

Legislative Impact on Significance of RES in the Latvian Energy Market

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Abstract: Latvia is a new European Union country, with 20-year experience in the efforts to develop the energy policy that would favour reliable supply of the state with energy and promote its effective and rational utilization. The energy law should take into consideration the technological progress and increasing energy consumption as well as the poorly regulated sphere of production and utilization. At present, new regulations are needed, as the existent ones have become outdated and unable to ensure stable development of the energy sector. However, the lack of experience and sometimes external influence could lead to a situation when the new law would not be conducive to the industrial development but vice-versa-would slow it down. Since Latvia has been confronted by counterproductive laws, it is highly important to estimate beforehand the future impact of legislation on the state economy. On issue of for the country is now to guarantee-by force of law-the optimal share of renewable energy in the national energy mix. The objective set within the framework of European Union policy is to achieve a 40% share of renewable energy by 2020; therefore, it is necessary to work out a separate law concerning the RES (renewable energy sources). The new RES law is to regulate support and to promote increase in the share of renewable. However, there are many influencing factors—not clearly specified outlooks for the energy sector and national economy development, the interests of energy importers, lobbying, etc.; these factors can make the RES law not only ineffective but even negatively affecting the RES share stability in the state energy balance. It is therefore essential, before the law has been adopted, to thoroughly analyze it so that the optimal variant is accepted.

Key words: Renewable energy sources, energy market, energy legislation.

1. Introduction

In the last 10 years, a 10% increase in the energy consumption in Latvia has been observed. This means increasing import of electricity and energy resources, since the volumes of electricity produced in Latvia are insufficient for covering energy demand. The ever increasing demand, along with the limited fossil fuel reserves as well as environmental pollution and global climate change, has aroused an active interest in renewable energy resources. In the EU, support for the RES (renewable energy sources) use has become an integral part of its energy policy. For Latvia (as for other European countries) this issue is especially

topical. In the world, a tendency is developing fast—that of step-by-step replacement of the traditionally employed energy carriers by those of higher quality, with inclusion of renewable energy resources—biomass, solar and wind energy. This would undeniably lead to the cost reduction for the RES-technologies, which, in turn, would mean their increased competitiveness and wider utilization.

For small countries, constant boosting of their external sovereignty, both political and economic, is particularly important. Therefore, promotion of self-sufficiency of the energy sector is one of the key tools for reaching this goal. Currently, in terms of the energy supply structure, Latvia is one of the most vulnerable EU member states. The level of self-sufficiency is low, and the dependence on one

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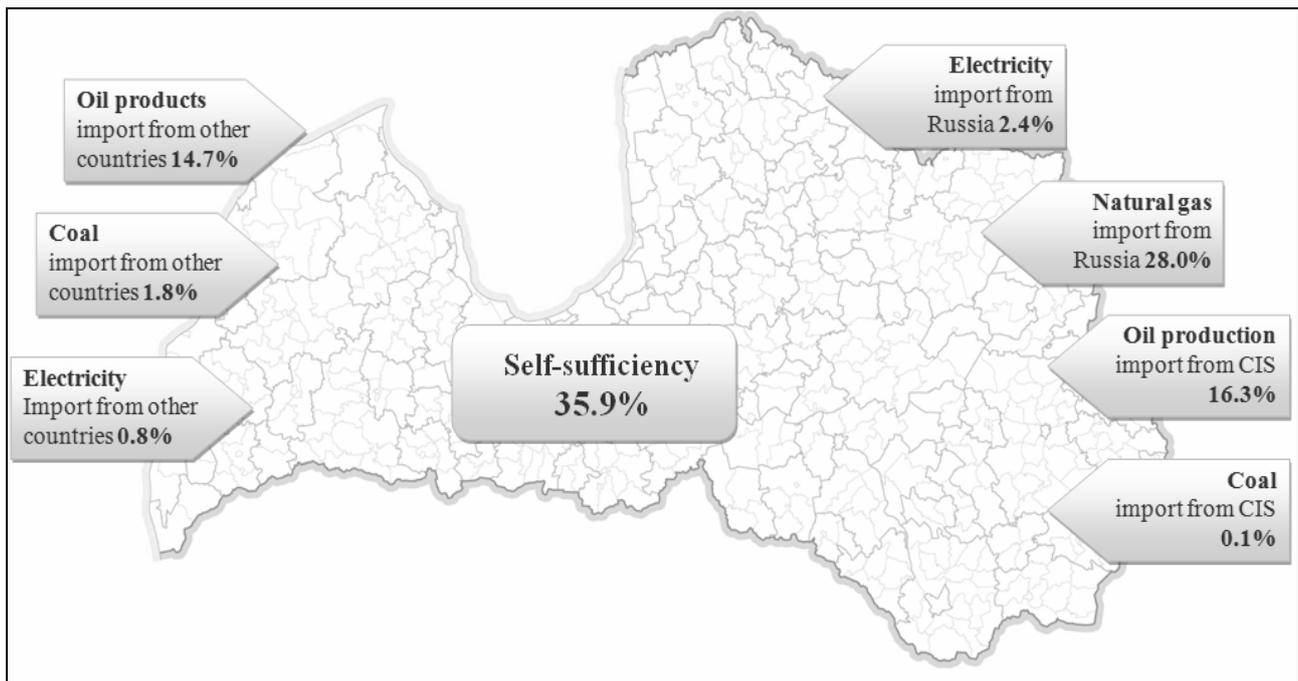


