

The Republic of Latvia
Ministry of Economics

Information Report

“The Regular Report of the Republic of Latvia pursuant to Article 22 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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”

Riga, 2012

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Abbreviations in use

RE	renewable energy
RES	renewable energy sources
CSB	Central Statistical Bureau
EC	European Commission
MoE	Ministry of Economics
EU	European Union
HPP	hydropower plant
RSS	Rural Support Service
LV	Republic of Latvia
Cabinet	Cabinet of Ministers
CIS	Commonwealth of Independent States
GHG	greenhouse gas
SJSC	state joint stock company
WPS	wind power station

Introduction

Pursuant to Article 22(1) of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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 (hereinafter — Directive 2009/28/EC), each Member State shall submit a report to the European Commission (hereinafter — EC) on the progress in the promotion and use of energy from renewable energy sources (hereinafter — RES) by 31 December 2011, and every two years thereafter. During the period until 31 December 2021, Latvia has an obligation to submit six regular reports.

In order to promote implementation of a common objective pursuant to Directive 2009/28/EC, the “Republic of Latvia National Renewable Energy Action Plan for implementing Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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” (hereinafter — Action Plan) has been drawn up, and it states indicative tasks for the RE part of each type of final energy consumption (energy consumption in heating and cooling, electricity production, and transport), taking into account the potential of RES available and usable in Latvia.

Latvia’s total final energy consumption is secured by local energy resources and the flow of primary resources from Russia, the CIS countries, the Baltic countries, the European Union (hereinafter — EU) and other countries. Currently in the delivery of Latvia’s primary resources three types of energy resources dominate, making up approximately equal proportions: petroleum products (mainly petrol and diesel), natural gas and wood-fuel. Like many other EU countries, Latvia is dependent on imports of primary resources.

RES traditionally account for a significant part in the balance of Latvian primary energy resources. Already in 2005, which is assumed as the reference year in Directive 2009/28/EC, the share of renewable energy (hereinafter — RE) in the total gross final energy consumption in Latvia was 32.6%, whereas in EU-27 the average share of RE was only 8.5%.

This report has been developed on the basis of the EC’s guidance template¹ in order to fulfil the obligation stated in Article 22(1) of Directive 2009/28/EC and to ensure that Latvia’s first regular report on progress in the promotion and use of energy from RES is submitted to the EC within the prescribed time limit.

¹ Guidance template for the Member States’ progress reports in accordance with Directive 2009/28/EC, http://ec.europa.eu/energy/renewables/transparency_platform/template_progress_report_en.htm

1. The share of production and use of renewable energy

Pursuant to part A of Annex I of Directive 2009/28/EC, Latvia's overall target is to increase the share of RES in the gross final energy consumption from 32.6% in 2005 to 40% in 2020.

The rapid increase in gross final energy consumption and the slow development of new RE projects caused a significant decrease in the share of RE, and in 2007 it was 29.6%. However, in 2009 this share increased by 4.7 percentage points compared to 2007 and reached the level of 34.3%.

Compared to 2009, in 2010 the total share of RE decreased by 1.8 percentage points i.e. 32.5%, although the share of RE in production of electricity increased by 0.1 percentage points, reaching 42.1%, whereas the share of RE in transport increased three times, reaching 3.3%. During this period, the total share of RE decreased due to reduction of the RE share in heating and cooling, which accounts for the largest part of final consumption.

Table 1

The sectoral (electricity, heating and cooling and transport) and overall shares of energy from renewable sources

	2009	2010
RES-H&C (%)	47.9	43.8
RES-E (%)	4.0	42.1
RES-T (%)	1.1	3.3
Overall RES share (%)	34.3	32.5
<i>Of which from cooperation mechanism (%)</i>	0	0
<i>Surplus for cooperation mechanism (%)</i>		

Source: Ministry of Economics (hereinafter — MoE)

Table 1a

Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

	2009	2010
(A) Gross final consumption of RES for heating and cooling	1190	1158
(B) Gross final consumption of electricity from RES	261	271
(C) Gross final consumption of energy from RES in transport	12	35
(D) Gross total RES consumption ²	1454	1456
(E) Transfer of RES to other Member States	-	-
(F) Transfer of RES from other Member States and 3 rd countries	-	-
(G) RES consumption adjusted for target (D)–(E)+(F)	1454	1456

Source: MoE

²Article 5(1) of Directive 2009/28/EC stipulates that gas, electricity and hydrogen from renewable energy sources shall be considered only once. Double accounting is not allowed.

When comparing the actual RE contribution of each sector to the final energy consumption in 2010 (Table 1a) with the expected contribution as stated in Table 4a of the Activity Plan, it leads to a conclusion that the gross final consumption of energy from RES in heating and cooling exceeds the expected level (1020 ktoe) by 138 ktoe, and the gross final consumption of electricity generated from RES also exceeds the expected level (261 ktoe) by 10 ktoe. Final consumption of energy generated from RES in transport is under the expected level (42 ktoe) by 7 ktoe. Total gross final consumption of RE exceeds the expected level (1320 ktoe) by 136 ktoe. However, the actual gross consumption of energy also considerably exceeds the level expected in the Action Plan. The expected gross final consumption of energy in the Action Plan, in addition to the scenario of energy efficiency for year 2010, was 4033 ktoe, whereas the actual gross final consumption of energy reached 4481 ktoe. Therefore the total share of RE (Table 1) is 0.2 percentage points smaller than expected in the Action Plan.

Considering the potential of economically usable RES available in Latvia, the main types of usable RES are biomass, mainly wood-fuel, as well as biogas, wind power and hydropower.

The RE segment in the structure of electricity consumption consists of hydropower plants (HPP), wind power stations (WPS), biogas power plants and biomass power plants, as well as cogeneration plants using RES. Figure 1 shows a structure of Latvia's actual gross consumption of electricity in 2010.

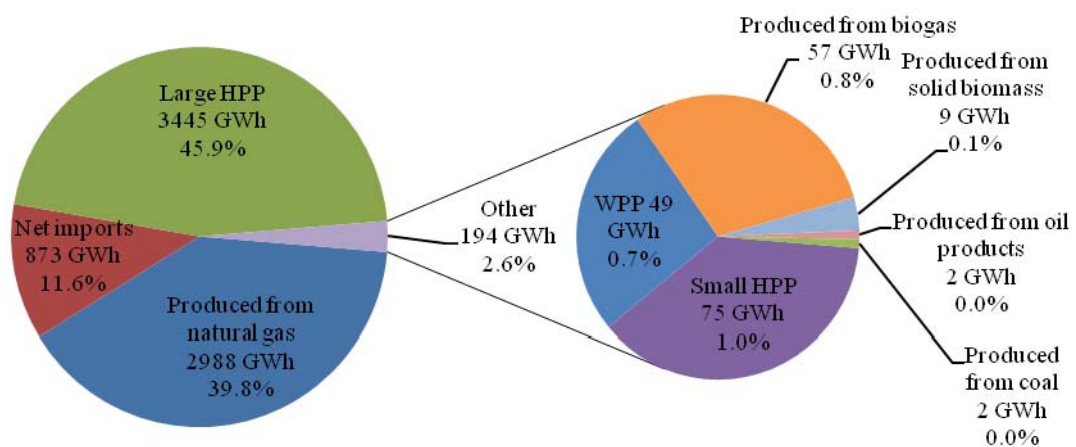


Figure 1. Structure of Latvia's actual gross consumption of electricity in 2010 (GWh, %)

Source: MoE

Having regard to the normalised hydropower and wind power, the total share of RE in gross consumption of electricity in 2010 was 42.1%; most of it — almost 94% — was supplied by large hydropower plants, and the rest was supplied by small hydropower plants, wind power stations, biogas power plants, biomass power plants and cogeneration plants using RES.

Compared to 2009, in 2010 the share of cogeneration plants using RES included in the gross consumption of electricity has increased by 0.2 percentage points, i.e. from 0.6% to 0.8%, whereas the share of wind power stations remained constant, i.e. 0.7%.

Since a significant part of the electricity generated from RES is supplied by the three largest hydropower plants in Latvia (Kegums HPP, Plavinas HPP and Riga HPP) and the amount of electricity generation is largely dependent on water flow in the river Daugava, the share of electricity generated from RES in the gross consumption of electricity can vary considerably. However, these variations are greatly reduced by the amount of hydropower normalised for calculation needs pursuant to Article 5(3) and Annex II of Directive 2009/28/EC.

During the period from 2008 to 2010, 16 new wind power stations, 9 new biogas power plants and 1 new biomass power plant have been installed.

Table 1b

Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology

	2009		2010	
	MW	GWh	MW	GWh
Hydro ³	1536	2927	1576	3033
Hydro ⁴ :		3457		3520
<i>non-pumped</i>	1536	3457	1576	3520
<i><1 MW</i>	24	60	25	69
<i>1 MW–10 MW</i>	1	6	1	6
<i>>10 MW</i>	1511	3391	1550	3445
<i>pumped</i>	0	0	0	0
<i>mixed</i> ⁵	0	0	0	0
Geothermal	0	0	0	0
Solar:	0	0	0	0
<i>photovoltaic</i>	0	0	0	0
<i>concentrated solar power</i>	0	0	0	0
Tide, wave, ocean	0	0	0	0
Wind ⁶	29	54	30	55
Wind ⁷ :		50		49
<i>onshore</i>	29	50	30	49
<i>offshore</i>	0	0	0	0
Biomass ⁸ :	10	49	16	66
<i>solid biomass</i>	2	4	5	9
<i>biogas</i>	8	45	11	57
<i>bioliquids</i>	0	0	0	0
TOTAL	1575	3030	1622	3154
<i>of which in CHP</i>	7	46	13	58

Source: CSB

Solar energy is also used in Latvia. However, its contribution to the energy balance is minimal. According to the data of the Solar Energy Association the current capacity of solar energy installed in Latvia is the following: solar power stations connected to electricity grid — approx. 235 kW_p; autonomous solar power stations — approx. 20 kW_p; solar thermal power stations (collectors) — above 527 kW_{th}. Since not all the members of the Solar Energy Association are companies and experts in the field, the total

³ Normalised in accordance with Directive 2009/28/EC and methodology of Eurostat.

⁴ Actual value.

⁵ In accordance with the new methodology of Eurostat.

⁶ Normalised in accordance with Directive 2009/28/EC and methodology of Eurostat.

⁷ Actual value.

⁸ Taking into account only those that comply with the applicable sustainability criteria compared to the last subparagraph of Article 5(1) of Directive 2009/28/EC.

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capacity of solar energy generated for electricity and heating could be slightly higher.

Heating and cooling, including district heating, account for the largest share in gross final energy consumption accounts for heating and cooling, including district heating. Therefore, the use of RE in heating and cooling has a considerable impact on the total share of RE. In 2010, the share of thermal energy generated by RES in the heating and cooling sector was 43.8%.

The heating sector provides the best opportunities for utilizing local renewable resources most effectively.

The prevalent RES used in all types of heat supply — district, local, and individual heating — are wood-fuel and its products. For the needs of district heating, firewood, woodchips, sawdust, granules and other wood-processing by-products are used. In decentralised heating, households mainly use firewood and briquettes.

