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Introduction

Pursuant to Article 3(3) of 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 Member States shall publish, for the first time not later than 27 October 2003 and thereafter every two years, a report which includes an analysis of success in meeting the national indicative targets taking account, in particular, of climatic factors likely to affect the achievement of those targets and which indicates to what extent the measures taken are consistent with the national climate change commitment.

In accordance with Latvia's mid-term energy policy planning documents currently in force (Energy Development Guidelines for 2007-2016, Guidelines for the Use of Renewable Energy Sources, 2006-2013 and the Development Programme for the Production and Use of Biogas for 2007-2011), an increase in the proportion of renewable energy sources (hereinafter "RES") in the overall energy balance sheet is related to the following key objectives:

1. To increase the proportion of RES in Latvia's overall energy balance sheet;
2. To foster the safety of Latvia's energy supply;
3. In the long-term to ensure RES investments in reducing greenhouse gas emissions (hereinafter "GHG emissions").

1. Legislation

In Latvia, the use of RES in the production of electricity is regulated by the Energy Law, the Electricity Market Law and Cabinet Regulations issued pursuant to these Laws: Cabinet Regulation No 262 of 16 March 2010 "Regulations on the production of electricity from renewable energy sources, and the procedures for determining prices" (hereinafter "Regulation No 262") and Cabinet Regulation No 221 of 10 March 2009 "Regulations on the production of electricity and determining prices when producing electricity from cogeneration" (hereinafter "Regulation No 221), as well as the Law on Regulators of Public Utilities, and Cabinet Regulations issued pursuant to this Law.

General legislative acts regulating economic activities and transactions, such as the Commercial Law, the Civil Law and the Labour Law, as well as legislation regulating environmental protection and construction, also apply to the production of electricity from RES.

1.1. The Electricity Market Law

The Electricity Market Law contains legislative provisions arising from the following European Union (EU) Directives:

1) 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");

2) 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;

3) Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC (hereinafter "Directive 2004/8/EC);

4) Directive 2005/89/EC of the European Parliament and of the Council of 18 January 2006 concerning measures to safeguard security of electricity supply and infrastructure investment;

5) Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC;

6) 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").

The Electricity Market Law was adopted on 5 May 2005. Under Article 29(2) of the Electricity Market Law a certain proportion of the total consumption of electricity by all end users in Latvia shall be covered by electricity that is produced from RES. Pursuant to Directive 2001/77/EC the percentage share of electricity produced from RES against gross electricity consumption in Latvia shall be 49.3% by 2010. Latvia's national indicative target that must be reached by 31 December 2010 is set out in the Energy Development Guidelines for 2007-2016, and also specified in the Electricity Market Law. In 2010, the percentage share of electricity produced from RES against gross national electricity consumption was 48.5%, which is 0.8% below the figure laid down in Directive 2001/77/EC.

Under Part A of Annex I to Directive 2009/28/EC Latvia's national overall target is to increase the share of energy produced from RES in gross final consumption of energy from 32.6% in 2005 to 40% in 2020. In order to achieve this target Latvia must develop and regularly assess national policies for increasing the share of energy produced from RES in gross final consumption of energy.

Pursuant to Article 29(2), (4) and (5), and Article 29^1(1) and (5) of the Electricity Market Law, and in respect of the production of electricity from RES, the Cabinet shall define the qualification criteria to enable producers to acquire the right to sell produced electricity through compulsory procurement, and the criteria by which producers who produce electricity in power plants with an installed capacity higher than 1 MW, using biomass or biogas, may acquire the right to receive guaranteed payment for the electricity installed capacity in the power plant.

Under Article 28(2) and (7), and Article 28^1(2) and (5) of the Electricity Market Law, and in respect of electricity produced from cogeneration, the Cabinet shall define the criteria by which cogeneration plants qualify to acquire the right to sell produced electricity through compulsory procurement or to receive guaranteed payment for the electricity installed capacity at a cogeneration plant.

1.1.1. Cabinet Regulation No 262 of 16 March 2010 "Regulations on the production of electricity from renewable energy sources, and the procedures for determining prices"

Cabinet Regulation No 262 has been issued in accordance with Article 29(2), (4) and (5), and Article 29^1(2) and (5) of the Electricity Market Law, and defines the conditions for acquiring the right to sell electricity produced from RES through compulsory procurement.[1]

Cabinet Regulation No 262 contains legal provisions arising from Directive 2001/77/EC.

Cabinet Regulation No 262 lays down the following:

- The conditions for producing electricity from RES;
- The criteria by which producers who produce electricity from RES, may acquire the right to sell produced electricity through compulsory procurement of the volume of electricity;

[1] Cabinet Regulation No 262 replaces Cabinet Regulation No 198 of 24 February 2009 "Regulations on the production of electricity from renewable energy sources, and the procedures for determining prices"
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

- The criteria by which producers who produce electricity in power plants with an installed capacity higher than 1 MW, using biomass or biogas, may acquire the right to receive guaranteed payment for the electricity installed capacity at the power plant;
- The procedures for determining, implementing and monitoring the compulsory procurement of the volume of electricity produced from RES;
- The proportion of the total consumption by electricity end users in Latvia which must be covered by the electricity produced from RES, determining it for each type of RES;
- The procedures for determining the price for electricity produced from RES, depending on the type of RES;
- The procedures for waiving the right to sell produced electricity through compulsory procurement;
- The procedures for receiving a certification of origin for electricity produced from RES;
- The measures to promote the production of electricity from biomass;
- The authorised bodies that issue certifications of origin for electricity produced from RES;
- The procedures for determining guaranteed payment for the electricity installed capacity at a power plant, and the procedures for the monitoring and payment thereof and the amount of payment;
- The procedures by which an economic operator may waive his right to receive guaranteed payment for the electricity installed capacity at a power plant.

1.1.2 Cabinet Regulation No 221 of 10 March 2009 "Regulations on the production of electricity and determining prices when producing electricity from cogeneration"

Cabinet Regulation No 221 has been issued in accordance with Article 28(2) and (7), and Article 28^1(2) and (5) of the Electricity Market Law, and is currently in force and regulates the compulsory procurement, for a fixed price, of electricity produced from cogeneration, as well as the right to receive guaranteed payment for the electricity installed capacity at a cogeneration plant.[2]

Cabinet Regulation No 221 contains legal provisions arising from Directive 2004/8/EC.

As from 1 November 2010 only those economic operators who use or plan to use RES for the production of electricity may apply for the right to sell electricity produced from cogeneration through compulsory procurement or to receive guaranteed payment for the electricity installed capacity at a cogeneration plant in accordance with Cabinet Regulation No 221 of 10 March 2009 "Regulations on the production of electricity and determining prices when producing electricity from cogeneration" (hereinafter – Cabinet Regulation No 221).

1.2. The Law on Regulators of Public Utilities

The Law on Regulators of Public Utilities provides that the State regulates the provision of public utilities as economic activities in the energy sector.

Cabinet Regulation No 1227 "Regulations on regulated types of public services" was adopted on 27 October 2009 on the basis of the Law on Regulators of Public Utilities, and provides, *inter alia*, that in the area of electricity supply it is necessary to regulate the

[2] Cabinet Regulation No 221 replaces Cabinet Regulation No 921 of 6 November 2006 "Regulations on producing electricity from cogeneration"
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

production of electricity in power plants with an electricity installed capacity higher than 1 MW.

1.3. Draft legislation

Several important items of draft legislation have been drawn up in 2009 and 2010 with the aim of promoting the use of RES both in the production and use of electricity, as well as in the supply of heat.

In 2009, the Ministry of Economics, taking into account the provisions of the climate-energy legislative package set out in Directive 2009/28/EC, which includes legally binding objectives, began work on its implementation. Cabinet Regulation 545 of 5 July 2011 "Regulations on the sustainability criteria for bio-fuels and organic liquid fuels, the mechanisms for their implementation, as well as monitoring and control procedures" entered into force on 20 July 2011. Amendments to the Electricity Market Law entered into force on 11 August 2011. The first reading of the draft Law "Renewable Energy Law" was considered by the Saeima on 9 June 2011, and the draft Law "Amendments to the Energy Law" was adopted by the Saeima on 22 September 2011 at the third reading, and entered into force on 26 October 2011.