Fig. 1 Latvian energy self-sufficiency and import in 2009.

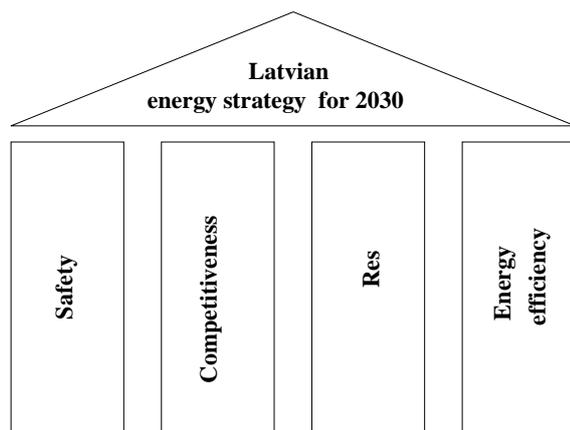


Fig. 2 Latvian energy strategy for 2030.

resource and one supplier is high. Moreover, the position of such a supplier's capital on the local energy market and in the economy as a whole is significant, as is that of the associated business culture; also, the chance of political and economic manipulation is ever-present, whilst opportunities for supply diversification and greater RES share in the energy balance are limited both in the short and medium terms. At the same time, the use of local renewable and energy efficiency improvement should undoubtedly become the priority objectives in diversification efforts and

promotion of self-sufficiency. In this way, the end consumption will be reduced. At the same time, gradual integration of the Baltic "energy peninsula" into the "continent" of the EU energy infrastructure, and its legal and technological framework, creates conditions for energy security (particularly in crisis situations) as well as supports the upgrading of the energy sector and development of the country's economy in general [1].

It is of vital importance to increase the Latvian energy independence. Therefore, it is obligatory that the Government energy strategy for 2030 includes the RES development.

1.1 RES Advantages in the Latvian Energy Balance

In 2010, the RES share in the Latvian final energy consumption reached 34.6%. The local RES share in heating was 45%-50%, in district heating-18%, and in electricity production > 40%.

1.2 RES Deficiencies

(1) Ineffective use of heat produced by cogeneration;

(2) Insufficient support for renewable energy in electricity generation;

(3) Gaps in modern and innovative renewable energy technologies.

1.3 Objectives of the Strategy for RES Promotion

(1) Increase of the RES share in the energy mix (mainly in the heating and transport sectors);

(2) Introduction of sustainable support mechanisms for RES;

(3) Priority for economically attractive technical solutions;

(4) Promotion of RES and related technologies by raising investments;

(5) Development of a sustainable and cost-based support mechanism for the RES use;

(6) Achievement of the 40% RES share in the final energy consumption by 2020.

It is important that expanded use of renewable resources does not impair the economic situation of businesses thus reducing the competitiveness of Latvian products.

2. Policy and Strategy for the RES Use

The Government's policies should be oriented towards greater RES capacities; besides, it would be useful to think of the new regulations concerning the use of alternative power (e.g. nuclear or gas turbines). Currently, without the TES (Thermal Electro Station) and HPP (Hydro Power Plant) regulatory capacities fast RES development is impossible.

To reach this goal, not a single measure but a coherent mix of measures is required.