According to the data of Latvian Heat Pump Association, as of July 2009, approx. 5300 heat pumps were installed in Latvia with a total capacity of approx. 47 MW. However, due to implementation of projects for climate change financial instrument, the current capacity is significantly higher.

Table 1c

Total actual contribution (final energy consumption) from each renewable energy technology in heating and cooling (ktoe)

	2009	2010
Geothermal (excluding low-temperature geothermal heat in heat pump applications)	0	0
Solar	0	0
Biomass ⁹ :	1190	1158
<i>solid biomass</i>	1186	1153
<i>biogas</i>	3	4
<i>bioliquids</i>	0	0
Renewable energy from heat pumps:		
- of which <i>aerothermal</i>	... ¹⁰	... ¹¹
- of which <i>geothermal</i>		
- of which <i>hydrothermal</i>		
TOTAL	1190	1158
<i>Of which DH</i> ¹²	96	103
<i>Of which biomass in households</i> ¹³	805	735

Source: CSB

⁹ Taking into account only those that comply with the applicable sustainability criteria compared to the last subparagraph of Article 5(1) of Directive 2009/28/EC.

¹⁰ Data not available.

¹¹ Data not available.

¹² Share of district heating and/or cooling in the total consumption of renewable energy used for heating and cooling.

¹³ Share in the total consumption of renewable energy used for heating and cooling.

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According to the data of the State Revenue Service, in 2010 in Latvia 1062.95 thousand tonnes of fuel, fuel that contains bioproducts, and biofuel were sold and used for own consumption; this is 1.66 kilo tonnes more than in 2009.

In 2010, the share of biofuel from the total energy content of all petrol and diesel placed on the market for the needs of transport was 2.96%. Compared to 2009, this figure has increased by 2.48 percentage points.

An increase in the amounts of fuel generation (mixing) can be explained by amendments of 3 November 2009 introduced to the Cabinet of Ministers (hereinafter — Cabinet) Regulation No. 332 of 26 September 2000 “Requirements for Conformity Assessment of Petrol and Diesel Fuel”, stating that, as of 1 October 2009, unleaded petrol with octane number 95 can be sold in Latvia only if the added bioethanol content is 4.5–5% by volume of the total amount of petrol and diesel fuel (except for Class 0, 1, 2, 3 and 4 diesel fuel for use in arctic and severe winter conditions) can be sold only if the added biodiesel (obtained from rapeseed oil) content is 4.5–5% by volume of the total amount of the product.

One of the companies with the best potential for using electricity in transport is the state joint stock company (hereinafter — SJSC) “Latvian Railway” (“Latvijas dzelzceļš”). According to the data of the SJSC “Latvian Railway”, the amount of electricity used for electric traction of trains in 2009 was 39 GWh (3.4 ktoe) and in 2010 this figure remained the same as in 2009. Currently, electricity is not used in railway freight traffic. According to the SJSC “Latvian Railway” forecast, in case of expanding the electrified railway network, in 2020 an additional 194.5 GWh of electricity will be required for traction energy in freight traffic, whereas in 2030 the consumption of electricity in railway freight traffic might amount to 570 GWh¹⁴.

¹⁴ Feasibility Study on Electrification of Latvian Railway Network. Final Report. Ministry of Transport of the Republic of Latvia, July 2011
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Table 1d

Total actual contribution from each renewable energy technology in the
transport sector (ktoe)

	2009	2010
Bioethanol/ bio-ETBE	3	8
<i>Of which biofuels¹⁵ Article 21(2)</i>	0	0
<i>Of which imported</i>	0	0
Biodiesel	2	19
<i>Of which biofuels¹⁶ Article 21(2)</i>	0	0
<i>Of which imported¹⁷</i>	0	0
Hydrogen from renewables	0	0
Renewable electricity ¹⁸	7	8
Renewable electricity ¹⁹	4	4
<i>Of which road transport²⁰</i>	2	2
<i>Of which non-road transport</i>	2	2
Others (as biogas, vegetable oils, etc.) — please specify	0	0
<i>Of which biofuels²¹ Article 21(2)</i>	0	0
TOTAL ²²	12	35
TOTAL ²³	8	31

Source: CSB

¹⁵ Biofuels as defined in Article 21(2) of Directive 2009/28/EC.

¹⁶ Biofuels as defined in Article 21(2) of Directive 2009/28/EC.

¹⁷ From the total amount of biodiesel.

¹⁸ In accordance with Article 3(4)(c) of Directive 2009/28/EC.

¹⁹ Actual value.

²⁰ Including trams and trolleybuses.

²¹ Biofuel as defined in Article 21(2) of Directive 2009/28/EC.

²² In accordance with Article 3(4)(c) of Directive 2009/28/EC.

²³ Actual value.

2. Measures to promote the growth of energy from renewable sources

Table 2

Description of all policies and measures

Name and reference of the measure	Type of measure	Expected result	Target group and/or activity	Existing or planned	Start and end dates of the measure
1. The right to sell the produced electricity as the volume of electricity to be mandatorily procured (Cabinet Regulation No. 262 of 16 March 2010 "Regulations Regarding the Production of Electricity Using Renewable Energy Resources and the Procedures for the Determination of the Price").	The public trader is obliged to purchase electricity generated from RES from those electricity producers who have received the right to sell electricity under the mandatory procurement process.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	Economic operators that generate or plan to generate electricity from RES at power plants in Latvia by utilising: hydropower, biogas, any type of solid or liquid biomass, wind power and solar energy.	Pursuant to Cabinet Regulation No. 365 of 17 May 2011 'Amendments to Cabinet Regulation No. 262 of 16 March 2010' 'Regulations Regarding the Production of Electricity Using Renewable Energy Resources and the Procedures for the Determination of the Price' (hereinafter — amendments to Cabinet Regulation No. 262), in the period from 26 May 2011 to 1 January 2013 the Ministry does not organise any tenders on granting the right to sell under procurement the electricity generated by biomass, biogas, solar or wind power plants and producers may not qualify for selling electricity under the mandatory procurement process.	As from 22 August 2007.
2. The right to receive guaranteed payment for the electrical capacity installed in a power plant. (Cabinet Regulation No. 262 of 16 March 2010 "Regulations Regarding the Production of Electricity Using Renewable Energy Resources and the Procedures for the Determination of the Price").	The system operator is obliged to pay for the electrical capacity installed in a power plant to the economic operator that generates electricity from biomass or biogas and is qualified to receive such right.	Promotion of electricity generation from RES.	Producers generating electricity in power plants with installed electrical capacity above 1 MW, utilising biomass or biogas.	In accordance with the amendments to Cabinet Regulation No. 262, in the period from 26 May 2011 to 1 January 2013 producers may not qualify for the right to receive the guaranteed fee for the electrical capacity installed.	As from 14 March 2009.

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3. Mandatory procurement of electricity generated in cogeneration power plants (Cabinet Regulation No. 221 of 10 March 2009 "Regulations Regarding Electricity Production and Price Determination Upon Production of Electricity in Cogeneration").	The public trader is obliged to purchase the electricity generated in efficient cogeneration processes.	Promotion of electricity generation in cogeneration processes utilising RES.	Electricity producers that generate electricity in highly efficient cogeneration power plants.	Existing.	As from 11 November 2006.
4. The right to receive guaranteed payment for the electrical capacity installed in a cogeneration plant (Cabinet Regulation No. 221 of 10 March 2009 "Regulations Regarding Electricity Production and Price Determination Upon Production of Electricity in Cogeneration").	The system operator is obliged to pay for the electrical capacity installed in a power plant to the economic operator that generates electricity from biomass or biogas and is qualified to receive such right.	Promotion of electricity generation in cogeneration processes utilising RES.	Electricity producers that generate electricity in highly efficient cogeneration power plants.	Existing.	As from 18 March 2009.
5. Financial support quotas for biofuel (Cabinet Regulation No. 280 of 15 April 2008 "Regulations on Financial Support Quota for Biofuel").	Direct state aid.	Promotion of biofuel production.	Economic operators that produce biofuel.	Ended.	2005 – 31 December 2010.
6. Reduction of excise duty ("Law on Excise Duties").	Indirect aid — by means of reducing the rate of excise duties.	Promotion of use of biofuel.	Reduced rate of excise duties is applicable to the following types of fuel: – unleaded petrol and a mixture of ethyl alcohol with the content of ethyl alcohol from 70 to 85% by volume (inclusive) (E85); – a mixture of diesel and biodiesel obtained from rapeseed oil, where the content of the latter is at least 30% by volume (B30); – rapeseed oil that is sold or used as heating fuel or transport fuel and biofuel obtained completely from rapeseed oil (B100).	Existing.	
7. Mandatory admixture of biofuel in fossil fuel in the amount of 4.5–5% by volume of the total amount of end product (Cabinet Regulation No. 332 of 26 September 2000 "Requirements for Conformity Assessment of Petrol and Diesel Fuel").	Regulatory.	Promotion of production and consumption of biofuel in order to attain the target of 5.75% of the total amount of transport fuel in the economy by 31 December 2010 as stipulated by the "Biofuel Law".	In Latvia, only diesel with biodiesel content of 4.5–5% by volume of the total amount of end product, and petrol with 4.5–5% bioethanol content by volume of the total amount of petrol may be sold. The requirement on the mandatory admixture of 5% biofuel does not apply to Class 0, 1, 2, 3 and 4 diesel for use in arctic or severe winter conditions. The mandatory admixture of biofuel applies to Category	Existing.	As from 1 October 2009.

