Competitive Energy for the Society”

Regarding to the involvement of households in the use of RES, this document does not contain any detail. Micro-generation of electricity is mentioned only in the context of security of energy supply, indicating that future network management and operational planning will have to take into account the increasing prevalence of micro-generation in order to effectively integrate into the grid the energy produced by the micro-generation process and stressing that the energy produced in the decentralised micro-generation process can only be effectively integrated into the grid provided if the energy supply networks are closely monitored, their activities and developments are analysed and planned, and effective balancing of capacity in the network is ensured (Ministry of Economy).

2.6.4. Electricity Market Law

In Latvia, the only specific permanent policy instrument for promoting the use of RES in the household sector is the implemented Electricity net payment system of electricity mentioned in the Electricity market law (EML). As there are no restrictions on the duration of the EML operation of the norm, it can be assumed that this instrument will be evolving, ensuring that households are more involved in the use of RES, thereby promoting a wider use of RES in the economy as a whole. In July 2019, the Ministry responsible for sectoral policy made public proposals for the development of the Electricity net payment system, with a view to achieving the involvement of households and also legal persons in the micro-generation of electricity. The need to complete the Electricity net payment system was carried out from the conclusion that the existing net payment arrangements do not create sufficient interest to install and use micro-generation capacity in the households as part of the proposed solution. The specification of the draft rules of the Electricity net payment system included in EML on 15 October 2012 highlights a lack of consultation with the audience on the most effective motivation for using net payment: the annotation states that consultations have not been conducted with other institutions or with the target audience of the legislative instrument.

Table 2.9. Analysis of the policy document: household sector

<p>1. Adequacy of objectives (adequacy measure)</p>	<p>Amendments to the Electricity market law introducing the Electricity net payment system indicate that is based on “bill “Amendment to the Electricity market law” was prepared in accordance with order No. 84 of the Regulations of the Cabinet of Ministers of 16 February 2012 “On the government action plan for the implementation of the declaration on the planned activities of the Cabinet of Ministers in the leadership by Valdis Dombrovskis” Chapter II Innovative and Effective Economy subchapter’s Energy for a Competitive Economy paragraph 64, which will specify that, in order to reach at least 40% of the share of renewable energy resources in final energy consumption until 2020, the Cabinet of</p>
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	<p>Ministers will address energy issues in providing heat and electricity generation, the transport sector and energy efficiency".</p> <p>It follows from the amendment that until their adoption and entry into force "The legislation in force in Latvia did not foresee the possibility in the case where households produce higher amount of energy from renewable energy sources than their own consumption, when it is transferred to the electricity grid, to receive a payment or to carry out a net settlement. There was no such settlement system that would take into account households both the amount of electricity received from the system and the amount of electricity transferred to the system, nor did it provide for the application of the net electricity settlement system when the amount of electricity consumed is deducted from the amount of electricity transferred to the grid and settlements are made only for the difference. This reduces the interest of households in starting energy production through renewable energy sources".</p> <p>There are not set target for EU Member States on how much from the total electricity generated should be produced in distributed generation using micro-generation solutions. However, micro-generation can play a potentially important role in achieving the overall RES target, as the household sector is one of the four largest energy consumers (<i>by defining accordingly – including or excluding fuel and heat energy</i>). Consequently, it can be conditionally assessed that the principle of introducing a net electricity accounting system complies with the interest to achieve the overall RES target.</p>
<p>2. Policy detail</p>	<p>The policy aims at promoting the use of RES in electricity generation in the household sector.</p> <p>Policy detail is sufficient to make it clear to the audience how the net metering system works directly.</p> <p>Article 30.¹ EML. Electricity net payment system</p> <p>(1) Electricity net payment system is a procedure for making payments for the consumed electricity and for conducting offset by a distribution system operator for the electricity consumed by a household used and electricity produced which is transferred to the distribution system operator's network. If in accordance with the calculation of the amount of electricity consumed and produced the household user has transferred to the distribution system operator's network more electricity than he or she has consumed, the relevant amount of electricity shall be included in the next electricity payment period within the framework of the year which starts on 1 April and ends on 31 March. A payment period of the electricity net payment system shall be one calendar month.</p>