The draft Law "Renewable Energy Law" has been drawn up after evaluating the need to support the production of energy from renewable energy sources, by promoting their use as provided for in Directive 2009/28/EC, and taking into account the Memorandum of Understanding on the Baltic Energy Market Interconnection Plan (BEMIP) signed by the governments of the Baltic Region on 17 June 2009, including the heads of government of all three Baltic States, and approved by the European Commission, and it is based on common principles for the electricity market throughout the Baltic region.

Latvia's mid-term energy policy planning documents and legislation set out the objectives for electricity produced from RES against gross national electricity consumption, however, a unified strategy needs to be developed in Latvia, in order to meet the requirements and achieve the targets set out in Directive 2009/28/EC. In 2011 work has begun on developing the long-term energy sector development planning document for 2030, and during the development process consideration is being given to the possibility of increasing the proportion of electricity produced from renewable energy sources against gross national electricity consumption.

2. Policy results, operational results and resultative indicators for achieving them

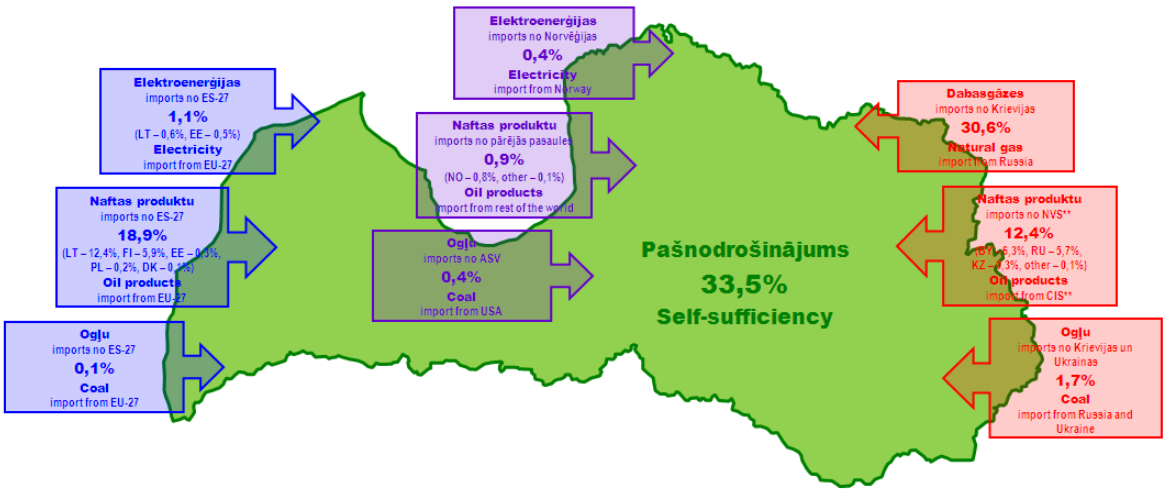
At present RES hold an important position in Latvia's primary energy sources balance sheet. The main RES that are used widely are timber and hydro sources, whilst wind generated power, straw, biogas and solar energy are used to a lesser extent.

2.1. Self-sufficiency

One of the specific indicators of the sector is self-sufficiency using primary sources, and at present three types of energy sources dominate the supply of Latvia's primary sources, each of which are approximately equal: they are oil products (mainly petrol and diesel), natural gas and timber. Total final consumption of energy in Latvia is provided by local energy sources and the flow of primary sources from Russia, the CIS countries, as well as the Baltic, EU and other states. As is the case in many other Member States, Latvia is dependent on the import of primary sources. Given the fall in economic activity in Latvia, there has been a reduction in consumption in 2008 and 2009.

The Energy Development Guidelines for 2007-2016 state that self-sufficiency must be at a level of at least 36-37% in the structure of the use of primary energy sources. The division of the flow of resources for 2010 shows a relatively high dependence by Latvia on imported supplies: 33.5% (see figure 1) of total consumption is provided by local sources, which is 5.2 percentage points higher when compared to 2008. In previous years, the low level of self-sufficiency against the figures planned was related to changes in the calculation method, under which the coefficients for firewood, timber residue and wood chips, which are used for recalculating types of wood fuel into terajoules. A time row recalculation of wood fuel was also carried out according to these coefficients. As a result the self-sufficiency in the consumption of Latvia's primary energy sources must be maintained in the structure of the use of primary energy source according to the recalculation, that is to say at a level of 32.7% - 33.6%, and this was achieved in 2009. The level of self-sufficiency in 2010 was 33.5%.

In 2010 Latvia's total consumption of primary energy sources was 200.5 PJ, which is 28% higher when compared to the total consumption of primary energy sources in 2000, but has not exceeded the level of consumption of 204.6 PJ reached in 2007.



** Commonwealth of Independent States

Figure 1. Division of the flow of primary energy sources in 2010.[3]

Traditionally, the proportion of renewable energy in Latvia's total gross final consumption has been important, reaching 29.6% in 2007, 29.8% in 2008, 34.3% in 2009 and 32.5% in 2010 of total gross final consumption according the calculation method laid down in Directive 2009/28/EC. A rapid fall in final consumption of energy does not ensure an equal increase in the proportion of renewable energy in total gross final consumption, thereby also having an impact on the percentage share of gross national energy consumption.

Table 1 below shows information on the volumes of wood fuel production and consumption for the period from 2008 to 2010. It can be seen that there has been a rise in the volumes of wood fuel production and consumption transformation sector and in final consumption, which includes the volumes of all types of wood fuel. The greatest increase in wood fuel can be found in industry.

Table 1

Wood fuel (1000 m^3)[4]

	Production of wood fuel			**Consumption of wood fuel in the transformation sector and final consumption**		
	2008	2009	2010	2008	2009	2010
Total of which:	8307	9708	955	6621	7563	7329
firewood	5413	6226	5868	4880	5426	5073
timber residue	989	1206	1106	915	1147	1169
fuel woodchips	1324	1478	1631	784	954	1011
wood pulp briquettes	41	46	66	20	17	31
wood granules	540	751	880	23	19	45

[3] The division of the flow of primary energy sources between regions has been calculated using the Eurostat (External trade) database.

[4] Central Statistical Bureau
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

Given the economic crisis and its consequences, the Latvian electricity transmission system operator AS "Augstsprieguma t•kls" (hereinafter "transmission system operator") has corrected the electricity consumption and load forecasts when preparing the annual assessment report for 2010, when compared to previous years' reports that have been drawn up in accordance with Cabinet Regulation No 322 of 25 April 2006 "Regulations on the transmission system operator's annual assessment report" (see figures 2 and 3). Earlier electricity consumption forecasts (specifically 2010) were based on the assumption that the increase in gross domestic product (GDP) in the mid-term will be within 8%, but in the long-term (2030) the increase will be 5%.[5] At present GDP has fallen noticeably and a rapid increase is not anticipated in the foreseeable future. Without a doubt, Latvia's industry does not have any significant levels of energy consumption, and therefore, the commencement of a relatively large and capacious undertaking, in terms of energy consumption, may affect demand.