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			A, B, C, D, E and F diesel and petrol with octane number 95 for use in temperate climatic conditions.		
8. Tax relief. ("Electricity Tax Law").	Indirect aid — by means of exemption from the electricity tax and relief thereof.		Section 6(1) of the "Electricity Tax Law" prescribes that (1) electricity obtained from the following sources shall be exempt from tax: 1) from RES; 2) in hydropower plants; 3) in cogeneration power plants complying with the efficiency criteria laid down in the laws and regulations on electricity generation in the process of cogeneration.	Existing.	As from 1 January 2007.
9. Technology conversion from fossil to RES. (Cabinet Regulation No. 441 of 12 May 2010 "Regulations of the Open Tender 'Technology Conversion from Fossil to Renewable Energy Sources' for the Projects Financed by the Climate Change Financial Instrument").	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by ensuring the conversion from technologies that use fossil energy sources to technologies that use RES.	Latvian city or regional local governments and educational establishments, micro, small and medium-sized economic operators registered in the Republic of Latvia, as well as scientific institutions registered in the register of scientific institutions.	Existing.	Project implementation by 1 December 2012.
10. Raising public awareness regarding the importance and possibilities of reducing greenhouse gas (hereinafter — GHG) emissions. (Cabinet Regulation No. 789 of 17 August 2010 "Regulations of the Open Tender 'Raising Public Awareness the Importance and Possibilities of Reducing Greenhouse Gas Emissions' for the Projects Financed by the Climate Change Financial Instrument" with amendments introduced until 19.10.2011).	Financial (Climate change financial instrument).	Raising public awareness regarding the importance and possibilities of reducing GHG emissions, thereby fostering informed decision-making and environmentally sound action.	Submitter of project application shall be: 1. an association or a foundation registered in the Republic of Latvia or an economic operator registered in the Republic of Latvia, whose publication is registered in the Mass Media Register of the Enterprise Register of the Republic of Latvia, if the target audience of the publication or the website corresponds with the objectives of the financial instrument; 2. an association or a foundation registered in the Republic of Latvia with one or more project cooperation partners operating in the field of environmental education or popularising of energy saving measures; 3. an association registered in the Republic of Latvia, representing specialists of construction and architecture, energy, construction engineering—environmental field, energy auditors, or an association that is a member of the European Association of Chambers of Commerce with one or more project cooperation partners.	Existing.	Project implementation by 31 March 2012.
11. Complex solutions for reducing GHG	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by reducing	Project applicants shall be state or municipal vocational education establishments.	Existing.	Project implementation by

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emissions in buildings of state and municipal vocational education establishments. (Cabinet Regulation of 5 May 2010 No. 417 "Regulations of the Open Tender 'Complex Solutions for Reducing Greenhouse Gas Emissions in Buildings of State and Municipal Vocational Education Establishments' for the Projects Financed by the Climate Change Financial Instrument" with amendments introduced until 22.03.2011).		electricity consumption for heating and lighting in the buildings of state and municipal vocational education establishments in the Republic of Latvia.			1 December 2012.
12. Increase of energy efficiency for municipal buildings (Round I). (Cabinet Regulation No. 645 of 25 June 2009 "Regulations of the Open Tender 'Increase of Energy Efficiency in Municipal Buildings'" for the Projects Financed by the Climate Change Financial Instrument' with amendments introduced until 11.10.2011).	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by reducing the heat consumption in public buildings of the local governments of the Republic of Latvia and in buildings necessary for ensuring autonomous functions of local governments.	City or regional local governments.	Existing.	Project implementation by 1 December 2011.
13. Development of technologies for reducing GHG emissions. (Cabinet Regulation No. 1492 of 22 December 2009 'Regulations of the Open Tender "Development of Technologies for Reducing Greenhouse Gas Emissions' for the Projects Financed by the Climate Change Financial Instrument").	Financial (Climate change financial instrument).	Promoting the availability of products and technologies reducing GHG emissions in Latvia, thereby ensuring the reduction in GHG emissions.	A submitter of a project application shall be a direct or indirect administration institution of the Republic of Latvia, derived public person or economic operator registered in the Republic of Latvia.	Existing.	Project implementation by 1 December 2012.
14. Increase of energy efficiency in the buildings of higher education establishments. (Cabinet Regulation No. 1 of 5 January 2010 "Regulations of the Open Tender 'Increase of Energy	Financial (Climate change financial instrument).	CO ₂ emission saving by reducing the consumption of heat and electricity.	Higher education establishments accredited in the Republic of Latvia.	Existing.	Project implementation by 1 December 2012.

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Efficiency in the Buildings of Higher Education Establishments' for the Projects Financed by the Climate Change Financial Instrument").					
15. Complex solutions for reducing GHG emissions in manufacturing buildings. (Cabinet Regulation No. 521 of 8 June 2010 "Regulations of the Open Tender 'Complex Solutions for Reducing Greenhouse Gas Emissions in Manufacturing Buildings' for the Projects Financed by Climate Change Financial Instrument" with amendments introduced until 22.03.2011).	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by introducing RES technologies and energy-efficiency measures.	Economic operators.	Existing.	Project implementation by 1 December 2012.
16. Complex solutions for reducing GHG emissions in municipal buildings (Round II). (Cabinet Regulation No. 542 of 21 June 2010 "Regulations of the Open Tender 'Complex Solutions for Reducing Greenhouse Gas Emissions in Municipal Buildings' for the Projects Financed by the Climate Change Financial Instrument" with amendments introduced until 11.10.2011).	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by introducing complex solutions — RES technologies combined with energy-efficiency measures.	City and regional local governments.	Existing.	Project implementation by 1 December 2012.
17. Use of RES in the transport sector. (Cabinet Regulation No. 898 of 21 September 2010. "Regulations of the Open Tender 'Use of Renewable Energy Sources in the Transport Sector' for the Projects Financed by the Climate Change Financial Instrument").	Financial (Climate change financial instrument).	Vehicles converted for the use of RES (biogas, vegetable oil, biodiesel and bioethanol).	Economic operators.	Existing.	No contracts have been concluded as part of this project.
18. Use of RES for reduction of GHG emissions. (Cabinet Regulation	Financial (Climate change financial instrument).	Reduction of CO ₂ emissions by increasing RES utilisation in	City or regional local government councils of the Republic of Latvia, direct or indirect administration	Existing.	Project implementation by 1 November

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No. 12 of 4 January 2011 “Regulations of the Open Tender ‘Use of Renewable Energy Sources for Reduction of Greenhouse Gas Emissions’ for the Projects Financed by the Climate Change Financial Instrument”).		generation of heat and electricity.	institutions, and economic operators registered in the Republic of Latvia.		2012.
19. Use of RES in the household sector (Round I). (Cabinet Regulation No. 11 of 4 January 2011 “Regulations of the Open Tender ‘Use of Renewable Energy Sources in the Household Sector’ for the Projects Financed by the Climate Change Financial Instrument”).	Financial (Climate change financial instrument).	Reduction of GHG emissions by introducing technologies for heat or electricity generation in residential buildings in order to ensure heat or electricity generation from RES and heat or electricity supply exclusively for household needs.	Project applicants shall be: 1. an owner of a residential building — a natural person; 2. an association which is formed by apartment owners of an apartment house and is not engaged in any economic activities, and acts on behalf of apartment owners — natural persons — whose apartment is situated in this apartment house.	Existing.	Project implementation by 1 November 2012.
20. Low energy-consumption buildings. (Cabinet Regulation No. 1185 of 28 December 2010 “Regulations of the Open Tender ‘Low Energy-Consumption Buildings’ for the Projects Financed by the Climate Change Financial Instrument”).	Financial (Climate change financial instrument).	Reduction of GHG emissions by increasing energy-efficiency of buildings and by utilising RES technologies.	Project applicants shall be direct or indirect administration institutions, city or regional local government councils of the Republic of Latvia, micro, small or medium-sized economic operators, or natural persons.	Existing.	Project implementation by 1 November 2013.
21. Reduction of GHG emissions in the lighting infrastructure of public municipal areas. (Cabinet Regulation No. 408 of 24 May 2011 “Regulations of the Open Tender ‘Reduction of Greenhouse Emissions in the Lighting Infrastructure of Public Municipal Areas’ for the Projects Financed by the Climate Change Financial Instrument”).	Financial (Climate change financial instrument).	Effective lights for streets and pedestrian roads in local governments.	Local governments of the Republic of Latvia, their institutions or agencies, or economic operators.	Existing.	Project implementation by 1 November 2012.
22. Use of RES in the household sector (Round II). (Cabinet Regulation No. 11 of 4 January 2011 “Regulations of the Open Tender ‘Use of Renewable Energy Sources in the Household Sector’ for the	Financial (Climate change financial instrument).	Reduction of GHG emissions in the household sector by means of supporting purchase and installation of technologies for heat or electricity micro-generation in residential	Project applicants shall be: 1. an owner of a residential building — a natural person; 2. an association which is formed by apartment owners of an apartment house and is not engaged in any economic activities and acts on behalf of apartment owners — natural persons — whose apartment is situated in this	Existing.	Project implementation by 1 December 2012.

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Projects Financed by the Climate Change Financial Instrument” with amendments effective as from 04.10.2011)		buildings for the purpose of ensuring generation of heat or electricity from RES and heat or electricity supply exclusively for household needs.	apartment house.		
23. Development of technologies for reducing GHG emissions and implementation of pilot projects. (Cabinet Regulation No. 608 of 2 August 2011 “Regulations of the Open Tender ‘Development of Technologies for Reducing GHG Emissions and Implementation of Pilot Projects’ for the Projects Financed by the Climate Change Financial Instrument”).	Financial (Climate change financial instrument).	Development of products and technologies for reducing GHG emissions, and transfer of knowledge and technologies to support implementation of pilot projects in Latvia.	Direct or indirect administration institutions of the Republic of Latvia, derived public persons, or economic operators registered in the Republic of Latvia.	Existing.	Deadline for Project submission: 2 January 2011. Project implementation by 1 May 2013.
24. Rural Development Programme for 2007–2013, Sub-Measure “Energy Production from Biomass of Agricultural and Forestry Origin”.	State and EU aid for rural and fisheries development.	The purpose of the Sub-Measure is to support economic operators who ensure energy generation from biomass of agricultural or forestry origin, intending to sell the electricity generated by means of biogas cogeneration process. Biogas is defined as gas obtained from an anaerobic fermentation process. As of 01.09.2011, 40 projects were approved with total eligible amount of LVL 4.975 millions, total electrical capacity of 40.525 MW, and supervision has been started for 5 of these projects.	Applicants for the aid shall be: 1. economic operators producing agricultural and forestry products referred to in Annex I to the Treaty on Functioning of the European Union; 2. capital companies whose shareholder is a legal person producing agricultural and forestry products referred to in Annex I to the Treaty on Functioning of the European Union, or cooperative societies of agricultural services, which are considered to be appropriate agricultural cooperative societies in accordance with the compliance criteria for cooperative societies as stipulated in the laws and regulations, and whose members produce agricultural and forestry products referred to in Annex I to the Treaty on Functioning of the European Union, and which own at least 51% of the total number of shares in a capital company.	Existing.	From the end of 2008 to 31 December 2015. The deadline for Round 3 in submission of project applications is 9 December 2011.
25. Support for establishment and development of enterprises (including diversification of non-agricultural activities). Sub-measure: Support for	State and EU aid for rural and fisheries development.	The objective of the measure is to promote non-agricultural economic activities or employment in rural areas and to diversify non-agricultural	Applicants for the aid shall be: 1) for Sub-Measure 312(311)/1 “Support for Establishment and Development of Enterprises” — natural persons willing to establish a new micro-sized enterprise, or legal persons with more	Existing.	From 2008 to 31 December 2015. Round 7 of the project submission ended in 2011, the deadline for