	<p>(2) A household user who produces electricity for consumption in his or her household for his or her own needs (final consumption) has the right to use electricity net payment system for the payment of electricity consumed and produced in the household, if all of the following conditions are observed:</p> <ol style="list-style-type: none"> 1) a household user has entered into a written agreement with a distribution system operator on the application of the electricity net payment system; 2) in a household the electricity is produced using renewable energy resources; 3) in a household the electricity is produced and consumed within the framework of one system connection; 4) the operating voltage of the electricity production installations installed in a household does not exceed 400 volts and total operating current in a single-phase or three-phase connection does not exceed 16 amperes. <p>(3) Electricity net payment system shall be applied only to payments for the electricity consumed by a household user, but shall not be applied to payments for the received distribution system services or other payments laid down in the laws and regulations.</p> <p>(4) The Cabinet shall determine the procedures by which a household user agrees with a distribution system operator regarding the application of the electricity net payment system and the procedures by which it is to be applied.</p> <p>The details of the Electricity net payment system were necessary, but at the same time it is also considered to be a barrier to micro-generation using the same system. Households were not interested in investing in microgeneration solutions because there was no parity in the payment for electricity transferred over the grid and consumed from the grid.</p>
<p>3. Process quality</p>	<p>The amendments to EML, which introduced the Electricity net payment system, were established in the Ministry responsible for the industry and the whole legislative standard process was passed through the Ministry (appeal of bill in the meeting of the State secretaries, approval in the CM, submission to the Parliament, consideration in the Commission[s] of Parliament and adoption at the meeting of the Parliament. From a formal point of view, the process was followed.</p> <p>However, the failure to apply this policy instrument (failure to serve as a sufficient motivator for households to choose micro-generation solutions) is at least partly explained by the information</p>

	<p>provided in the bill's annotation, which clearly indicates that the initiative has not been properly discussed with other institutions or the main target group of the policy instrument.</p> <p>Part I of the annotation, section 3 "Impact assessment and researches related to the policy" clearly indicates that no analysis has been carried out ("This area is not affected by the project").</p> <p>Part I of the annotation, section 5 "Involved institutions in the development of project" clearly indicates that no consultations with other institutions have taken place ("This are is not affected by the project").</p> <p>Part I of the annotation, section 6 "Reasons why public participation was not ensured" states that "The public may express its views after the announcement of the bill at the meeting of the State Secretaries".</p> <p>At the same time, the annotation's part II "The legislative proposal project's impact on society" in section 1 "The target group of the society" states that "Household users – individuals who produce electricity for their own consumption, electricity distribution system operators, electricity traders".</p> <p>Such an approach means that the responsible Ministry has prepared amendments to the legislative act (EML) at its discretion, without considering it necessary to consult with someone, or to take into account the needs and views of the target group.</p>
<p>Conclusion</p>	<p>The amendments to the EML, which introduced the Electricity net payment system, were established in the Ministry responsible for the sector and the whole legislative standard process was passed through the Parliament for approval. From a formal point of view, the legislative process has been followed, but given that this policy instrument did not achieve the objective – the widespread use of micro-generation solutions in households, it should be concluded that its unsuccessful application (failure to serve as a sufficient motivator for households to choose micro-generation solutions) explains the information provided in the bill's annotation, which reveals that this legislative initiative has not been adequately discussed with other institutions or the main target group of the policy instrument.</p>

3. SUMMARY AND RECOMMENDATIONS

Policy documents are analysed according to the economic sectors, where analysis is based on three consecutive phases, using internationally used policy documents' evaluation approaches.

Since very often the scope of RES is not directly linked to the core activities of particular economic sector, there is a lack of full integration of the EU's targets on RES into the policy documents. Moreover, an important fact is that it is now necessary to look at the transition to RES of the entire economy, not just the individual sectors of the economy.

Table 3.1. Summary of conclusions and recommendations

<p>Energy transformation sector</p>	<p>Overall, the energy transformation sector sets out direct national targets to be achieved in the field of RES and they are in compliance with EU requirements. They are mechanically transferred from EU development policy objectives for the EU Member States.</p> <p>It would be advisable to indicate how the related fields and/or sectors will achieve the targets for RES.</p>
<p>Transport sector</p>	<p>The RES guidelines do not define the quantitative targets that should be achieved in the transport sector, despite the fact that "Latvia's national reform programme for the implementation of the EU 2020 strategy" states that the share of renewable energy in the transport sector must reach at least 10% of the gross energy consumption in the transport.</p> <p>Despite the fact that the transport sector is important for achieving the overall national targets in the field of RES, as the fact that without regard to the reduction in the share of fossil fuels in final consumption, Latvia may not reach the 2020 RES target of 10% in transport, it can be concluded that the plan does not mark certain practical actions and activities to be implemented.</p>
<p>Industry (including construction) sector</p>	<p>The quality of the NDP2027 preparation process is considered to be high. The process of preparation and consultation of NDP2027 has been open and inclusive, with good opportunities for public participation. The preparation of NDP2027 respects the high availability of information.</p>
<p>Agricultural sector</p>	<p>Overall, the RDP 2014-2020 supports the use of RES, which is also demonstrated by a properly defined need. Despite the fact that the promotion of the use of RES is one of the main priorities, policy planning in this area is not considered to be successful because there is no specific objective set, there is a lack of a clear action plan, as well as only one instrument for promoting the use of RES – financial support in the form of investments.</p> <p>It should be noted that the RDP 2014-2020 document is extensive, but at the same time the information is repeated in many areas. The structure of the document (integrated comments) makes the document chaotic and opaque. The above shortcomings make the document difficult to perceive.</p> <p>Long-term agricultural policy planning documents generally support the production and use of RES. Energy extraction from bioresources is recognised as an important tool to mitigate climate change already in the Sustainable development strategy of Latvia until 2030 and in the National Development Plan for 2014-2020. Latvia has adopted priorities at EU level in the field of agricultural development, which also includes promoting the use of RES, by-products, waste, residues, and other non-food raw materials for bioeconomy purposes. This priority is embedded in the RDP 2014-2020, with the need to</p>