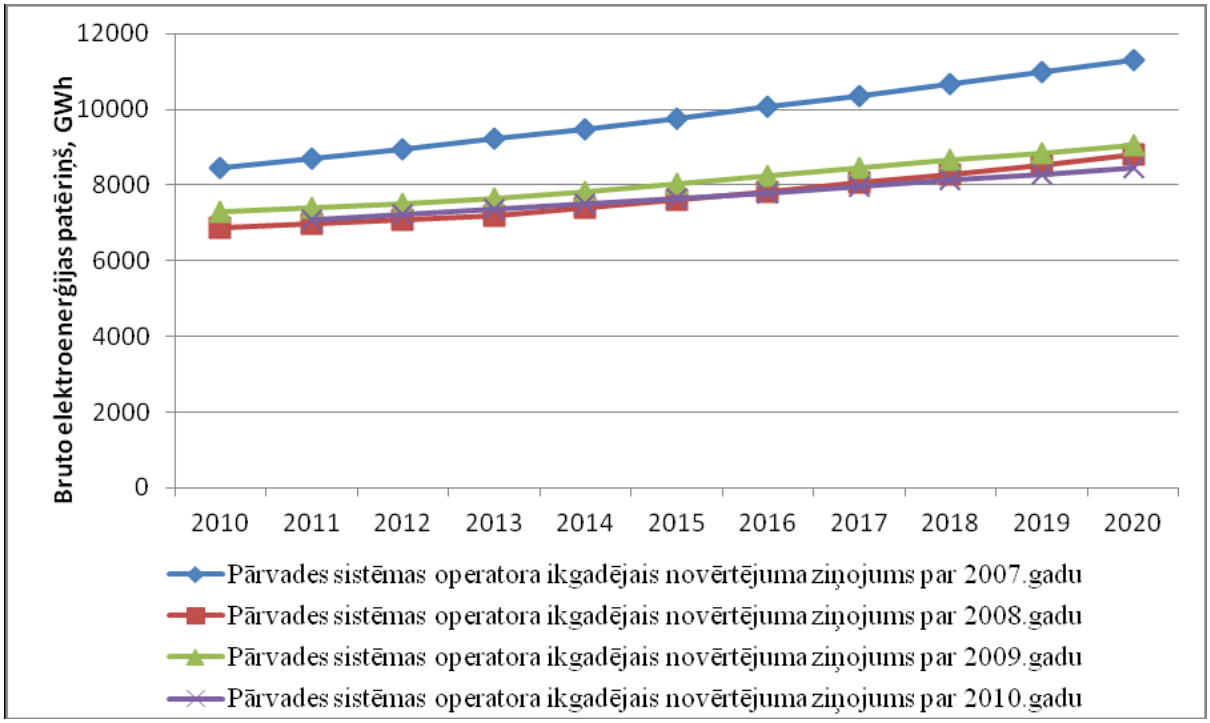


Figure 2. Gross electricity consumption forecast, GWh[6]

Latvian	**English**
Bruto elektroener•ijas pat•ri•š, GWh	Gross electricity consumption, GWh
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2007. gadu	Transmission system operator's annual assessment report for 2007
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2008. gadu	Transmission system operator's annual assessment report for 2008
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2009. gadu	Transmission system operator's annual assessment report for 2009
P•rvades sist•mas operatora ikgad•ais nov•rt•uma	Transmission system operator's annual assessment

[5] The transmission system operator's AS "Augstsprieguma t•kls" annual assessment report for 2008 http://www.latvenergo.lv/pls/portal/docs/PAGE/CORPORATEPAGES/AST/LATVIAN/FILES/CITI/PSO_zinojums_2008.pdf

[6] The transmission system operator's AS "Augstsprieguma t•kls" annual assessment report for 2007, 2008, 2009 and 2010 http://www.em.gov.lv/em/2nd/?cat=30175
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

zi•ojums par 2010. gadu	report for 2010

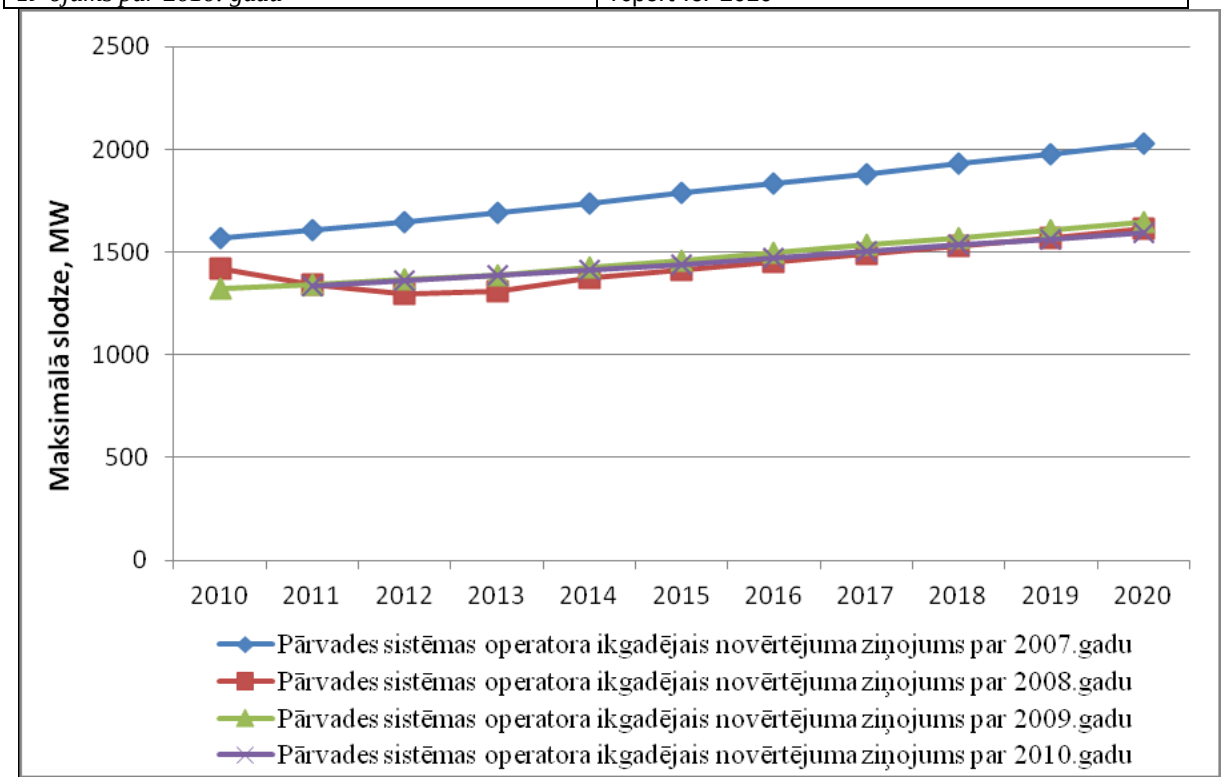


Figure 3. Maximum load forecast, MW[7]

Latvian	**English**
Maksim•l• slodze, MW	Maximum load, MW
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2007. gadu	Transmission system operator's annual assessment report for 2007
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2008. gadu	Transmission system operator's annual assessment report for 2008
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2009. gadu	Transmission system operator's annual assessment report for 2009
P•rvades sist•mas operatora ikgad•ais nov•rt•uma zi•ojums par 2010. gadu	Transmission system operator's annual assessment report for 2010

2.2. Quality of energy and the environment

The opportunities for national economic development and competiveness are also defined by the condition of the energy supply system, its operational efficiency and the safety of supply. There is very close interaction between the quality of the economy, energy and the environment, as illustrated by Latvia's developmental trends over the last 20 years (see figure 4).

Figure 4. Interaction between the quality indicators of energy, the economy and the environment*[8]

[7] The transmission system operator's AS "Augstsprieguma t•kls" annual assessment report for 2007, 2008, 2009 and 2010 http://www.em.gov.lv/em/2nd/?cat=30175

* The reference point is 2000, where the relative value of all the indicators shown is 1

[8] Source: Ministry of Economics
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

Latvian	**English**
IKP 2000. gada salidz•n•m•s cen•s	GDP in 2000 comparative prices
Bruto nacion•lais elektroener•ijas pat•ri•š	Gross national electricity consumption
Kop•jais prim•ro energoresursu pat•ri•š	Total consumption of primary energy sources
SEG emisijas (bez zemes izmantošanas un mežsaimniec•bas)	GHG emissions (without land use and forestries)

Changes in GDP, primary source consumption, electricity consumption and GDG emissions shown by year indicate close interaction between three important dimensions – the economy, energy and the environment. The GHG emissions shown in figure 4 are provided according to the latest GHG inventory, i.e. up to 2009 inclusive.

Climate change reduction measures that are to be undertaken in the energy sector are now being included in policy planning documents for the energy sector and in legislation, and will maintain an important role in the future. Latvia complies with the emission reduction obligations set out in the Kyoto protocol, yet new measures need to be implemented given Latvia's emission reduction obligations until 2020 as set out in the climate-energy legislative package.