2.1 Energy Policy Framework Documents

2.1.1 Guidelines for Energy Sector Development for 2007-2016

The main goal of the energy policy is to develop the guidelines for ensuring security of supply in the country. The next in importance are the goals: to increase self-sufficiency and to achieve greater

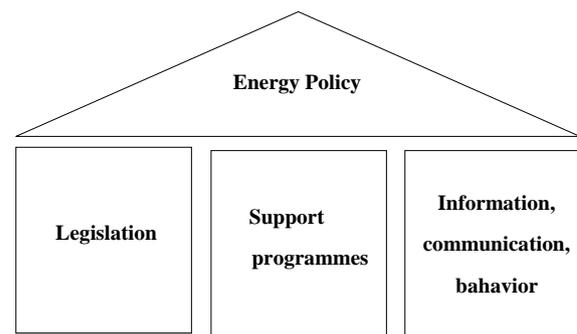


Fig. 3 Policy instruments.

diversification of energy resources. Latvia has to seek for its own fossil fuels, to increase effective use of RES and promote cogeneration (CHP).

2.1.2 Legal Framework

The legal framework includes the EU directives and National laws & regulations. One of the issues associated with utilization of energy resources (in particular, RES) is heat consumption in buildings. In accordance with the Latvian “Law on the Energy Performance of Buildings”, the environmental and economic considerations as well as binding regulations of local governments and other regulatory enactments should be taken into account in designing buildings, in order to evaluate the possibility to implement RES as an alternative solution in the relevant heating systems.

2.2 Main Support Instruments

The main support instruments are the investments in the energy sector. The Latvian government and parliament have produced a number of energy-related planning documents, legislations and regulations. The framework strategic planning document is Latvian National Development Plan 2007-2013. An updated and more comprehensive Sustainable Development Strategy 2030 is being drafted that will broaden the Principles for Sustainable Development passed in 2002. The mentioned strategic documents consider the issues of energy among others, while the key strategic document intended for the energy sector is The Principles of Energy Sector Development 2007-2016 (adopted in 2006). The Principles of Renewable

Energy Resource Use 2006-2013 have also been passed. Now, there are a number of energy sector related medium-term programmes and action plans, e.g. The Climate Change Mitigation Programme 2005-2010, Latvia's Rural Development Programme 2007-2011, The Programme of/Programme for Biofuel Production and Use in Latvia 2003-2010, the Programme for Development of Biogas Production and Use 2007-2011, as well as the EU action plans: the Action Plan for Energy Efficiency 2008-2010 (passed in 2008), and the Action Plan for Renewable Energy.

The most important energy-related legislative document is the Energy Law of 2005, which regulates the use of and support for all renewable resources [2]. The government also adopted a series of regulations; the most notable among them as Regulation No. 198 (February 24, 2009) and Regulation No. 486 (May 26, 2009), which define the most significant and, in practice, the only consistent tool for promotion of RES: the mandatory procurement scheme, which entails a guaranteed procurement price for electricity produced from renewable. In addition to this scheme, Chapter VII of the Electricity Market Law dealing with the electricity production and pricing was amended in April 2008. Now, Section 29.164 of this Chapter stipulates that the energy production businesses with generating capacity above 1 MW which use biogas or biomass can apply for the guaranteed imbursement for the installed generating capacity of biomass and biogas power plants. As of March 2009, the rules of issuing the rights to obtain the guaranteed imbursement and the requirements the applicants have to meet are laid out in Cabinet Regulation No. 198 and New Regulation No. 262. In addition to the aforementioned regular support mechanisms, Section 29 of the Electricity Market Law stipulates that the Cabinet of Ministers shall specify the measures which, in particular, would promote electricity production from biomass and the feed-in tariffs for electricity produced using renewable resources [3].

Currently the state support in the energy sector is

only given to the projects linked to adjustment of heat supply system. The priorities for the use of EU Structural Funds are listed in the Development Plan; these priorities are sub-divided into measures, which, in turn, are sub-divided into activities. It is planned to allocate approximately 140 million EUR in the energy sector from the Cohesion Fund in the next Structural Funds utilization period of 2007-2013. This money will be allocated to the measures for increasing the efficiency of district heating systems, for development of biomass-fuelled cogeneration plants and wind farms in Latvia.