	<p>promote the use of these raw materials accordingly, but there is no specific objective and a plan developed for its implementation. The funding instrument for promoting the use of RES set out in the RDP 2014-2020 is financial support: the total investment target for renewable energy production for 2023 is 40 000 EUR in support of 25 actions. However, although the support can be measured in the form of investments, investments alone do not show a successful development in this area. It is also important to mention that, in the middle of the 2014-2020 programming period, the amount of European level expenditure on renewable energy (priority area 5C) represented only 5.1% of the total budget allocated (Fig. 2.1), which shows that there are other relevant factors affecting the development of RES energy. In general, the policy planning documents in Latvia, which are binding to the agricultural sector, make it necessary to minimise the impact on the environment and climate change by pointing to the significance of the RES, but in most cases, this issue has only been dealt superficially. RES in relation to the agricultural sector are mainly mentioned when considering development opportunities rather than expressing needs and setting appropriate targets. The higher importance is given to energy savings and energy efficiency in the field of energy.</p> <p>It is important to note that it is already recognised at European level that the issue of RES energy has not been sufficiently taken into account in rural development planning (European Court of Auditors, 2018). Consequently, there is also a lack of a clear vision and guidelines for the development of RES in agriculture at national level. In addition, the objective at EU level in this area would promote additional stimuli for the successful development and implementation of policy.</p> <p>Within the framework of the document, as well as the implementation of the measures in the context of buildings' energy efficiency, RES is included and are not divided separately.</p> <p>The indicator for achieving the overall RES target is defined in vague terms and clearly does not indicate the achievement of the target. The support is focused mainly on public and municipal buildings.</p>
Commercial and public sector	<p>There are no quantifiable targets at national level for RES in the commercial and public sector. Policy planning documents mainly set common objectives in the field of RES, covering all building funds in general.</p> <p>In both EU and Latvian policy planning documents, the promotion of the use of RES is often viewed as part of energy efficiency, which can make it difficult to identify RES targets. In particular, the promotion and measures of the use of RES in the commercial and public sector is limited to public and municipal buildings. The main policy instrument for promoting RES in the public and municipal buildings is financial support, mainly from EU funds.</p>
Household sector	<p>The amendments to the EML, which introduced the Electricity net payment system, were established in the Ministry responsible for the sector and the whole legislative standard process was passed through the Parliament for approval. From a formal point of view, the legislative process has been followed, but given that this policy instrument did not achieve the objective – the widespread use of micro-generation solutions in households, it should be concluded that its unsuccessful application (failure to serve as a sufficient motivator for households to choose micro-generation solutions) explains the information provided in the bill's annotation, which reveals that this legislative initiative has not been adequately discussed with other institutions or the main target group of the policy instrument.</p>

Nevertheless, the situation in some sectors (e.g., agricultural, household and transport sectors) show that in the planning development documents of these sectors do not include the identified national targets for RES, i.e. policies and/or measures to encourage the use of RES are not specified and defined in detail.

An aggravating factor is the fact that particularly those sectors which have insufficient policies and/or measures in the field of RES are among the largest energy consumers. For example, the largest consumer of energy resources in 2018 was transport, which consumed 30.1%, while households accounted for 28.8%, and the industrial sector accounted for 22.9% (Central Statistical Bureau, 2019) of total energy consumption in the country.

This can be explained by insufficient human resources capacity, estimated time and deadlines, the difficult progress of harmonisation (process), and incomplete knowledge in the field of RES.

As one of the complementary solutions for improving incomplete knowledge in the field of RES is involving experts and professionals who have acquired expert status or assessment, both locally and internationally, and are available in public expert databases such as EU expert databases, for example, CORDIS.

Even so, it is strongly recommended to use the database of the experts of the Latvian Council of Science, where the necessary experts can be selected according to the relevant field.

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