2.3. Electricity produced from renewable energy sources

The RES segment of the electricity consumption structure is made up of small hydroelectric power plants, wind power plants, biogas power plants and biomass power plants, as well as cogeneration plants using RES. Taking into account normalised hydro power and wind energy, the percentage share of energy produced from RES against gross national electricity consumption in 2010 was 42.1%, and of this, the largest share (almost 94%) was produced by large hydroelectric power plants, but the remaining share was produced by small hydroelectric power plants, wind power plants, biogas power plants, biomass power plants and cogeneration plants using RES.

In terms of Latvia's gross electricity consumption in 2010, when compared to 2009, the percentage share of cogeneration plants using AER has increased by 0.2 percentage points from 0.6% to 0.8%, whilst wind power plants have remained the same, i.e. 0.7% (see table 2).

Table 2

Energy produced from RES as a percentage share of Latvia's gross electricity consumption (%)[9]

	2005	2006	2007	2008	2009	2010
Percentage share of electricity produced from AER (2010 target – 49.3%)	48.4	37.3	36.4	41.2	49.2	48.5
Large hydroelectric power plants	46.3	35.9	34.3	39.0	46.9	45.9
Cogeneration plants using RES	0.6	0.6	0.5	0.5	0.6	0.8
Small hydroelectric power plants	0.9	0.5	0.9	0.9	0.9	1.0
Wind power plants	0.7	0.6	0.7	0.8	0.7	0.7

The total volume of electricity produced from RES in 2009 was 3555 GWh, whilst in 2010 the volume was 3535 GWh. Table 3 shows a more detailed breakdown of electricity produced from RES by type for 2010, whilst table 4 shows the increase in electricity capacity in Latvia for 2009 and 2010.

[9] Source: Ministry of Economics
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

Table 3

Electricity produced from renewable sources, GWh[10]

	2009	2010
Hydroelectric power plants, total	3457	3520
Hydroelectric power plants < 1 MW	60	70
Hydroelectric power plants 1 MW <=electricity capacity <= 10 MW	6	6
Hydroelectric power plants > 10 MW	339	3444
Wind power plants	50	49
Biomass power plants	4	9
Biogas power plants, total	44	57
Landfill gases, other biogas power plants	35	46
Wastewater sludge gas power plants	9	11
Total	3555	3635
% share	49.2	48.5

Table 4

Electricity capacity, MW[11]

	2009	2010
Hydroelectric power plants, total	1536	1576
Hydroelectric power plants < 1 MW	24	25
Hydroelectric power plants 1 MW <=electricity capacity <= 10 MW	1	1
Hydroelectric power plants > 10 MW	1511	1550
Wind power plants	29	30
Biomass power plants	2	5
Biogas power plants, total	8	11
Landfill gases, other biogas power plants	7	10
Wastewater sludge gas power plants	1	1
Total	1583	1633

A total of 16 new wind power plants were installed between 2008 and 2010, as well as nine new biogas power plants and one new biomass power plant. Figure 5 shows the volume of electricity purchased in 2009 by Latvia's public trader AS "Latvenergo" through compulsory procurement.

[10] Central Statistical Bureau

[11] Central Statistical Bureau

EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

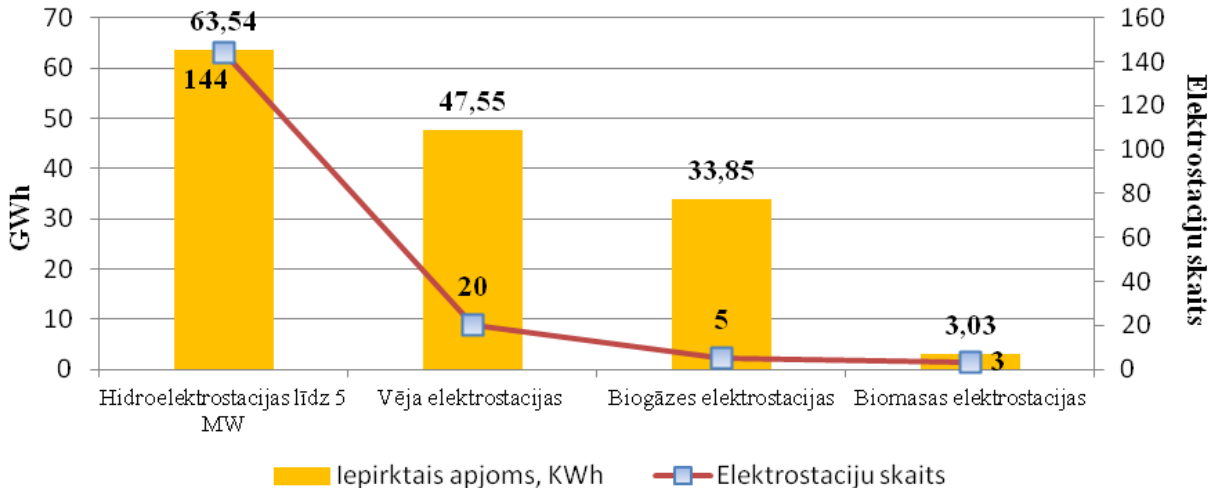


Figure 5. Volume of electricity produced from RES and sold to the public trader in 2009, GWh

Latvian	English
Hidroelektrostacijas l•dz 5 MW	Hydroelectric power plants up to 5 MW
V•ja elektrostacijas	Wind power plants
Biog•zes elektrostacijas	Biogas power plants
Biomasas elektrostacijas	Biomass power plants
Elektrostaciju skaits	Number of power plants
Iepirktais apjoms, kWh	Volume purchased, kWh

Figure 6 shows the volume of electricity purchased in 2010 by Latvia's public trader AS "Latvenergo" through compulsory procurement.

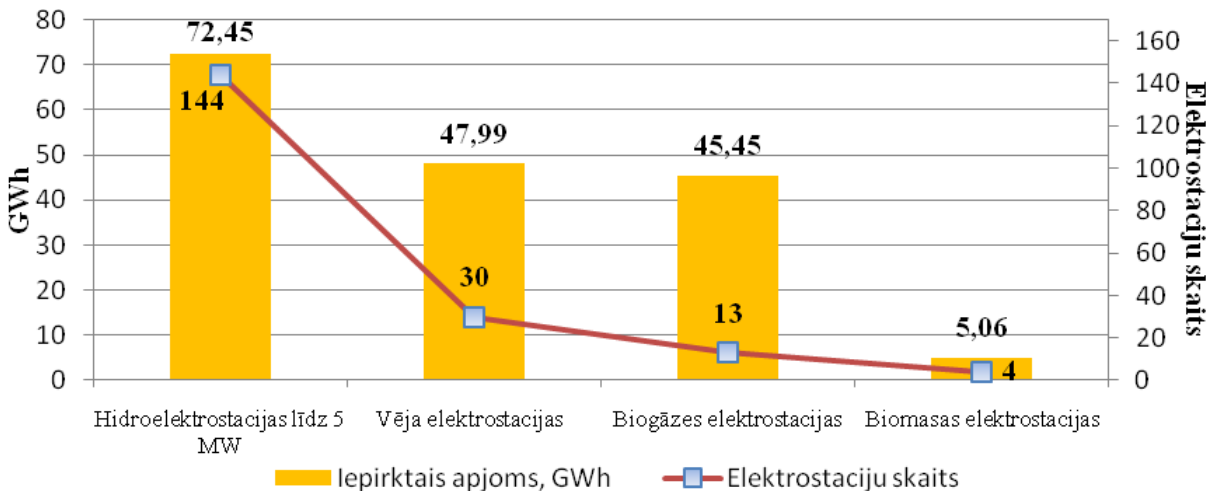


Figure 6. Volume of electricity produced from RES and sold to the public trader in 2010, GWh

Latvian	English
Hidroelektrostacijas l•dz 5 MW	Hydroelectric power plants up to 5 MW
V•ja elektrostacijas	Wind power plants

Biog•zes elektrostacijas	Biogas power plants
Biomasas elektrostacijas	Biomass power plants
Elektrostaciju skaits	Number of power plants
Iepirktais apjoms, kWh	Volume purchased, kWh

After analysing the types of RES according to their potential and possible future contribution, the priority areas of development set out in the Energy Development Guidelines for 2007-2013 in order to achieve the targets specified in the Electricity Market Law in 2010, were defined as support for the efficient use of solid biomass (mainly timber) and biogas, not only in the production of heat, but also in the production of electricity, as well as the use of wind power with an installed capacity of up to 135 MW and the rational development of small hydroelectric power plants.