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<p>establishment and development of micro-enterprises. Sub-measure: Diversification of non-agricultural activities.</p>		<p>activities in order to develop alternative sources of income and raise the income level in rural areas. Fuel production from agricultural and forestry products is included in the Activity “Development or Diversification of the Existing Economic Activities” that supports the production of firewood, wood chips, charcoal, granules and briquettes. The following sectors are also supported: electricity, gas supply, heat supply and air conditioning (NACE Rev. 2, Section D, Division 35), excluding manufacture of gas and distribution of gaseous fuels through mains (NACE Rev. 2, Section D, Group 35.2).</p>	<p>than 75% share of private capital in equity capital and complying with the definition of a micro-sized enterprise pursuant to the classification stipulated in Annex I to the Commission Regulation No. 800/2008; 2) for Sub-Measure 312(311)/2 “Diversification of Non-Agricultural Activities” — natural or legal persons producing agricultural products referred to in Annex I to the Treaty Establishing the European Community pursuant to Article 35 of Commission Regulation (EC) No. 1974/2006 of 15 December 2006 laying down detailed rules for the application of Council Regulation (EC) No. 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD). The share of revenue from agricultural activities of the aid applicant shall be at least 51%. If the aid applicant is a legal person, the share of private capital in its equity capital shall be at least 75%. Aid applicants under this sub-measure may be micro, small and medium-sized economic operators complying with the definition specified in Annex I to Commission Regulation No. 800/2008, as well as large economic operators complying with the definition specified in Article 2(8) of Commission Regulation No. 800/2008. Number of approved projects as of year 2011: 453.</p>		<p>submitting project applications in the next round is at the beginning of 2012.</p>
<p>26. Development of cogeneration plants utilising RES</p>	<p>Cohesion Fund</p>	<p>The objective of the activity is to significantly increase the quantities of electricity and heat produced from RES, thus reducing Latvia’s dependence on the imports of primary energy sources.</p>	<p>Users of heating and electricity, local governments and economic operators.</p>	<p>Existing.</p>	<p>As from 12 March 2009.</p>
<p>27. Measures to increase efficiency of district heating systems.</p>	<p>Cohesion Fund.</p>	<p>The objective of the activity is to significantly increase the efficiency of heat production, to reduce heat losses in transmission and distribution systems and to promote the</p>	<p>Users of heating, local governments and economic operators.</p>	<p>Existing.</p>	<p>As from 12 March 2009.</p>

		replacement of fossil fuels with renewable or other types of fuel.			
28. Payment of premiums for generation of renewable electricity (draft Law on Renewable Energy).	Financial (payment of premiums for generated electricity).	Promotion of RE utilisation and competitiveness of the energy generated from RES.	RE producers generating electricity in the Republic of Latvia, territorial waters of the Republic of Latvia, exclusive economic area of the Republic of Latvia, and in the continental shelf are entitled to receive a premium for renewable electricity generated and sold in the electricity market.	Planned.	
29. Payment of premiums to producers of thermal energy (draft Law on Renewable Energy).	Direct state aid in the form of investments.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	(1) Energy producers, including the energy producers engaged in district heating or district cooling, or the energy producers utilising energy in a manufacturing cycle or for manufacturing of any other products are entitled to receive the aid: 1) for introducing such energy-generation installations that utilise biomass, biogas or bioliquids for heat generation; 2) for transition from energy-generation installations utilising fossil energy sources to energy-generation installations utilising RES; 3) to increase efficiency of heat generation by reducing heat losses in transmission and distribution systems.	Planned.	
30. The transmission system operator covers a part of the renewable energy producer's system connection costs, including the costs for reconstructing reconstruction of the existing transmission and distribution system in order to connect the plant to a connection point selected by the producer of renewable energy, as well as costs for metering equipment for the supplied and received electricity.	Indirect state aid.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	1) The transmission system operator shall fully reimburse the connection costs incurred to the renewable energy generation plants with installed capacity up to 500 kilowatts (inclusive); 2) The distribution system operator shall fully reimburse connection costs incurred to the renewable energy generation plants with installed capacity from 500 kilowatts to 1 MW (inclusive); 3) The distribution system operator shall reimburse 50% of the connection costs incurred to the renewable energy generation plants with installed capacity from 1 MW to 5 MW (inclusive).	Planned.	
31. Aid for introducing such energy-generation installations that utilise biomass, biogas or bioliquids for heat generation (draft Law on Renewable Energy).	State, EU or other funding.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	It is planned to stipulate that the aid will be available for the energy producers, including the energy producers engaged in district heating or district cooling, or the energy producers utilising energy in a manufacturing cycle or for manufacturing of any other products.	Planned	
32. Aid for transition from energy-generation installations utilising	State, EU or other funding.	Promotion of RE utilisation and competitiveness of the energy	It is planned to stipulate that the aid will be available for the energy producers, including the energy	Planned.	

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fossil energy sources to energy-generation installations utilising renewable energy sources (draft Law on Renewable Energy).		generated from RES.	producers engaged in district heating or district cooling, or the energy producers utilising energy in a manufacturing cycle or for manufacturing of any other products.		
33. Aid for increasing the efficiency of heat generation by reducing heat losses in transmission and distribution systems (draft Law on Renewable Energy).	State, EU or other funding.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	It is planned to stipulate that the aid will be available for the energy producers, including the energy producers engaged in district heating or district cooling, or the energy producers utilising energy in a manufacturing cycle or for manufacturing of any other products.	Planned.	
34. Aid for new or fossil-fuel-replacing biomass plants for heat generation (for heat-generating installations) with capacity above 10 MW (draft Law on Renewable Energy).	State, EU or other funding.	Promotion of RE utilisation and competitiveness of the energy generated from RES.	It is planned to stipulate that the aid will be available for the energy producers, including the energy producers engaged in district heating or district cooling, or the energy producers utilising energy in a manufacturing cycle or for manufacturing of any other products.	Planned.	

2.1. Summary of progress in administrative procedures

Compared to the RE generation and utilisation procedures stated in the Action Plan, there were no significant changes in the administrative procedures in Latvia in 2010; in the same time the need to lessen certain regulatory barriers has been evaluated, and Latvia will report on these barriers in the second regular report to the EC.

Non-regulatory barriers for the RE development include:

- technical barriers,
- financial (investment) barriers,
- operational problems,
- access to sources of raw materials and the necessary infrastructure,
- public attitude,
- internalisation of external costs (e.g. new taxes).

It leads to an overall conclusion that there are certain non-regulatory barriers in Latvia that inconvenience wider use of RE.

The high investment costs and difficulties in attracting the necessary amount of funding can be considered as the most significant barriers. The opportunities of the mandatory procurement and guaranteed payment as stated in the following laws and regulations have made a considerable contribution to the development of RE.

Cabinet Regulation No. 262 of 16 March 2010 “Regulations Regarding the Production of Electricity Using Renewable Energy Resources and the Procedures for the Determination of the Price” (hereinafter — Cabinet Regulation No. 262) prescribes:

- the conditions for electricity generation using RES existing or obtained in the territory of the Republic of Latvia (hereinafter — LV);
- the criteria according to which a producer who produces electricity from RES may acquire the right to sell the produced electricity as the volume of electricity to be mandatorily procured;
- the criteria according to which a producer who generates electricity in power plants with the installed electrical capacity above 1 MW, utilising biomass or biogas, may acquire the right to receive a guaranteed payment for the electrical capacity installed in a power plant;
- the procedures for determining, implementing and monitoring the mandatory procurement amount of the electricity generated from RES;
- what part of the total consumption of the electricity end users in Latvia shall be mandatorily covered by the electricity generated from RES, determining it for each type of RES;
- the procedures for determining the price for electricity generated from RES, depending on the type of energy resources;
- the procedures for waiving the right to sell the generated electricity under the mandatory procurement;
- the procedures for receiving a guarantee of origin of the electricity generated from RES;
- the measures for promoting electricity generation from biomass;
- the authorised institution that shall issue the guarantee of origin of the electricity generated from RES;
- the procedures for determining the guaranteed payment for the electrical capacity installed in a power plant, the supervision procedures and the amount of the payment;
- the procedures by which an economic operator may waive the right to receive the guaranteed payment for the electrical capacity installed in a power plant.

Cabinet Regulation No. 221 of 10 March 2009 “Regulations Regarding Electricity Production and Price Determination Upon Production of Electricity in Cogeneration” (hereinafter — Cabinet Regulation No. 221) regulate the mandatory procurement of electricity generated in cogeneration processes, as well as the right to receive guaranteed payment for the electrical capacity installed in a cogeneration power plant. In accordance with Cabinet Regulation No. 221, from 1 November 2010 only the economic operators who utilise or plan to utilise RES in electricity generation may qualify for the right to sell under the mandatory procurement the electricity generated by the cogeneration processes or to receive the guaranteed payment for installed electrical capacity, having regard to the fact that Latvia plans reducing the share of imported natural gas in the district heating sector.

Tax relief is also applicable to RE in Latvia. Section 6(1) of the “Electricity Tax Law” adopted on 19 December 2006 prescribes that electricity obtained from the following sources shall be exempt from tax:

- 1) from RES;
- 2) in hydropower plants;
- 3) in cogeneration power plants complying with the efficiency criteria stated in the laws and regulations regarding electricity generation in the process of cogeneration.

Section 14(5) of the “Law on Excise Duties”, with amendments adopted on 20 December 2010, states that for rapeseed oil manufactured in an excise goods warehouse of LV or imported from another EU Member State and sold or used as heating oil or fuel, and biodiesel fuel completely obtained from rapeseed oil, the duty shall be calculated according to the rate of LVL 0 per 1000 litres.

Regulatory barriers include those related to administrative procedures, e.g. acquiring permits (certificates, licences, etc.), standards, which are prescribed as necessary for accessing the energy market by current laws and regulations, as well as the lack of optimised and simplified procedures for issuing such permits, unequal rules applicable to the participant of the market, and lack of coordination among various institutions.

In order to commence and continue energy generation from RES in Latvia, the following permits are required:

- 1) A permit issued by the Ministry of Economics for increasing the electricity generation capacities or for implementing new capacities pursuant to Cabinet Regulation No. 883;

- 2) A licence issued by the Public Utilities Commission (hereinafter — Regulator) (the procedures have been simplified since 1 January 2012 by replacing licensing with registration in the register of electricity producers) in the cases prescribed by laws and regulations pursuant to Cabinet Regulation No. 1227 of 27 October 2009 “Regulations Regarding Types of Regulated Public Utilities” (hereinafter — Cabinet Regulation No. 1227);

- 3) A permit for an electricity system operator to connect a power plant to the system;

- 4) A decision by the Environmental State Bureau on an environmental impact assessment, or technical regulations issued by the Regional Environmental Board of the State Environmental Service. The “Law on Environmental Impact Assessment” applies to power plants with significant environmental impact (hydropower plants, large wind parks and large biogas complexes);

- 5) A Category A or B permit or Category C polluting activity confirmation issued by the Regional Environmental Board (pursuant to Cabinet Regulation No. 1082 of 30 November 2010 “Procedures by which Polluting Activities of Category A, B and C shall be Declared and Permits for the Performance of Category A and B Polluting Activities shall be Issued”);

6) A permit to emit greenhouse gases issued by the Regional Environmental Board (pursuant to provisions of the “Law on Pollution”);

7) If a producer wants to obtain the right to sell electricity under the mandatory procurement, Regulation No. 221 — a decision issued by the Ministry of Economics regarding qualification for the mandatory procurement or granting the right to receive guaranteed payments for the installed electrical capacity;

8) Heating and electricity tariffs approved by the Regulator.

In order to reduce non-regulatory barriers that inconvenience electricity generation from RES, Cabinet Regulation No. 1227 states that it shall be necessary in the electricity supply sector to regulate electricity generation in power plants with the installed capacity above 1 megawatt (MW). It is not necessary to regulate electricity generation in lower-capacity power plants (with the installed capacity up to 1 MW).