2.3 EU Structural Funds

Financing of RES Projects: A special budgetary arrangement (January 28, 2011-March 24, 2011) in the framework of the budget programme "climate change mitigation financial instrument" is financing for the projects concerning the RES use in households (total 16.220 million EUR/Euros). Financial support for each project should not exceed more than 9,960 Euros (with support not exceeding 50% of the total eligible costs).

The mandatory procurement for electricity produced from RES based on the fixed purchase price formulas is reflected in: Regulations No. 262 on Production of Electricity from RES (in force since March 2010).

These regulations define the criteria of produced electricity as compulsory purchase trades. If the electricity is produced from biomass or biogas at a

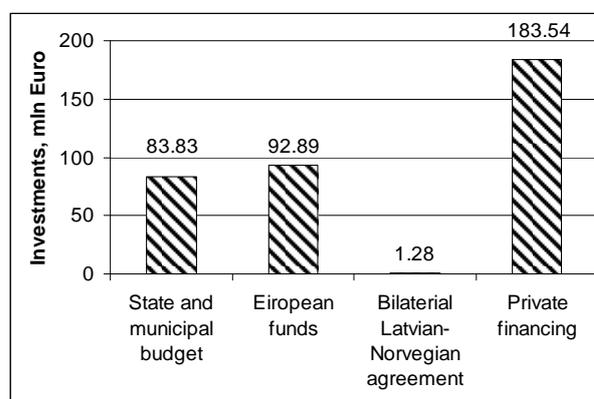


Fig. 4 Potential financial sources in RES development (2006-2013).

power plant with the installed capacity over 1 MW, it is possible to receive a guaranteed compensation for the installed capacity.

2.4 A Feed-in Tariff

A FiT (feed-in tariff) involves the obligation on the part of a utility to purchase electricity generated by renewable energy producers in its service area at a tariff determined by public authorities and guaranteed for a specific period of time (generally 20 years). A FiT's value represents the full price per kWh received by an independent producer of renewable energy, i.e. including a premium above or additional to the market price, but excluding tax rebates or other production subsidies paid by the government.

Different tariffs can be defined for different technologies (wind, solar, biomass, etc.) or different countries depending on resource conditions (e.g. solar irradiation). The rate of a FiT is furthermore reduced each year for new installations in order to stimulate decrease in production costs. Feed-in laws have been the primary mechanism used to support RES development in Europe and the US. They have a track record of some two decades and are well established throughout the European Union. At present, they are being applied in 21 EU member countries. While many countries in Europe have introduced a FiT on different levels, only some of them (e.g. Germany) have adopted appropriate rates specifically for PV or photovoltaic generation. Others used inadequate FiT parameters (for instance Austria—too low a ceiling on total installed PV capacity) and thus failed to stimulate significant investor interest.

In Latvia, the feed-in tariff has been chosen in the mandatory procurement of the energy produced from renewable as a method of support—a straightforward and effective way to reach the relevant targets. This approach is widely used in other member states. However, it also bears a number of risks, namely: the procurement price and support timeline is tied to the moment when the energy production equipment

becomes operational; and the pricing formula relies on electricity prices and fossil fuel prices. A thorough and unbiased analysis of conditions needs to be carried out as well as a calculation of reasonable return on assets. The pace and direction of technological progress needs to be estimated, which is a hard task. Misjudgements in setting the procurement price and the length of support could go both ways. Truly effective, market-based mechanisms are yet to be found. In Latvia, a quick analysis of the procurement price for the energy produced from biogas or in established hydro-electric power plants reveals overestimates. The quota system favours a closed circle of businesses, whose ties to the political parties are apparent. No wonder the Ruling Coalition Council had to agree on the pricing principles and quota volumes before the decision was made by the Cabinet of Ministers. Unreasonable procurement pricing undermines the principles of renewable energy use for sustainable development [1].

2.5 Other Support Mechanisms

Quota schemes (also called RPS (Renewable Portfolio Standard)) oblige the producers of electricity and retail providers to attain a specified minimum level of RES shares in its mix. The RPS is commonly combined with the TGC (tradable green certificates) system, which relies on the market competition and therefore is unstable in the matter of price. These certificates, being the subject of trade, contain additional profit for the user of renewable energy. The TGS system does not favour the most future-oriented and ecological technologies of producing green electricity such as photovoltaic and off-shore wind turbine.