The table in Annex 1 to Cabinet Regulation No 262 specifies the total share of electricity end-user consumption in Latvia that must be covered using electricity produced from renewable energy sources (see table 7).

Hydro power sources are mainly used in the large AS "Latvenergo" hydroelectric power plants. The majority of energy produced by AS "Latvenergo" comes from Latvia's three largest hydroelectric power plants (HPP). In 2010 an average of 53% of the total volume of electricity produced in Latvia was produced in these power plants. The total capacity of •egums HPP is 240.1 MW, whereas the capacity of P•avi•i HPP is 883.5 MW and the capacity of Riga HPP is 402 MW.

Given that the volume of electricity produced is, to a great extent, dependant on the volume rate of flow in the Daugava river, the share of RES against electricity consumption may vary significantly from year to year. Electricity is produced not only in three large hydroelectric power plants, but also in a large number of small hydroelectric power plants with a smaller installed capacity.

After analysing the statistical data and existing environmental protection restrictions it can be concluded that, in Latvia, it will not be possible to increase the share of electricity produced from RES against gross national electricity consumption at the expense of promoting the use of hydro power.

In 2010 the following volumes of RES have been acquired in Latvia, and they can be used in the production of biogas:

- Perennial pasture hay forage, silage – 2 139.7 thou. t.;
- Corn for silage and forage – 209.0 thou. t.

In 2010, the volume of crops (except for animal feed, seeding material, losses and stocks), which could have been used for the production of energy, was as follows:

- For cereals – 7.7 thou. t.;
- For rape – 1.2 thou. t.

Latvia has increased potential for raw materials used in the production of biogas (see figure 7). Data for 2010 shows that 32.2 million m^3 of livestock manure could have been used to produce biogas, whilst the volume of abattoir residue was calculated as being 2.1 million m^3. The use of biogas in the production of energy will resolve issues relating to the management of biodegradable by-products and products derived from agricultural production, treatment and processing, and reduce the risk of soil, water and air pollution and any possible threat to human health.

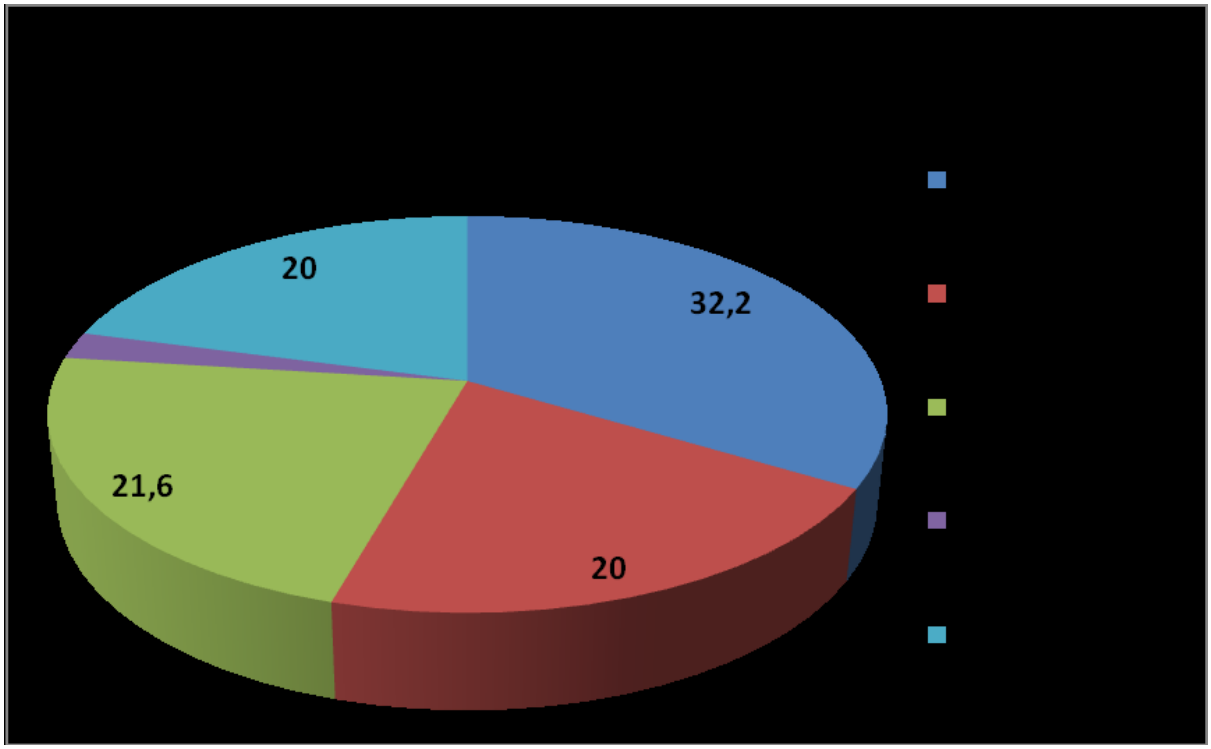


Figure 7. Latvia's potential for raw materials used in the production of biogas, according to 2010 data (million m^3)[12]

Latvian	**English**
Latvijas biog•zes ražošanas izejvielu potenci•ls 2010. gad•	Latvia's potential for raw materials used in the production of biogas, 2010
Liellopu m•sli	Livestock manure
C•ku m•sli	Pig manure
Putnu m•sli	Bird manure
Kautuvju atlikumi	Abattoir residue
Augkop•bas atlikumi un za•masa	Crop farming residue and green mass

Table 5 shows the areas for joint production crops and volume of crops that can be in the production of energy, for the period from 2008 to 2010.

Table 5

Areas for joint production crops, which can be used in the production of energy[13]

	2010		2009		2008	
	thou.ha	thou. t.	thou.ha	thou. t.	thou.ha	thou. t.
Rye	32.2	69.4	59	162.2	59	194.9
Wheat	303	973	285.7	1036.4	256.6	989.6
Triticale	11.4	25	13.8	33.3	13.1	35.2
Rape	109.5	56.7	93.3	204.7	82.6	198.5

As regards possibilities for using wind power, the greatest wind flow can be found in the Western part of Latvia. At the same time, there is a growing trend in interest by investors to develop this form of renewable energy sources. A large number of applications have been

[12] Ministry of Agriculture
[13] Central Statistical Bureau
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

submitted to Latvia's transmission services operator to connect wind power plants to the electricity distribution network in Kurzeme, on the Baltic Sea coast, both inland and at sea (up to 2000 MW).

Implementation of the project to strengthen Latvia's Western region transmission network (Kurzeme arc) began in 2010.

Stage 1: **construction of the Riga 330kW power arc** is due to be implemented by the end of 2012, by putting the Riga TEC1-Imanta cable into operation, which will increase the safety of the Riga power supply when repairs are carried out. The reason for the project is related to the need to strengthen the Riga network, in order to ensure a close link with the development of the Western region (Kurzeme) 330kW arc. Moreover, the safety of transit flows in the direction of the Western region of Lithuania will increase, which means that restrictions on the transmission network will be reduced in this section.

Stage 2: **construction of a 330kW power line** Grobi•a - Ventspils is due to be implemented by the end of 2013.

Stage 3: **construction of a 330kW power line** Ventspils - Dundaga – Tume – Riga is due to be implemented by the end of 2018.

This project will ensure an increase in transit flows with the construction of a 700 MW connection between Sweden and Lithuania. Following the implementation of the Kurzeme arc project, the safety of the electricity supply to consumers in the Kurzeme region and towns will be improved, infrastructure will be in place to cope with the growing load in the Kurzeme region, and there will increased provision for connecting users' new electrical equipment, and this will also allow for connecting new wind power plant capacity inland and at sea, as has been planned for the Kurzeme region. The total length of the new 330kW power cables for the Kurzeme arc will be approximately 340 km, and the anticipated capacity is 800 MW.