2.2. Measures for connecting the electricity generated from RES to the grid

Connection of the electricity producers to the grid is regulated by the “Electricity Market Law”. Section 8 of the “Electricity Market Law” states that activities of the system operator are regulated by means of operational supervision performed by the owner of an electricity system. Pursuant to Section 8(2), the Regulator lays down unified provisions for system connection applicable to producers and users, as well as methodology for determining connection costs.

With Decision No. 280 of 3 September 2008, the Regulator’s Board approved the “Regulations for System Connection Applicable to Electricity Producers” (hereinafter — Decision No. 280) issued pursuant to Section 8(2) of the “Electricity Market Law”. The regulations for system connection set unified provisions for connecting an electricity system, as well as methodology for calculating the connection costs applicable to electricity producers. The regulations are published on the Regulator’s website: www.sprk.gov.lv.

Pursuant to Section 10 of Decision No. 280, the connection costs are determined in accordance with economically justified expenses for installing a connection. Section 12 of Decision No. 280 states that all expenses related to construction of a system connection shall be covered by the producer. In accordance with Section 13 of the regulations, in case the electricity grids of the system operator require reconstruction in line with the construction plan for the system connection, the system operator and the producer agree in writing on implementation of the necessary reconstruction works. The costs of the reconstruction work mentioned in this Section shall be covered by the producer.

An important precondition for new RE producers to enter the market is the development of the national energy infrastructure. In the reporting period,

there have not been any significant changes to electricity distribution grids. In 2010, implementation of a project for strengthening the transmission grid in the Western region of Latvia (Kurzeme Ring) was started, and the project is divided into three stages.

Stage 1: Construction of the Riga 330 kV transmission ring — planned to be implemented by the end of 2012 by commissioning the cable Riga TEC1 – Imanta that will increase the security of electricity supply in the repair modes. Justification of the project is related to the need to strengthen the Riga junction in order to create in the next stage a strong link for development of the 330 V ring in the Western region of Latvia (Kurzeme). Besides, it will increase the security of transit flow in the direction of the Western region of Lithuania, thus reducing the constraints for transmission grid in this section.

Stage 2: Construction of the 330 kV transmission line Grobina – Ventspils — planned to be implemented by the end of 2013.

Stage 3: Construction of the 330 kV transmission line Ventspils – Dundaga – Tume – Riga — planned to be implemented by the end of 2018.

As a result of implementing the Kurzeme Ring project, the security of electricity supply for consumers in Kurzeme region and cities will improve, infrastructure will be provided for the increasing electrical load in Kurzeme region, and a potential for connecting new electrical installations of electricity users will be ensured, so that they can connect new wind power station capacities on the land or off-shore, as planned for the Kurzeme region. This project will lay foundations for development of wind parks on the coast of Kurzeme. The planned total length of the new 330 kV electricity lines of the Kurzeme Ring is approx. 340 km and the expected capacity is 800 MW.

3. Support schemes and changes thereof to promote the use of renewable energy

In accordance with the “Electricity Market Law”, Cabinet Regulation No. 262 and Cabinet Regulation No. 221, support measures for economic operators generating electricity from RES are implemented under the mandatory procurement.

In accordance with the procedures stated in Cabinet Regulation No. 262 and Cabinet Regulation No. 221, the mandatory procurement is performed on the basis of an agreement concluded between the public trader and the economic operator or an authorised person thereof, on the grounds of an administrative act issued by the Ministry of Economics on granting the right to the mandatory procurement. Additionally, by 1 March of each year, the economic operator shall submit an annual report to the Ministry of Economics regarding the operation of each power plant utilising RES for electricity generation, indicating the type of energy source used, amount of the generated electricity, and technologies used for electricity generation.

Cabinet Regulation No. 262 states the amount of the yearly support provided under the mandatory procurement for various types of RES during the period from 2010 and 10 years afterwards, and this amount is expressed as a percentage of the total consumption by electricity end users in Latvia. Cabinet Regulation No. 221 does not provide for any quantitative restrictions to the electricity generated for the mandatory procurement by means of the cogeneration process utilising RES.

In accordance with Cabinet Regulation No. 262, the right to the mandatory procurement is granted by means of a tendering procedure, evaluating the compliance of the submitted applications to the administrative and qualitative assessment criteria. The tender shall be organised each year from 1 to 31 October.

The amount of support provided under the procurement for electricity generated from RES, as stipulated in Cabinet Regulation No. 262, is shown in Figure 2 below.

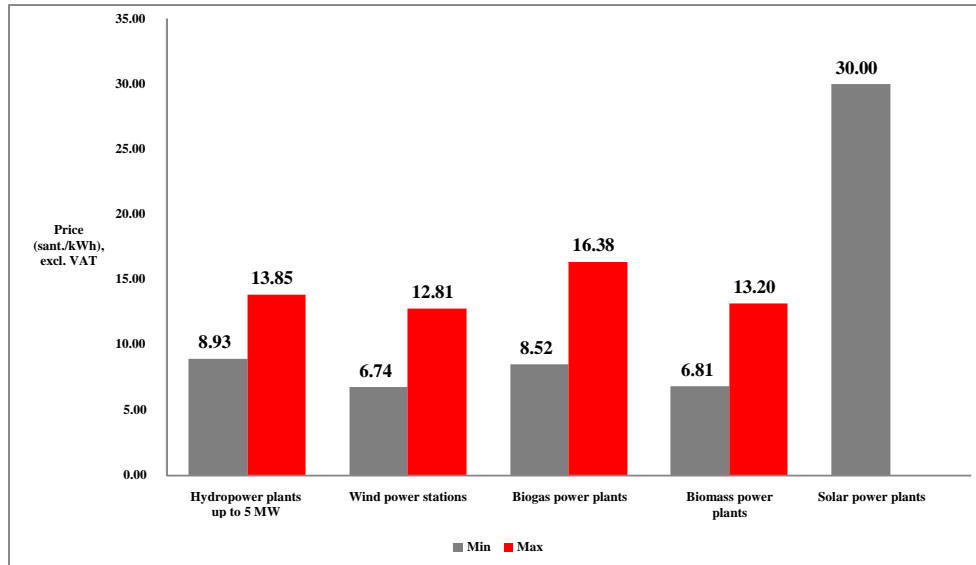


Figure 2. Prices of the mandatory procurement as of August 2011 pursuant to Cabinet Regulation No. 262, santims/kWh

Source: MoE

The formulae for determining the price of the mandatory procurement, as stated in Cabinet Regulation No. 262, are presented in Table 3a below.

Table 3a

Formulae for calculating the price, as stated in Cabinet Regulation No. 262²⁴

Type of a power plant	Electrical capacity installed	Tariff	
		First 10 years after commissioning	Next 10 years after commissioning
Wind power stations	≤ 0.25 MW	$C = 147 \times e \times k;$	$C = 147 \times e \times k \times 0.6;$
	> 0.25 MW	$C = 120 \times e \times k;$	$C = 120 \times e \times k \times 0.6;$
Biomass power plants	≤ 4 MW	$C = \frac{T_g \times k}{9.3} \times 4.5$	$C = \frac{T_g \times k}{9.3} \times 3.4$
	>4 MW	$C = \frac{T_g \times k}{9.3} \times 3.6$	$C = \frac{T_g \times k}{9.3} \times 3$
Biogas power plants	≥2 MW	$C = \frac{T_g \times k}{9.3} \times 4.5$	$C = \frac{T_g \times k}{9.3} \times 3.4$
	< 2 MW	$C = 188 \times e \times k;$	$C = 188 \times e \times k \times 0.8$
Hydropower plants	≤ 5 MW	$C = 188 \times e \times k \times 0.8$	$C = 159 \times e \times k$
Solar power plants	unlimited	20 years after commissioning $C = 427 \times e$	

Pursuant to Cabinet Regulation No. 221, the mandatory procurement price of electricity generated in RES cogeneration plants is determined according to the following price formula.

1) For cogeneration plants utilising RES with the installed electrical capacity up to 4 MW, the mandatory procurement price is determined according to this formula:

$$C = \frac{T_g \times k}{9.3} \times 4.5$$

²⁴ Symbols used in the formulae:

C — the price without value added tax for which a public trader purchases electricity generated from RES (LVL/MWh) from the power plant;

e — the exchange rate of Lats (LVL) specified by the Bank of Latvia against the single currency of the European Union on the day when the invoice for electricity was issued;

k — the price differentiation coefficient referred to in Annex 9 to Cabinet Regulation No. 262;

T_g — the final tariff for trade of natural gas (without value added tax) approved by the Regulator, as specified for the consumption of natural gas from 126 thousand n.m³ up to 1260 thousand n.m³ per year (LVL/'000 nm³), with the actual calorific value.

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2) For cogeneration plants utilising RES with the installed electrical capacity above 4 MW, the formula for determining the mandatory procurement price includes an energy component of the procurement price for the cogeneration electricity and a capacity component the trader pays for the electrical capacity installed in the cogeneration plant (LVL/MW per year).

Cabinet Regulation No. 365 of 17 May 2011 “Amendments to Cabinet Regulation No. 262 ‘Regulations Regarding the Production of Electricity Using Renewable Energy Resources and the Procedures for the Determination of the Price’” states that in the period from 2 May 2011 to 1 January 2013 the Ministry will not organise any tenders on granting the right to sell under the mandatory procurement the electricity generated in biomass, biogas, solar or wind power plants, and producers may not qualify for selling electricity under the mandatory procurement, as well as for acquiring the right to receive guaranteed payments for the electrical capacity installed.

The “Information Report of the Republic of Latvia on the implementation in 2010 of the task set by Article 4(1) of Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport” contains information on the measures implemented in 2010 in order to promote the use of biofuels or other renewable fuels with a purpose of replacing diesel fuel and petrol for transport needs, as well as information on state resources allocated for energy generation from biomass for sectors other than transport.²⁵

3.1. Supply of the electricity generated from renewable energy sources to end users

Section 29(1) and (2) of the “Electricity Market Law” states that a certain part from the total consumption by all Latvian electricity end users shall be covered by the electricity generated from renewable energy sources and that a producer who generates energy from renewable energy sources may obtain the right to sell the generated electricity as the volume of electricity to be mandatorily procured. Section 30 of the “Electricity Market Law” states that the costs of the procurement shall be covered by all Latvian end users of electricity in proportion with their respective electricity consumption by buying from the public trader a particular share of electricity generated from renewable energy sources or by compensating the costs of the public trader. The methodology for calculating the eligibility of the procurement costs shall be stated by the Regulator.

Cabinet Regulation No. 262 states the part of the total electricity consumption by end users in Latvia that shall be mandatorily covered by RES

²⁵ “Information report of the Republic of Latvia on the implementation in 2010 of the task set by Article 4(1) of Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport” is available on the website of the European Commission: http://ec.europa.eu/energy/renewables/biofuels/ms_reports_dir_2003_30_en.htm

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electricity for the period until 31 December 2010 and the subsequent 10 years, broken down by each type of renewable energy sources (see Table 3b).