Green Investment Scheme for Financing of RES Projects, Funding for GIS (Green Investment Scheme) operation in Latvia is obtained from the state-owned GHG (greenhouse-gas) emissions quota unit (Assigned Amount Unit or AAU) sales. The principles for using the revenues from the sale of AAUs include a clear provision stating that all income from this sale should

be reserved for “greening” projects [3].

The Latvian government guarantees that financing from GIS will be used for the “greening” purposes, which means:

- increase in the renewable energy use;
- improvement of energy efficiency;
- application of innovative low-carbon technologies;
- design and implementation of capacities for climate change mitigation.

3. New Energy Policy

The first proposal has been submitted to the Ministry of Economy of Latvia. Some recommendations for the new legislation on the effective and rational use of RES are as follows:

- To create a well-established national support scheme for production of electricity from RES—a mandatory procurement applicable to the electricity production by wind-, hydro-, biomass- and biogas power plants (PPs);
 - To reach a balance between the electricity demand and supply from local PPs using RES by 2011;
 - To further develop and implement support schemes for highly efficient cogeneration with the use of RES;
 - To promote activities for facilitation of bio-fuel production and consumption;
 - To implement the energy efficiency measures;
 - To actively participate in the EU and other international R&D projects;
 - To develop the challenge we regard the upcoming renewable energy policy up to the EU level (with the ambitious individual target for Latvia being the 42% RES share by 2020);
 - To develop and implement the relevant pilot projects.

3.1 New RES-Related Latvian Policy

On the whole, the national renewable energy policy is to promote the RES use, with due regard for environment protection and CO₂ emission reduction [4]. The main objectives of the new RES-related

energy policy are to be as follows:

- Electricity production from RES—49.3% of the total electricity produced in 2010 [5];
 - The RES share—at least 37% in the total energy mix;
 - The share of biofuels in the total marketed transport fuel should be 5.75% in 2012.

The aim of the government policy is to achieve a balance between the electricity demand and the supply from PPs by years 2011-2012. The purpose is to promote the maximum energy efficiency measures for and supply from the PPs that use local fuels and renewable sources of energy in the high-efficiency co-generation cycle. The rest could be fossil fuels other than natural gas so that there will be no it's over dominance. It is expected that in the development of cogeneration plants the energy from renewable will increase the capacities of transmission and distribution systems. For this purpose the following support tools have been selected:

- Compulsory purchase at a specified price for all Latvian electricity consumers proportionally to their consumption;
- Earmarking the cogeneration PPs for investment in their power structure from EU structural funds.

For improvement of the RES utilization and promotion of biomass cogeneration, it is expected to attract the means of EU Structural Funds and also to receive support of Cohesion Fund. By the year 2016 it is expected to attract 8.1 million LVL from the State Budget and 27 million LVL from EU Structural Funds. The RES exploitation strategy is closely connected with the introduction of measures for energy efficiency [6]. The RES policy adopts/is to adopt an integrated approach to the energy efficiency issues.

3.2 The RES Law (Draft Project)

The targets of the law are as follows:

- To promote production, utilization and export of local RES;
- To determine stable long-term investment

Table 1 Latvia national renewable energy action plan.

(TWh)	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Expected bruto demand for heating and cooling from RES	12.9	11.8	12.4	12.8	13.2	13.3	13.7	14.1	14.5	14.9	15.4	16.2
Expected bruto demand for electricity from RES	3.0	3.0	3.2	3.3	3.4	3.7	3.9	4.0	4.2	4.5	4.8	5.2
Expected energy demand for transport from RES	0.1	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.9	1.0	1.0
Expected demand from RES	16.0	15.3	16.1	16.6	17.1	17.5	18.1	18.8	19.5	20.3	21.0	22.2

environment for production, utilization and export of local RES;

- To contribute to the technologies reducing the GHG emissions.

Challenges to achieve the goals are:

- by 2020 to increase the RES use in the gross final consumption up to 40% and continue to gradually increase it;
- to promote openness/transparency and accessibility of information on the energy issues;
- to establish administrative procedures in the RES production and use;
- to determine the support measures for local RES production and use.

National goals of the RES use. The law stipulates a specific period until the year 2020 to achieve the following RES percentage in the gross final consumption:

- by 2012—not less than 34.08%;
- by 2014—not less than 34.82%;
- by 2016—not less than 35.93%;
- by 2018—not less than 37.04%;
- by 2020—not less than 40%.