From 2004 to 2006 the average volume of electricity, which was produced by wind power plants with an installed capacity higher than 0.25 MW and sold to the public trader AS "Latvenergo", was 47 GWh per year. Figure 8 shows the volume of electricity produced by wind power plants and sold to the public trader.

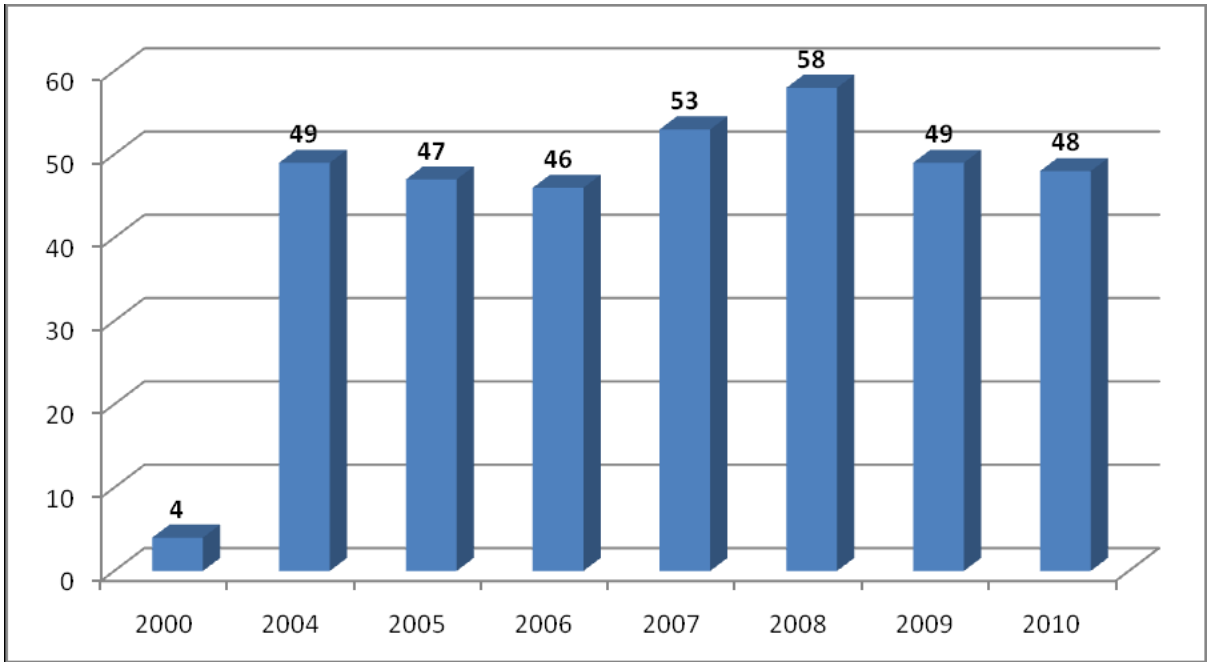


Figure 8. Supply of electricity produced by wind power plants, by year, GWh

3. Aid measures for producing electricity from renewable energy sources

3.1 Implementing compulsory procurement of electricity

In accordance with the Electricity Market Law, as well as Cabinet Regulation No 262 and Cabinet Regulation No 221, aid measures for economic operators who produce electricity from RES, shall be implemented through compulsory procurement.

According to the procedures set out in Cabinet Regulation No 262 and Cabinet Regulation No 221, and taking into account certain conditions, which include reporting on the progress of project implementation, compulsory procurement is organised on the basis of a contract concluded between the public trader and the economic operator, or his authorised representative, in accordance with the decision made by the Ministry of Economics to award the right to compulsory procurement.

In addition, the economic operator is obliged to submit an annual report to the Ministry of Economics by 1 March each year, in respect of the power stations that use RES to produce electricity, indicating the type of energy source used, the volume of electricity produced and the technology used to produce electricity; and the annual report must contain data that is verified by the system operator to whose electricity networks the economic operator's power plant is connected.

When comparing Cabinet Regulation No 262 and No 221, it should be noted that the most significant difference regarding the compulsory procurement of electricity produced from RES concerns the rule on the volume of electricity purchased through compulsory procurement. Cabinet Regulation No 262 specifies the annual scope of aid for compulsory procurement for different types of RES, as from 2010 and for the following 10 years, by expressing this volume as a percentage share of total electricity end-user consumption in Latvia.

However, Cabinet Regulation No 221 does not provide for any quantitative restrictions on the purchase of electricity produced from cogeneration that also makes use of

RES, through compulsory procurement, taking into account the criteria set out in Cabinet Regulation No 221.

In accordance with Cabinet Regulation No 262 the right to compulsory procurement is awarded to biomass, biogas, solar and wind power plants by means of a competitive process, with applications being evaluated against administrative and qualitative assessment criteria. This type of procedure allows for applications to be assessed properly, taking into account the electricity production capacity that is to be installed, the operating regimes at the power plants, the possibilities for using the heat generated at power plants, as well as the raw materials used for obtaining energy sources. Cabinet Regulation 262 sets out the administrative procedures more transparently, and specifies a more transparent decision making process for economic operators.

The subject of the contract is the volume of electricity in respect of which a competition is organised to award selling rights through compulsory procurement. Cabinet Regulation No 262 provides that a competition shall be organised between 1 and 31 October each year.

The Ministry of Economics is not organising any competitions between 26 May 2011 and 1 January 2013 to acquire the right to sell electricity produced at biomass, biogas, solar or wind power plants, through compulsory procurement, and producers cannot qualify to acquire the right to sell electricity through compulsory procurement and to acquire the right to receive guaranteed payment for the electricity installed capacity.

Table 6

Price calculation formula set out in Cabinet Regulation No 262

Type of power plant	**Electricity installed capacity**	**Tariff ***
Wind power plants	• 0.25 MW	For the first 10 years after commencing operation: $C = 147 \times e \times k$;
		For the next 10 years after commencing operation: $C = 147 \times e \times k \times 0.6$;
	> 0.25	For the first 10 years after commencing operation: $C = 120 \times e \times k$;
		For the next 10 years after commencing operation: $C = 120 \times e \times k \times 0.6$;
Biomass power plants	• 4 MW	For the first 10 years after commencing operation: $C = \frac{T_g \times k}{9.3} \times 4.5$
		For the next 10 years after commencing operation: $C = \frac{T_g \times k}{9.3} \times 3.4$
	> 4 MW	For the first 10 years after commencing operation:

		$C = \frac{T_g \text{ x } k}{9.3} \text{ x } 3.6$
		For the next 10 years after commencing operation: $C = \frac{T_g \text{ x } k}{9.3} \text{ x } 3$
Biogas power plants	• 2 MW	For the first 10 years after commencing operation: $C = \frac{T_g \text{ x } k}{9.3} \text{ x } 4.5$
		For the next 10 years after commencing operation $C = \frac{T_g \text{ x } k}{9.3} \text{ x } 3.4$
	< 2 MW	For the first 10 years after commencing operation: $C = 188 \text{ x } e \text{ x } k$
		For the next 10 years after commencing operation $C = 188 \text{ x } e \text{ x } k \text{ x } 0.8$
Hydroelectric power plants	• 5 MW	For the first 10 years after commencing operation: $C = 188 \text{ x } e \text{ x } k \text{ x } 0.8$
		For the next 10 years after commencing operation $C = 159 \text{ x } e \text{ x } k$
Solar power plants	No restriction	20 years from the date on which the power plant is first put into operation: C= 427 x e

In accordance with Cabinet Regulation No 221 compulsory procurement prices are determined by applying a price formula to electricity produced in cogeneration plants using RES:

1) the formula for determining compulsory procurement prices for cogeneration plants using RES, where the installed capacity does not exceed 4 MW, is as follows:

$$C = \frac{T_g \text{ x } k}{9.3} \text{ x } 4.5$$

2) the formula for determining compulsory procurement prices for cogeneration plants using RES, where the installed capacity exceeds 4 MW, includes the procurement prices for electricity produced from cogeneration: energy components, which the trader pays for the volume of electricity produced from cogeneration as specified in Paragraph 29 of Cabinet Regulation No 221, and the capacity components, which the trader pays for electricity installed capacity at the cogeneration plant (LVL/MW per year). The trader pays the capacity

components for the electricity installed capacity at the power plant once a month, by dividing the annual payment into 12 instalments.