Table 3b

Portion of total electricity consumption by end users in Latvia that must be covered by electricity generated from renewable energy sources

Type of renewable energy source and power plant	In 2010 and the subsequent 10 years
Hydropower plants with capacity above 5 MW	34.31%
Hydropower plants with capacity 5 MW or less	1.98%
Wind power stations with a capacity above 0.25 MW	5.10%
Wind power stations with a capacity of 0.25 MW or less	0.27%
Biogas power plants	7.93%
Biomass power plants and power plants in which biomass is used in combination with fossil fuel	4.97%
Solar power plants	0.01%
TOTAL:	54.57%

Pursuant to Article 3(6) of Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC (hereinafter — Directive 2003/54/EC), Member States shall ensure that electricity suppliers specify the following information in or with the bills and in promotional materials made available to final customers:

- a) a contribution of each energy source to the overall fuel mix of the supplier over the preceding year;
- b) at least the reference to existing sources of information, such as web pages, where the information on the environmental impact, in terms of at least emissions of CO₂ and the radioactive waste resulting from the electricity generation by the overall fuel mix of the supplier over the preceding year is publicly available.

“Regulations on Information to End Users of Electricity” issued pursuant to Section 32(4) of the “Electricity Market Law” have been approved with the Decision No. 77 of the Council of the Public Utilities Commission of 22 March of 2006. These regulations state the type and amount of information the system operator shall provide in bills and information materials made available to end users.

“Regulations on Information to End Users of Electricity” stipulate that energy supply economic operators shall, at least once a year, provide end users with an information material, which includes information on the components of the electricity tariff. This information material shall include the following percentage of the cost items from the total charge, as stated by the system operator:

- costs for electricity (including costs for trade service);
- costs for electricity distribution service (including costs for reactive energy);
- costs for electricity transmission service;
- costs for the mandatory purchase of electricity.

Once a year, the energy supply economic operator shall provide end users with an information material, which includes information on the types of primary energy sources and their share in the amount of electricity supplied by the respective system operator during the previous year, and an information material, which includes sources of reference where information on impact on the environment is publicly available, at least in regards to carbon dioxide emissions and radioactive waste produced as a result of generating the supplied electricity from primary energy sources during the previous year.

The energy supply economic operator ensures that printed copies of the above mentioned public information are freely available to the end user at the economic operator’s customer centre. If there is no customer service centre established, the energy supply economic operator shall provide access to such information in its domicile, actual address or its subsidiary office. The energy supply economic operator shall publish this information on its website, if created.

4. Support schemes for renewable energy sources that provide additional benefits

For the time being, Latvian institutions do not have any information on the use of such RES that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material and ligno-cellulosic material. Such biofuels are not produced in Latvia.

5. System of guarantees of origin

The rules stated in the “Electricity Market Law” derive from Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market (hereinafter — Directive 2001/77/EC), including rules regulating the guarantees of origin (Article 5 of Directive 2001/77/EC). Pursuant to Article 26(3) of Directive 2009/28/EC, the Directive 2001/77/EC is completely repealed as from 1 January 2012.

Article 5 of Directive 2001/77/EC, among others, became invalid as from 1 April 2010, and up to then this Article regulated the guarantees of origin for electricity generated from renewable energy sources. In the same time, pursuant to Article 27(1) of Directive 2009/28/EC, until 5 December 2010 the Member States had to make their national laws and regulations compliant with Directive 2009/28/EC.

Cabinet Regulation No. 262 issued pursuant to Section 29(2), (4) and (5) and Section 29¹ (2) and (5) of the “Electricity Market Law” did not ensure full compliance with Article 15 of Directive 2009/28/EC.

In order to fully implement the requirements laid down in Article 15 of Directive 2009/28/EC, Cabinet Regulation No. 900 of 22 November 2011 “Regulations on Receiving the Guarantee of Origin for Electricity Generated from Renewable Energy Sources” (hereinafter — Cabinet Regulation No. 900) was issued pursuant to Section 29(5), Section 29¹ (5) and Section 29² and is effective as from 3 December 2011. Cabinet Regulation No. 900 states the information to be included in the guarantee of origin and the procedures the electricity producer has to follow in order to receive a guarantee of origin for the amount of electricity, in megawatt hours (MWh), generated from renewable energy sources. In accordance with Cabinet Regulation No. 900, the MoE issues guarantees of origin and maintains a record thereof electronically.

In order to receive a guarantee of origin, the electricity producer shall submit to the MoE a printed or electronic application for receiving a guarantee of origin.

In order to ensure reliability of the guarantee of origin system and to protect it against fraudulent activities, Cabinet Regulation No. 900 stipulates that the data included in the application on the amount of electricity sold to participants of electricity market during the period for which the guarantee of origin is requested are confirmed by the system operator to whose electricity grid the power plant is connected to, and the total amount of electricity stated in one or more guarantees of origin issued to the same producer in a respective period of time does not exceed the amount of electricity generated from renewable energy sources and sold to participants of the electricity market in the same period of time.

Until 2 December 2011 (inclusive), the MoE issued guarantees of origin for the electricity generated from RES pursuant to Cabinet Regulation No. 262.

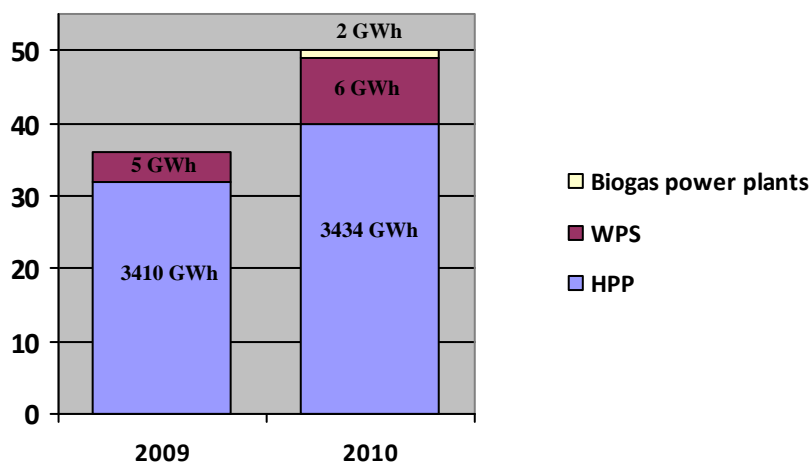


Figure 3. The number of guarantees of origin issued for the electricity generated from RES in 2009 and 2010 pursuant to Cabinet Regulation No. 262

Source: MoE

Pursuant to Cabinet Regulation No. 262, on request of economic operators, the MoE had issued 36 guarantees of origin for the year 2009 (for the total amount of 3414.829 GWh) for electricity generated from RES, including 32 guarantees of origin (for 3410.134 GWh) for electricity generated in HPPs and 4 guarantees of origin (for 4.695 GWh) for electricity generated in WPSs. For the year 2010, the MoE has issued 50 guarantees of origin (for the total amount of 3481.519 GWh), including 40 guarantees of origin (for 3433.996 GWh) for electricity generated in HPPs, 9 guarantees of origin (for 5.963 GWh) for electricity generated in WPSs, and 1 guarantee of origin (for 1.560 GWh) for electricity generated from biogas.

At the moment, it is not intended to establish in Latvia a system of guarantees of origin for RE used in heating and cooling.

6. Availability of biomass resources and their use in energy generation

Generation of bioenergy is a crucial aspect; however, it is much more important to provide people with food and livestock with fodder.

The aim of every farmer is to grow the highest-quality raw materials for food production, therefore the data is very approximate. Moreover, we would like to draw attention to the fact that it is only since 20 July 2011, with the Cabinet Regulation No. 545 of 5 July 2011 “Regulations on Sustainability Criteria of Biofuels and Bioliquids, Mechanisms for their Implementation and Procedures of Supervision and Control” coming into effect, that the Rural Support Service (hereinafter — RSS) has been able to compile the information regarding amounts of biomass used for energy generation (in this case, on raw materials in biofuel production and certification on their compliance with the sustainability criteria). In future, such compilation system should be considered also for other types of raw materials in generation of bioenergy; however, due to insufficient funding, a complete system for information compilation will not be possible in the immediate future.

Table 4

Biomass supply for energy use

	Amount of domestic raw material		Amount of imported raw material		Amount of exported raw material		Gross amount		Primary energy, ktoe	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
<i>Biomass supply for heating and electricity.</i>										
1. Direct supply of wood biomass from forests and other wooded land for energy generation (firewood), '000 m ³	6226	5868	7	2	740	805	5493	5065	880	811
2. Indirect supply of wood biomass, '000 m ³	3482	3683	11	10	1209	1573	2284	2120	422	392
2.1. Wood briquettes, '000 m ³	46	66	1	0	34	43	13	23	4	7
2.2. Wood granules, '000 m ³	751	880	1	10	680	843	73	47	22	14
2.3. Wood residues, '000 m ³	1206	1106	0	0	51	52	1156	1054	185	169
2.4. Fuel wood chips, '000 m ³	1478	1631	8	0	444	635	1042	996	212	202
3. Straw, other biomass, '000 t	2	4	-	-	-	-	2	4	0.7	1.4
4. Gas from waste deposit areas, other biogas, millions m ³	15	21	-	-	-	-	15	21	7	10
5. Sludge gas from sewage, millions m ³	5	6	-	-	-	-	5	6	3	3
<i>Biomass supply for transport.</i>										
6. Bioethanol, '000 t	13.5	14.8	2.9	6.6	11.5	11.9	4.9	9.5	4	5
7. Biodiesel, '000 t	45	43.4	-	3.5	48	27.6	-3	19.3	-3	17

Source: CSB

For calculating the amount of wood in solid cubic metres, the following coefficients were used:

- wood residue, fuel wood chips — 1 solid m³ = 2.5 loose bulk freight m³;
- wood briquettes, wood granules — 1 solid m³ = 0.7 t.

For calculating the potential of the primary energy, the following minimum calorific values of energy sources were used:

Energy source	Unit	Minimum calorific value (TJ)
Wood	1000 solid m ³	6.7
Wood briquettes		11.9
Wood granules		12.6
Wood residue		6.7
Wood chips		8.5
Straw	1000 t	14.4
Gas from waste deposit areas	million m ³	19.51 — 2009 19.82 — 2010
Sludge gas from sewage	million m ³	23.04 — 2009 22.80 — 2010
Bioethanol	1000 t	26.8
Biodiesel	1000 t	37.2

$$1 \text{ TJ} = 0.0239 \text{ ktoe}$$

In 2009, the net amount of biodiesel was negative because the previously produced supplies were partially used for export needs.

CSB does not maintain records on the biomass used for production of biofuel and biogas. The Latvian Association of Biofuel Producers provided information on the amount of raw materials purchased for production of biofuel (Table 4a).

Table 4a

Amount of raw materials purchased by Latvian biofuel producers for production of biofuel

Raw material	Purchased in Latvia (t)		Purchased in the EU (t)		Purchased outside the EU (t)	
	2009	2010	2009	2010	2009	2010
Cereals, of which:	29,532	29,889	14,354	27,725	-	-
rye	3592	12,603	2760	1142	-	-
wheat	21,890	14,770	2841	20,674	-	-
triticale	4050	2516	8753	5909	-	-
Rape	32,118	48,413	6631	3155	26,627	14,474
Rapeseed oil	4945	5590	1351	2678	10,453	9962

Source: Latvian Biofuel and Bioenergy Association

In 2010, the RSS surveyed units of agricultural land larger than 1 ha per unit, in total 2,352,159 ha, and established the following:

1. cultivated agricultural land (farmed or at least maintained in a good agricultural and environmental condition) — 1,983,260 ha;
2. uncultivated or unfarmed agricultural land — 368,900 ha, of which:
 - a. overgrown — 49,710 ha;
 - b. unfarmed — 316,341 ha;
 - c. covered with buildings — 2849 ha.