Republic of Latvia National Renewable Energy Action Plan is shown in Table 1. The NREAP (National Renewable Energy Plan) of the Latvian Republic is intended for implementing Directive 2009/28/EC of the European Parliament and the Council of April 23, 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC by 2020.

The Latvia's national renewable energy action plan stipulates indicative targets for the share of RES in each type of the final energy consumption in order to

foster the fulfilment of the common objective pursuant to Directive 2009/28/EC, taking into account the potential RES available and usable in Latvia. Having regard to the potential of economically usable RES available in Latvia, the main types of usable RES will continue to be solid biomass (mainly wood), biogas, wind power, and hydro power [7].

4. Conclusions

The action plan provides for guidance towards the more extensive use of local RES in Latvia, defining the measures to be taken to attain the target prescribed in Directive 2009/28/EC, implementing sustainable development, conserving environmental quality and contributing to the reduction of greenhouse gas emissions, increasing Latvia's energy self-sufficiency, ensuring the sustainable utilization of Latvia's natural resources and the socio-economic benefits of their utilization. Support mechanisms for generating energy from RES that operate more successfully than previous ones must be established, not only for electricity but also for heating and as transport needs [7].

The EU has stepped up efforts to harmonize policies on the promotion of the use of energy from renewable in all member states by defining legally binding policy principles for the renewable energy promotion measures and setting individual renewable energy targets for each of the countries. Despite that, Latvia's renewable energy support policy, particularly the mandatory procurement scheme for the energy produced in power plants using renewable, is an area with an unstable legal framework, susceptible to frequent fluctuations in political

opinions and interests, which often are not based on the country's economic and welfare considerations. The new RES law is prepared to approval. The law is intended to improve the current situation of RES with the total and prevent misunderstanding in this issue.

In the recent years, Latvia's energy policy practice has been marked by inconsistencies and the lack of socio-economic reasoning, which allows, in some cases, suspecting influence of lobbyists on the development of legal framework. Examples of that trend are the aforementioned frequent changes in the mandatory procurement regulation and the feed-in pricing formula, which is politically motivated rather than based in thorough economic reasoning. In the energy sector, the lack of flexibility is observed/exists in regard to the mandatory procurement scheme, which, as said before, is meant to promote the use of renewable energy resources. Such inflexibility may lead to situations when the support schemes follow the letter of the EU directives but not the spirit. The quota system supports the renewable energy target (49.3%) on paper, but the structure of the system does not prevent the situation when the businesses with the procurement rights do not set up the planned renewable energy plants whilst the businesses that would be willing to do so have no access to the quotas.

Within the frame of the State Research Programme's Project "Research and development of the renewable energy resources production and consumption technologies for mitigation of climate changes generated by the energy sector" recommendations have been worked up for rational RES use.

As an example of useful experience the activities of the IPE (Institute of Physical Energetics) should be mentioned. The IPE is a leader in the solar energy research and development in Latvia. In particular, our institute employs solar energy for its hot water supply. The IPE solar energy polygon can be used not only as

an auxiliary heat supplier but also for education purpose and training of young specialists—students, bachelors, PhD competitors, etc..

The future development of national energy conception should be assessed from a balanced economic, technical and environmental point of view.

The energy vision in this scope should:

- be professionally designed;
- be in compliance with the country's interests;
- be accepted by the government;
- highlight the entire energy sector development frameworks;
 - be balanced, with allowance for the use of local resources and expanded opportunities in the transport, electricity and heating areas;
 - contribute to the national benefits in the scope of RES use.

To meet this challenge it is necessary to develop a unified national energy document which would include a comprehensive energy analysis of demand, risk and technologies in all energy sectors, taking into account the current situation in the sector and the RES share increase in assessing the cost-efficient green renewable energy applications. Much attention should be paid to the consumption, which is one of the most significant indicators in the energy policy (RES use included).

The short-term targets are: to support the industrial sector in transition of heat production from fossil fuels to renewable energy. The medium-to-long term targets are: to gradually replace natural gas and petroleum products by synthetic natural gas or liquid fuel produced from wood.

In particular, the unified national energy policy should promote energy-saving building as a means of the RES use, the fuel diversification (with the focus on local energy resources), considering the electricity sector from the viewpoint of regional electricity market development and security aspects, as well as providing accurate assessment of past and current support mechanisms and of the impact exerted by

changes in the sphere of electricity generation and prices. Based on these considerations an impaired vision of the future energy development could be formed.

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