* Symbols used in the formulas:

C = price (excluding VAT), for which the public trader buys electricity from power plants that use RES (LVL/MWh);
e = the rate of exchange set by the Bank of Latvia for the LVL against the common currency of the EU, on the date on which the invoice for electricity is drawn up;
k = price differential coefficient, as specified in Annex 9 to Cabinet Regulation No 262;
T_g = the natural gas trade end tariff (excluding VAT) approved by the regulator and specified for natural gas consumption from 126 thou. nm^3 to 1260 thou. nm^3 per year (LVL/thous. nm^3), with the actual calorific value.

Figure 9 shows the scope of aid for compulsory procurement for all types of RES, as provided for in Cabinet Regulation No 262.

Figure 9. Compulsory procurement prices in August 2011 pursuant to Cabinet Regulation No 262 and Cabinet Regulation No 221, santimes/kWh[14]

Latvian	**English**
Cena (sant/kWh) bez PVN	Price (santimes/kWh) excl. VAT
Hidroelektrostacijas l•dz 5 MW	Hydroelectric power plants up to 5 MW
V•ja elektrostacijas	Wind power plants
Biog•zes elektrostacijas	Biogas power plants
Biomasas elektrostacijas	Biomass power plants
Saules elektrostacijas	Solar power plants

The total share of electricity end-user consumption in Latvia that must be covered using electricity produced from RES is set out in Annex 1 to Cabinet Regulation No 262 by year and type of RES (see table 7), in respect of the period up to 31 December 2010 and for subsequent years.

Table 7

Table in Annex 1 to Cabinet Regulation No 262[15]

Type of renewable energy source and power plant	In 2010 and the following 10 years
Hydroelectric power plants with a capacity higher than 5 MW	34.31%
Hydroelectric power plants with a capacity of up to 5 MW	1.98%
Wind power plants with a capacity of up to 0.25 MW	0.27%
Wind power plants with a capacity higher than 0.25 MW	5.1%
Biogas power plants	7.93%
Biomass power plants and power plants where biomass is used together with fossil fuels	4.97%
Solar power plants	0.01%
Total	54.57%

[14] Ministry of Economics
[15] Cabinet Regulation No 262 of 16 March 2010 "Regulations on the production of electricity from renewable energy sources, and the procedures for determining prices" was published in the newspaper Latvijas V•stnesis on 31 March 2010, http://latvijasvestnesis.lv/index.php?menu=doc&id=207458&laidiens_id=8569
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

Given the level of activity by economic operators in submitting applications to acquire the right to sell electricity through compulsory procurement, and the fact that the impact of the current economic crisis means that there is no guarantee that the volume of electricity that has been ordered will be met and that economic operators will begin producing and selling electricity to AS "Latvenergo" within the time-limit specified, it is necessary to develop additional aid mechanisms over the next few years for the production of energy from RES.

3.2. Investment aid

Cabinet Regulation No 165 was adopted on 17 February 2009 "Regulations on the operational programme complement "Infrastructure and services" activity 3.5.2.2 "Development of cogeneration power plants using renewable energy sources" (hereinafter "activity 3.5.2.2").

The objective of the activity is to significantly increase the volume of electricity and heat produced from AER, thereby reducing Latvia's dependence on importing primary energy sources. Aid is provided under the activity for the construction of new cogeneration power plants using RES, as well as for reconstructing existing boiler houses as cogeneration power plants using RES.

As at 1 July 2011 contracts have been concluded for the implementation of 10 projects under activity 3.5.2.2, with financing from the Cohesion Fund totalling LVL 21 365 499.55.

Under Cabinet Regulation No 824 of 31 August 2010 "Regulations on the second and subsequent stages of selecting project applications for the operational programme complement "Infrastructure and services" activity 3.5.2.1 "Measures for improving the efficiency of the centralised heating system" (hereinafter "activity 3.5.2.1")", the Latvian Investment and Development Agency published a call for applications on 25 October 2010 to be submitted under open competition for Cohesion Fund activity 3.5.2.1. The objective of the activity is to significantly increase the efficiency of heat production, reduce heat losses in the transmission and distribution systems and promote the replacement of fossil fuels with renewable or other types of fuel.

As at 1 July 2011 contracts have been concluded for the implementation of 29 projects under activity 3.5.2.1, with financing from the Cohesion Fund totalling LVL 19 247 670.18, and four project applications have been approved for financing from the Cohesion Fund totalling LVL 6 753 677.40. The total amount of public financing available for activity 3.5.2.1 is LVL 42 322 856.88.

As at 30 June 2011 a total of 39 contracts have been concluded for the implementation of projects under measure 3.5.2 "Energy", totalling LVL 40 613 169.73.

During the reporting period, amendments to the operational programme complement "Infrastructure and services" resulted in setting up sub-activity 3.5.2.1.2 "Measures for improving the efficiency of the heating supply systems of undertakings", under which aid is provided for companies that produce heat with the aim of using it for their own or local heating supply needs. To date, aid from the EU funds has not been provided for these objectives, yet industrial undertakings have great potential for improving energy efficiency. Financing is awarded for heat production machinery with an installed capacity higher than 3 MW. By modernising or altering production and products, implementation of the projects will result in increased competitiveness of autonomous producers and their industrial capacity. Aid totalling LVL 13 007 743.08 is due to be provided for the sub-activity.

Cabinet Regulation No 441 was adopted on 12 May 2010 "Rules for projects submitted under the open competition "Transition from fossil fuel technologies to

technologies using renewable energy sources" and financed from the climate change financial instrument", and entered into force on 28 May 2010. A total of 80 applications were submitted under the competition and 47 have been approved to receive financing.

Aid has been provided under the competition for the implementation of the following power systems using renewable energy sources:

1) for eight small hydro-electric power plants with a total capacity of 1.45 MW;

2) for 10 small wind power plants with a total capacity of 12.35 MW;

3) for nine solar PV (photovoltaic) systems with a total capacity of 0.66 MW.

The forecasted emission savings for all the projects mentioned above is 13 829 t CO_2 equiv./year.

Figure 10 shows the percentage share of the approved projects by technological sector.

Figure 10. Projects approved under the open competition "Transition from fossil fuel technologies to technologies using renewable energy sources" and financed from the climate change financial instrument, by type of technology[16]

Latvian	**English**
Apstiprin•to projektu tehnolo•iju jomas	Approved projects by type of technology
V•ja elektrostacijas	Wind power plants
Biomasas katlum•jas	Biomass boiler houses
Saules elektrostacijas	Solar power plants
Hidroelektrostacijas	Hydro-electric power plants
Siltuma s•k•i	Heat pumps
Saules kolektoru sist•mas	Solar collector systems
Vair•ku tehnolo•iju kombin•ta izmantošana	Combined use of several technologies

As regards the Rural Development Programme 2007-2013 (hereinafter "RDP") sub-measure "Producing energy from biomass of agricultural and forestry resources" the Rural Support Service has approved 41 projects as at 20 July 2011 for a total eligible amount of LVL 96.5 million, of which public financing comprises LVL 38.4 million, and payment totalling LVL 7.7 million has been made for 13 projects.

Cabinet Regulation No 268 "Procedures for granting State and EU aid for sub-measure "Producing energy from biomass of agricultural and forestry resources" under the measure "Aid for creating and developing undertakings (including the diversification of activities not related to agriculture)" was adopted on 16 March 2010. The objective of the sub-measure is to provide support for economic operators who produce energy from biomass of agricultural and forestry resources and plan to sell the electricity produced from biogas cogeneration. Biogas is taken to mean gas obtained during the anaerobic fermentation process.

The total amount of eligible costs was determined on the assumption that investments for 1 kW of electricity does not exceed LVL 3000 (EUR 4268) for capacity up to 500 kW, and LVL 2500 (EUR 3557) for capacity higher than 500 kW.