According to provisional results of agriculture census in 2010, the area sown with cereals and industrial crops, including reed canary grass, dedicated to energy generation needs was 3135 ha.

Table 4b

Current domestic agricultural land use for production of crops dedicated to energy generation

Land use	Surface ('000 ha)	
	2009	2010
1. Land used for common arable crops and oilseeds:		
rye	59	34.6
wheat	285.7	307.6
triticale	13.8	12.1
rape	93.3	110.6
corn	9.8	7.1
2. Land used for short rotation trees (willows, aspens, grey alders)	... ²⁶	5.3 ²⁷
3. Land used for other energy crops, such as grasses (reed canary grass, switch grass, <i>Miscanthus</i>), sorghum

Source: CSB

Several species of trees, such as willows and aspens, are suitable for obtaining energy wood-fuel in Latvia. Also grey alder is a quick-growing species of trees in Latvian conditions. Willows are not used for energy generation yet. They are grown in an area of several ten thousands of hectares mainly for decorative purposes. The area of willow plantations is not being recorded in Latvia. According to information available to the Latvian State Forest Research Institute "Silava", the largest area of a single willow plantation is 7 ha. Willow plantations are located far from each other.

It is estimated that some tens of owners have started growing energy wood-fuel in these plantations, and willows have been planted in an area of 30–50 ha. Quick-growing aspens are planted in an area of approx. 200 hectares, and about 10 planters are engaged in growing them.

Additionally, we show the amount of plants grown in 2010 (Table 4c) that can be used for biogas production:

- hay, green forage, ensilage of perennial grasses — 2720.9 thousand t;
- corn for ensilage and green forage — 209.0 thousand t.

Utilisation in 2010 (excluding: fodder, seed material, losses and supplies): cereals — 7.7 thousand t, and rape — 1.2 thousand t, which can be assumed as utilisation for energy production.

²⁶ Data not available.

²⁷ Provisional results of agricultural census in 2010.

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Table 4c

Total yield of cultivated plants that can be used for energy production

	Total yield ('000 t)	
	2009	2010
Rye	162.2	70.2
Wheat	1036.4	989.3
Triticale	33.3	26.4
Rape	204.7	226.3
Corn	226.6	209.0

Source: CSB

Yearly potential of raw materials for biogas production (according to provisional data of the Latvian University of Agriculture) is as follows:

- cattle manure — 32.2 million m³/year;
- pig manure — 20.0 million m³/year;
- poultry manure — 21.6 million m³/year;
- by-products from slaughterhouses — 2.1 million m³/year
- by-products from crop farming, and green feeding — 20.0 million m³/year.

7. Changes in price of raw materials and use of land

Growing of energy crops in Latvia does not directly impact the price of food and raw materials in Latvia. Rather, they are directly impacted by global processes outside the country.²⁸

During the recent years, Latvia has been a net exporter of cereals and energy crops, and its level of self-sufficiency is high. However, an increase in the production of energy crops may lead to a decrease in the production of other cereals. Moreover, the share of energy crops in the total areas of cereal plantations in EU-27 will exceed the respective figure in Latvia, and this is due to an increase also in the production of corn, soy and other cereals, as well as the production of oilseeds for bioenergy generation.

This process will have an indirect but significant impact on the Latvian market, because Latvia's self-sufficiency of energy crops and vegetable oil does not exceed 3%.

Changes in the prices of raw materials and use of land in 2009 and 2010 are shown in Tables 4d and 4e.

Table 4d

Indices of agricultural produce (in the comparable prices)

	2009		2010 ²⁹	
	% vs. 2005 (2005 - 100%)	% vs. previous year	% vs. 2005 (2005 - 100%)	% vs. previous year
Agricultural produce	108.5	98.9	103.8	95.7
Crop-farming produce	110.3	95.7	99.7	90.4
Animal produce	107.6	104.3	109.5	101.8

Source: CSB

It is not expected that the production of biofuel at an early stage will compete with agricultural production, whereas in the long term it might provide an incentive for the development of more intensive agriculture in Latvia with higher added value.

According to the data of the State Land Service, as of 1 January 2011, the area of agricultural land in Latvia was 2423.2 thousand ha³⁰, although a large part of this land is uncultivated. In the recent years, there has been a trend for the area of agricultural land to decrease and the area of woodland to increase. Compared to 2009, last year the area of agricultural land has decreased by

²⁸ Study "Application of Sustainability Criteria for Use of Biomass and Development of Measures" (2009) — available on the website of the Latvian Environmental Protection Fund Administration: http://lvafa.gov.lv/faili/petijumi/Biomasas_izmantosana.pdf

²⁹ Provisional data.

³⁰ Report on administrative territories and territorial units of land in the Republic of Latvia as of 1 January 2011 — available on the website of the State Land Service: <http://www.vzd.gov.lv/sakums/publikacijas-un-statistika/parskats/?id=807>

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6543 ha, whereas the area of woodlands has increased by 6693 ha. In the same time, the use of agricultural land in Latvia increases constantly; however, in 2010, approximately one quarter of the agricultural land was still uncultivated.

Table 4e

Use of agricultural land ('000 ha)

	2005	2009	2010
Agricultural land in use	1733.7	1833.0	1805.5
- of which arable land	1091.8	1167.6	1173.4
- of which perennial plantations (excluding strawberries)	12.8	5.9	6.8
- of which grasslands and pasturelands	628.9	659.4	625.2

Source: CSB

8. Development and share of second-generation biofuels

Currently, second-generation biofuels from waste, residues, non-food cellulosic material and lingo-cellulosic material are not being produced and used in Latvia. In 2010, cereals, rape and rapeseed oil were used for the production of biofuels.

Table 5

Production and consumption of biofuels referred to in Article 21(2) of Directive 2009/28/EC

Biofuels referred to in Article 21(2)³¹	2009	2010
Total production of biofuels referred to in Article 21(2)	0	0
Total consumption of biofuels referred to in Article 21(2)	0	0
Share (%) of biofuels referred to in Article 21(2) in the total renewable energy for transport	0	0

³¹ Biofuels produced from waste, residues, non-food cellulosic material, and lingo-cellulosic material. EMZino_150212_atjaun; Information Report: "The Regular Report of the Republic of Latvia pursuant to Article 22 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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"

9. Environmental impact caused by the production of biofuels and bioliquids

In Latvia, energy crops are grown for the production of biofuel: bioethanol, pure vegetable oil and biodiesel. Bioethanol is produced from wheat, rye and triticale, whereas pure vegetable oil and biodiesel are mainly produced from rape. Biomass of corn ensilage is used as a substrate for biogas production.³²

Selection of energy crops and place and technology of their cultivation play an important role in determining positive or negative environmental impact caused by a particular type of biofuel, as well as in determining the degree of this impact.

If energy crops are grown in degraded soil, fallow lands, wood-felling sites, in very poor soil, in rather infertile grassland, and if the mineralisation of the soil is lead to a minimum value, growing of energy crops may have a potentially positive impact on biodiversity in ecosystems through regeneration thereof or maintaining the functions of natural environment.

In the case where highly energetic fodder or food species are replaced by other monocultures, this will have an insignificant direct impact on biodiversity; however, if biomass production for energy generation considerably changes the objectives of land use, it may cause a negative impact on biodiversity.

Changes in land use related to growing of energy cereals may affect carbon dioxide emissions. If land for growing energy crops is located on plots with degraded soil, carbon sequestration may increase, which may lead to incomplete prevention of climate changes.

Growing of agricultural crops, especially first-generation traditional annuals, may negatively affect water resources. Such agricultural crops as corn, reed canary grass and *Galega Orientalis* are distinguished by their high consumption of water and relatively inefficient water utilisation.

Increase in alternative production of energy and biofuel based on traditional annual crops may lead to enhanced soil erosion, reduction of nutrients and biodiversity in the soil due to the need for more elaborate cultivation of soil. For instance, wheat, rape and corn require more elaborate cultivation of soil than switch grass, millet or reed canary grass. However, if non-usable degraded soil is used for growing agricultural energy crops, it may significantly reduce the level of erosion, and this is due to the increased coverage of soil, especially in plots used for perennial agriculture crops. For example, perennial grasses and Jerusalem artichokes may stabilise the soil and maintain its moisture while growing.

³² Study "Application of Sustainability Criteria for Use of Biomass and Development of Measures" (2009) — available on the website of the Latvian Environmental Protection Fund Administration: http://lvafa.gov.lv/faili/petijumi/Biomasas_izmantosana.pdf
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Another potential benefit from growing energy crops on degraded or rather infertile soils is the reduction of nutrient leaching from the soil, significantly increasing the fertility and carbon content of the soil.

A potential problem closely related to the growing of energy crops and production of raw materials concerns the introduction of potentially invasive species in Latvia. Some species that are potentially prospective for the production of biofuel in the future possess some traits characteristic to invasive species. These traits include fast development, highly efficient use of water and highly productive perennality. It raises the concern that, when introduced, such agricultural crops may become invasive, supersede the local species and lead to the reduction of biodiversity. In some countries, such potentially highly productive species used for the production of bioenergy as *Miscanthus* and switch grass (*Panicum virgatum*) are considered invasive.³³

³³ Study “Application of Sustainability Criteria for Use of Biomass and Development of Measures” EMZino_150212_atjaun; Information Report: “The Regular Report of the Republic of Latvia pursuant to Article 22 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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”

10. Net GHG emission saving due to the use of renewable energy

Article 22(1) k) of Directive 2009/28/EC stipulates that the report on progress in promotion and use of energy from renewable energy sources submitted to the EC shall include details on the estimated net greenhouse gas (hereinafter — GHG) emission saving due to the use of energy from renewable energy sources.

Provisions for calculating the GHG impact caused by biofuels, bioliquids and their comparators are stated in Article 22(2) of Directive 2009/28/EC. Wheat ethanol and rapeseed biodiesel are used as biofuels in Latvia. In 2009, bioethanol accounted for 108 TJ of the final consumption of energy in transport, whereas biodiesel accounted for 65 TJ. In 2010, the amount of bioethanol was 350 TJ, whereas the amount of biodiesel was 787 TJ. GHG emissions savings due to the use of biofuels in transport in 2009 were 5347.278 t CO₂ eq., whereas in 2010 the amount of savings was 34302.692 t CO₂ eq.

Directive 2009/28/EC does not provide methodology for calculating GHG emission savings for other types of renewable energy sources. The template for Member State progress reports pursuant to Directive 2009/28/EC states that in calculating the net GHG emission savings due to the use of energy generated from renewable energy sources, for electricity and heat it is suggested to use EU-wide fossil fuel comparators, as stipulated in the EC report to the Council and the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling, if no later estimates are available. Latvian institutions do not have the information on technological characteristics necessary for calculating the GHG emission savings in the generation of heating, cooling and electricity from solid and gaseous biomass in accordance with the methodology for calculating GHG emissions as presented in this report.