A total of 14 projects were approved in 2009-2010 for the RDP measure "Basic services for the economy and residents" activity "Construction or reconstruction of power supply systems using renewable energy sources", with eligible costs totalling LVL 889 990.95, of which public financing comprised LVL 777 234.27. Given that the RDP

[16] Report "on the execution of the Guidelines for the Use of Renewable Energy Sources, 2006-2013" (TA-1225, minute No 34, § 26)
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

measure “Basic services for the economy and residents” includes four activities that are to be implemented: (1. construction or reconstruction of local authority roads, not including maintenance; 2. construction or reconstruction of local community centres, leisure, sport and cultural objects; 3. landscaping of public areas that is undertaken to provide basic recreational services in local authority areas; 4. construction or reconstruction of power supply systems using renewable energy sources), information on the implementation of projects under activity No 4 may be inaccurate because several activities can be combined under one project. According to information held by the Rural Support Service as at 20 July 2011, a total of 27 projects have been approved under this activity for eligible costs totalling LVL 1.8 million, of which public financing comprises LVL 1.5 million.

In addition, the RDP measure “Modernisation of rural farms” provides support for the modernisation of agricultural undertakings in order to improve their economic activity indicators and competitiveness. Aid is awarded for investments in new equipment, machinery, facilities, energy equipment and technology, and also for heating and ventilation technology and equipment, water supply and sewage, wastewater treatment equipment and technology that is due to be used for the production and packaging of agricultural products, as well as for the construction of buildings used for the production of agricultural projects and also to purchase building materials, including possible investments in producing energy from renewable sources only for consumption on the farm.

Cabinet Regulation No 11 of 4 January 2011 “Rules for projects submitted under the open competition “Use of renewable energy sources in the household sector” and financed from the climate change financial instrument” entered into force on 21 January 2011, and lays down the rules for the open competition “Use of renewable energy sources in the household sector” for projects financed from the climate change financial instrument, including the assessment criteria, the procedures for submitting, reviewing, approving and awarding financing for projects, as well as the procedures for implementing projects, submitting reports and monitoring. The objective of the competition is to reduce carbon dioxide emissions in the household sector, by providing support for the acquisition of technical equipment used to produce micro-generation heat or electricity and installation of the equipment in houses, in order to produce heat or electricity from renewable sources and supply heat or electricity only for the needs of the household in question.

Cabinet Regulation No 12 of 4 January 2011 “Rules for projects submitted under the open competition “Use of renewable energy sources to reduce greenhouse gas emissions” and financed from the climate change financial instrument” entered into force on 21 January 2011, and lays down the rules for the open competition “Use of renewable energy sources to reduce greenhouse gas emissions” for projects financed from the climate change financial instrument, including the assessment criteria, the procedures for submitting, reviewing, approving and awarding financing for projects, as well as the procedures for implementing projects, submitting reports and monitoring. The objective of the competition is to reduce carbon dioxide emissions by implementing technologies that use renewable energy sources for the production of heat and electricity, and by ensuring the transition from fossil fuel technologies to technologies using renewable energy sources.

Conclusions

Despite the fact that a legislative basis has been developed in Latvia, laying down the preconditions for using RES in the production of electricity and heat, national policy for renewable energy needs to be developed and evaluated on a regular basis, as well as the efficiency of the aid mechanisms contained therein.

The opportunities for national economic development and competiveness are also defined by the condition of the energy supply system, its operational efficiency and the safety of supply. Previous reports on the progress of implementing Directive 2001/77/EC forecasted that a rise in Latvia's gross national electricity consumption will have an impact on achieving the target for 2010.

In 2010 Latvia's gross national electricity consumption was 7500 GWh, which is a fall of 294 GWh when compared to 2008. In 2010 the volume of electricity produced from renewable energy sources was 3635 GWh, which is an increase from 3212 GWh in 2008.

In 2008 the percentage share of electricity produced from RES against gross national electricity consumption was 41.2%, in 2009 the figure was 49.2% and in 2010 the figure was 48.5%, which is 0.8% below that laid down in Directive 2001/77/EC.

The economic crisis has had an impact on the Latvian economy as a whole, including the energy sector. With that there is a significant change in energy consumption forecasts, which will have to be taken into account when drawing up new planning documents and when evaluating and adjusting mid-term policy planning documents in accordance with the latest economic development forecasts.

Renewable energy policy, which is laid down in Latvia's mid-term planning documents, sector legislation and Cabinet Regulations on aid for producing energy from renewable energy sources and from cogeneration, taking into account economic development trends, have not been sufficiently flexible to ensure that the targets for 2010 are reached, given that Latvia's gross national electricity consumption has changed each year.

Nevertheless, given that Latvia's indicative target, by which the percentage share of electricity produced from renewable energy sources against total electricity consumption must reach 49.3% by 2010, is one of the highest targets to be reached amongst all the Member States, and the fact that the Latvian authorities have done everything possible to continue promoting the use of RES in the production of energy, it can be concluded that Latvia has been conscientious in meeting its obligations as a Member State.

Annex

Table 1. Volume of electricity produced in wind power plants with an installed capacity of up to 0.25 MW and sold to the public trader in 2009 and 2010[17]

Year		Installed capacity at power plant, MW	Volume of electricity purchased through compulsory procurement, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2009	total	0.750	121 604	1 500 000	25 263	146 867
2010	total	2.706	863 544	8 450 000	392 203	1 255 747

Table 2. Volume of electricity produced in wind power plants with an installed capacity higher than 0.25 MW and sold to the public trader in 2009 and 2010[18]

Year		Installed capacity at power plant, MW	Volume of electricity purchased through compulsory procurement, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2009	total	27 650	47 436 833		1 600 612	49 037 445
2010	total	28 200	47 131 156	8 900 000	0	47 131 156

Table 3. Volume of electricity produced in hydro-electric power plants with an installed capacity of up to 5 MW and sold to the public trader AS "Latvenergo" in 2009 and 2010[19]

Year		Installed capacity at power plant, MW	Volume of electricity purchased through compulsory procurement, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2009	total	26 1402	63 541 113	96 477 570	1 096 058	64 637 171
2010	total	26 1357	72 450 971	100 963 558	979 751	73 430 722

[17] Ministry of Economics
[18] Ministry of Economics
[19] Ministry of Economics

Table 4. Volume of electricity produced in hydro-electric power plants with an installed capacity higher than 5 MW and sold to the public trader AS "Latvenergo" in 2010[20]

Year		Installed capacity at power plant, MW	Total volume of electricity produced, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2010	total	1525 600	3 445 606		3 424 186	3 424 186

Table 5. Volume of electricity produced in biogas power plants and sold to the public trader AS "Latvenergo" in 2009 and 2010[21]

Year		Installed capacity at power plant, MW	Volume of electricity purchased through compulsory procurement, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2009	total	9 096	33 859 512	40 815 000	489 672	34 349 184
2010	total	14 791	45 459 237	93 343 000	108 347	45 567 584

Table 6. Volume of electricity produced in biogas power plants and in power plants where biomass is used together with fossil fuels, and sold to the public trader AS "Latvenergo" in 2009 and 2010[22]

Year		Installed capacity at power plant, MW	Volume of electricity purchased through compulsory procurement, kWh	Annual limit for compulsory procurement volume, kWh	Volume of electricity purchased within the market, kWh	Total volume of electricity purchased, kWh
2009	total	2200	3 030 118	2 600 000	0	3 030 118
2010	total	2449	5 069 833	4 673 000	0	5 069 833

[20] Ministry of Economics
[21] Ministry of Economics
[22] Ministry of Economics
EMZino_151211_77_EK; Information report entitled "Report by Latvia on the progress of achieving indicative national targets pursuant to Article 3(3) of 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"

List of abbreviations and explanations

RES – renewable energy sources
AS – joint stock company
EU – European Union
EUR – euro (common currency of the EU)
HPP – hydro-electric power plant
GDP – gross domestic product
RDP – Rural Development Programme
LVL – Latvian lats
Cabinet – Cabinet of Ministers
CIS – Commonwealth of Independent States
TSO – transmission system operator
GHG – greenhouse gas
TEC – thermoelectric central

Units of measurement

t – tonne (10^3 kg)
m^3 – cubic metre
ha – hectare
mill. – million
km – kilometre
kW– kilowatt
MW – megawatt
kWh – kilowatt hour
MWh – megawatt hour
GWh – gigawatt hour
TWh – terawatt hour
PJ – petajoule

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