In line with the same approach as in the emissions trading system, it is assumed that GHG emission factor for solid and gaseous biomass in energy (both electricity and heat) generation is “0”.

Latvian institutions assume that the GHG emission factor for energy generation from solar collectors, solar power plants and hydropower plants is “0”, because operation of these technologies does not require the production, processing and transport of energy sources. With regard to GHG emission savings in energy generation from heat pumps, the amount of electricity (not accounted for separately) used for maintaining the operation of heat pumps shall be taken into account.

CO₂ emission factor for gross electricity consumption in 2010 for electricity generated and purchased in Latvia:

- In 2010, CO₂ emission factor for gross electricity consumption with cogeneration correction³⁴ (t CO₂/ MWh) — 0.094;
- In 2010, CO₂ emission factor for gross electricity consumption from fossil fuels with cogeneration correction³¹ (t CO₂/ MWh) — 0.235 (used for calculating GHG emission savings due to the use of renewable electricity).

In calculating GHG emission savings due to the use of renewable energy sources in heating and cooling, a fossil fuel comparator 87 g CO₂/ MJ is used, as stated in the EC report to the Council and to the European Parliament on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling.

Table 6

Estimated GHG emission savings from the use of renewable energy (t CO₂ eq.)

Environmental aspects	2009	2010
<i>Total estimated net GHG emission saving from using renewable energy</i> ³⁵	5,047,388	4,989,773
- Estimated net GHG saving from the use of renewable electricity	691,682	720,626
- Estimated net GHG saving from the use of renewable energy in heating and cooling	4,329,990	4,214,280
- Estimated net GHG saving from the use of renewable energy in transport	25,716	54,867

³⁴ Cogeneration correction means that the calculation does not consider the share of fuel consumption in cogeneration stations, which is partially used for heating generation.

³⁵ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

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11. Indicative trajectory

Table 7

Actual excess/deficit production of RE compared to the indicative trajectory³⁶
(ktoe)

	2009	2010
Heating and cooling	151	138
Electricity	0	10
Transport	-23	-7
Total final consumption RE	123	136

Source: MoE

Total final consumption of RE exceeds the amount expected in the Action Plan, whereas the share of RE in the transport sector is under the expected value. Compared to 2009, in 2010 this gap decreased. It is envisaged that also in the future the use of RE will be approximately the same as expected in the Action Plan.

Special attention shall be paid to measures of energy efficiency in order to ensure that the share of RE in the total gross final energy consumption does not decrease.

11.1. Statistical transfers, joint projects and joint support schemes

In 2009 and 2010, Latvia did not cooperate or plan to cooperate with EU Member States and third countries in joint projects related to generation of electricity, heating and cooling energy from renewable energy sources. During this period, Latvia did not make any decisions on consolidation or partial coordination of state support schemes. Latvia has not agreed with other EU Member States on delivery or receipt of a particular amount of energy generated from RES.

³⁶ Excess production is indicated as positive values, whereas deficit production — as negative.

EMZino_150212_atjaun; Information Report: “The Regular Report of the Republic of Latvia pursuant to Article 22 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 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”

12. Share of biodegradable waste in generation of renewable energy

With Cabinet Order No. 371 of 14 June 2007, the “Project for Development Programme of Biogas Production and Utilisation 2007–2011” has been approved. As part of the Project, the Latvian Environment, Geology and Meteorology Centre prepares annual reports on degradable waste and materials. The last report published was on the year 2009.

Biodegradable wastes and by-products (materials) are one of the most prospective raw materials for biogas production. During the degradation process, biogas is released and it can be used as fuel for energy production.

In accordance with the programme for biogas production, biogas in Latvia can be produced from:

1. waste and by-products of agricultural production;
2. certain waste generated in industrial production processes (especially food manufacturing);
3. biodegradable municipal waste;
4. sludge released as a result of municipal sewage treatment.

In order to provide a complete compilation of the necessary data, several sources of reference shall be used:

1. Latvian Environment, Geology and Meteorology Centre, Database “No. 3 — Waste”, where the data from the state statistical report “No. 3 — Report on Waste” have been compiled;
2. Latvian Environment, Geology and Meteorology Centre, Database “No. 2 — Water”, where the data on sludge released as a result of sewage treatment have been compiled;
3. Data compiled by Latvian CSB on the survey regarding the waste produced in agricultural sector “1 — Waste (Agriculture)”; survey is being conducted every 2 years, the last one — on the year 2010.

The data on agricultural waste and by-products are partially included also in the state statistical report “No. 3 — Report on Waste”, because, pursuant to laws and regulations regulating waste management (Section 3(3) of the “Waste Management Law”), dung manure produced or used in agriculture is not classified as waste. Therefore, survey of dung manure shall be based on other sources of reference, not only databases on waste.

In 2006, the CSB started a survey and compilation of data from agricultural enterprises on the waste produced as a result of their economic activities (Report “1 — Waste (Agriculture)”), and it is conducted every two years. This survey also includes data on dung manure and by-products from crop farming. The report is based on the survey of agricultural enterprises (super-size farms and larger farms), and the findings are statistically generalised on the state level. The data have been obtained through calculations by utilising recalculation coefficients (factors) from volume to mass units. This may be

sufficiently useful to assess the amount of raw materials (dung manure, by-products of crop farming) available for biogas production.

Among waste created in industrial production processes, the most significant sources of raw materials for biotechnological processing are by-products of food production processes as well as sludge released as a result of treatment of municipal and manufacturing sewage. Data on food production waste generated by Category A and B enterprises are available in the state statistical report “No. 3 — Report on Waste”. The report does not include small food production enterprises. Data on sewage sludge from treatment of municipal sewage are available in the state statistical report “No. 2 — Report on Utilisation of Water Resources”.

The amount of wood waste accounted in the state statistical report “No. 3 — Report on Waste” for 2009 is 70,407 t (mainly sawdust). The majority of this type of waste is used as fuel in local boiler houses. However, the actual amount of wood by-products used in Latvia is much larger, because not all wood by-products are recorded.

In order to determine and assess the amount of biodegradable municipal (including household) waste, the data from the state statistical report “No. 3 — Report on Waste” have been used, combining the compiled data on the amounts of waste of Group 20 of the Waste Classification — “Household waste and similar commercial, industrial and institutional wastes, including separately collected types of waste from direct waste producers”.

It is difficult to assess the amount of biodegradable waste in unsorted municipal waste. In accordance with the justification provided by the report “Proposals for Strategy on Management of Biodegradable Waste pursuant to the Council Directive 1999/31/EC on the Landfill Waste and Requirements of Cabinet Regulation No. 15 of 3 January 2002” of the Waste Management Association of Latvia (LASA, Riga, 2004), biodegradable waste accounts for 57% of the amount of household and similar municipal waste. Since no other similar studies on the content of municipal waste in Latvia have been conducted recently, the amount of organic waste that theoretically could be used for biogas production can be determined by applying this proportion to unsorted municipal waste. The actual amount of waste used for this purpose will be significantly smaller, because biogas production from unsorted waste without additional sorting and treatment of waste would be inefficient and unprofitable.

13. Measures pursuant to Article 22(3) of Directive 2009/28/EC

In the near future, Latvia does not plan to establish a separate administrative institution responsible for processing applications on issuing permits, certification and licensing of production facilities utilising renewable energy sources, and providing assistance to applicants. Establishment of such an institution would significantly increase the administrative burden. Possible benefits from establishing such a specific administrative institution would not be comparable to the amount of resources necessary for this purpose. In the same time, as from 1 January 2012, electricity producers whose operations shall be regulated pursuant to the “Law on Regulators of Public Utilities” are entitled to commence electricity generation if the producer is registered in the register of electricity producers and the registration is simplified compared to the former licensing procedures, because registration of an electricity producer does not require the regulator’s decision.

Latvia also does not intend to ensure automatic approval of applications on planning and permits for production facilities utilising renewable energy sources if the institution issuing permits has not replied within the specified time limit. The MoE has not received any complaints on not having replied within the time limits specified by the law. Applications for permits have been reviewed in a timely manner.

Latvia does not intend to specify geographical locations suitable for utilisation of energy from renewable sources when planning the land use and establishment of district heating and cooling.

Information on agricultural land is available in the Rural Support Service. This information may be useful when evaluating the options for energy generation from biomass. The Field Register is a geographic information system (GIS) wherein the information on agricultural land is compiled in field blocks.

Conclusions

RES traditionally account for a significant part in the balance of Latvian primary energy sources. The main types of RES utilised are solid biomass, mainly wood, and hydropower, as well as, to a lesser extent, wind power, biogas and straw. The potential of these resources has not been completely utilised yet.

Heating and cooling, including district heating, account for the largest share in the gross final energy consumption in Latvia. The heat power sector provides the best opportunities for utilising local renewable resources most effectively. The most popular renewable energy sources used in all types of heat supply — district, local, and individual heating — are wood-fuel and its products.

In accordance with Directive 2009/28/EC, Latvia's overall target is to increase the share of energy generated from RES in the gross total final energy consumption up to 40% in 2020. The amount of energy generated from RES in 2009 was 1454 ktoe, whereas in 2010 it was 1456 ktoe. However, compared to 2009, in 2010 the share of energy generated from RES in the gross final consumption of energy decreased and reached only 32.5%. It can be explained by the actual increase in net consumption of energy.

In order to meet the objective stated in Directive 2009/28/EC, Latvia has to pay more attention not only to increasing the energy production from RES but also to the energy efficiency measures.

Increasing the efficiency of use of energy sources and energy in the production, transportation and consumption stages is one of the main objectives of Latvian policy for development and energy. Enhanced energy efficiency will provide a positive impact on security of energy supply, reduction of climate changes and competitive ability of national economy.

In the Action Plan, the gross final consumption of energy was forecast by means of an econometric model with the following output data: theoretically calculated coefficients and separate macroeconomic indices, specifying observable changes in Latvian GDP, elasticity coefficients, changes in prices of energy and fuels, as well as changes in energy intensity as the most important ones. In addition, the trends affected by Latvia's economic downturn have been taken into account. The dynamics of the forecast gross final consumption of energy is closely linked with dynamics of the national GDP; therefore, further forecasts of the planned gross final consumption of energy will be corrected on the basis of actual GDP data and updated forecasts of national GDP.

Evaluating the progress of RES utilisation in energy generation, it is expected that RE utilisation in Latvia in the future will be rather similar to the values planned in the indicative trajectory included in the Action Plan, and the objective set by Directive 2009/28/EC will be reached in 2020.

Units of measurement

J — joule
W — watt
kWh — kilowatt-hour
toe — tonne of oil equivalent
V — volt
m³ — cubic metre
l — litre
kg — kilogram (10³ grams)
t — tonne
ha — hectare

Decimal prefixes

k — kilo (10³)
M — mega (10⁶)
G — giga (10⁹)
T — tera (10¹²)
P — peta (10¹⁵)

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