

MINISTRY OF ENERGY OF THE REPUBLIC OF LITHUANIA

**FORECAST DOCUMENT ON THE USE OF ENERGY
FROM RENEWABLE SOURCES FOR 2010-20**

Vilnius, 2009

CONTENTS

INTRODUCTION	2
1. TARGETS FOR THE USE OF ENERGY FROM RENEWABLE SOURCES	3
2. FORECASTS FOR THE SHARE OF ENERGY FROM RENEWABLE SOURCES IN GROSS FINAL ENERGY CONSUMPTION	5
3. STATISTICAL TRANSFERS AND JOINT PROJECTS	6

INTRODUCTION

On 23 April 2009, the European Parliament and the Council adopted Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16) (hereinafter 'the Directive').

For each European Union Member State (hereinafter 'Member State'), the Directive sets individual mandatory national targets for the share of energy from renewable sources¹ in gross final energy consumption² to be achieved by 2020 and stipulates that, for each Member State, at least 10% of final energy consumption in the transport sector must come from renewable sources.

Under the Directive, Lithuania must ensure that the share of energy from renewable sources in gross final energy consumption is at least 23% in 2020.

Article 4(3) of the Directive stipulates that each Member State must publish and notify to the European Commission, six months before its national renewable energy action plan is due, i.e. by 30 December 2009, a forecast document indicating:

1. its estimated excess production of energy from renewable sources compared to the indicative trajectory which could be transferred to other Member States in accordance with Articles 6 to 11 of Directive 2009/28/EC, as well as its estimated potential for joint projects, until 2020; and

2. its estimated demand for energy from renewable sources to be satisfied by means other than domestic production until 2020.

This forecast document on the use of energy from renewable sources for 2010-20 sets out targets for the use of energy from renewable sources, predicts the development of renewable energy's share over the period 2010-20 and assesses the potential for using the statistical transfer and joint project mechanisms provided for in the Directive.

¹ 'Energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

² 'Gross final energy consumption' means the energy commodities delivered for energy purposes to industry, transport, households, services (including public services), agriculture, forestry and fisheries, including the consumption of electricity and heat by the energy branch for electricity and heat production and including losses of electricity and heat in distribution and transmission.

1. TARGETS FOR THE USE OF ENERGY FROM RENEWABLE SOURCES

The Energy Law of the Republic of Lithuania (Official Gazette 2002, No 56-2224) gives promoting the use of energy from renewable sources as one of the principal objectives of State regulation of energy sector activities.

The long-term development of the use of energy from renewable sources is set out in the National Energy Strategy, as approved by Resolution No X-1046 of the Parliament of the Republic of Lithuania of 18 January 2007 (Official Gazette 2007, No 11-430), the Lithuanian Government Programme, as approved by Resolution No XI-52 of the Parliament of the Republic of Lithuania of 9 December 2009 (Official Gazette 2008, No 146-5870), and the implementing measures for the 2008-12 Lithuanian Government Programme, as approved by Resolution No 189 of the Government of the Republic of Lithuania of 25 February 2009 (Official Gazette 2009, No 33-1268).

The National Energy Strategy lays down the following targets for the use of renewable energy sources by 2025:

1. to increase the share of renewable energy sources in the overall national balance of primary energy to at least 20% (it was 9.1% in 2008);
2. to increase the share of biofuels in the national transport fuels market by at least 20% (at least 15% by 2020) (it was 4.3% in 2008).

The Lithuanian Government Programme provides for the implementation of a programme to diversify the district heating sector, which would ensure that half of the heat and electricity supplied to towns and cities is obtained from biofuel-based cogeneration, thus reducing the proportion of natural gas used in thermal power stations to 40% from its current level of 80%.

Use of energy from renewable sources for heating

The renewable energy sources used for heating in Lithuania are biomass and geothermal and solar energy, with biofuel accounting for the lion's share. The principal sources of biomass used for heating are wood and wood waste, agricultural products and biogas. In order to increase the use of biomass for energy purposes, the use of hitherto insufficiently tapped resources, such as logging waste, short rotation coppice, straw, municipal waste and biogas, should be promoted for energy production.

In 2008, the share of energy from renewable sources in the heating sector³ was 28%. Energy from renewable sources used directly in households and other sectors accounted for 76% of this share. District heating accounted for the remainder. In 2008, 15% of the district heating supply was generated from renewable sources. Achieving the most rapid further development of the use of energy from renewable sources is linked to increasing the use of renewable sources in the district heating sector.

The use of energy from renewable sources for electricity generation

In 2008, electricity generated from renewable energy sources accounted for 4.6% of gross electricity consumption. Of that percentage, 67% was generated by hydroelectric plants, 22% by wind power plants and 11% by biofuel plants.

The proportion of electricity generated by biofuel plants could be increased from the current level of 0.5% of gross electricity consumption to 4% by 2020.

Lithuania has one hydroelectric plant with an installed capacity of 100.8 MW and 85 small hydroelectric plants with a combined installed capacity of 26 MW. Under the current arrangements for the construction and operation of hydroelectric plants, only small plants can be built in Lithuania. After the proposed construction plans have been implemented and old small hydroelectric plant facilities have been updated, the current capacity and electricity generation in small hydroelectric plants could double by 2020.

In Lithuania, wind turbines are one of the fastest growing renewable energy technologies. The total installed wind power capacity is currently approximately 70 MW. It is predicted that wind turbines could generate 10% of gross electricity consumption by 2020.

Use of energy from renewable sources in the transport sector

In 2008, biofuels (biodiesel, bioethanol and bio-ETBE) accounted for 4.3% of the total amount of petrol and biodiesel used for transport purposes. Rapeseed and cereal grains are the principal raw materials used to produce biofuel.

In the transport sector, the share of biofuel in the national transport fuel market is expected to increase to 15% by 2020.

³ The share of energy from renewable sources in the heating and cooling sector is calculated by dividing the gross final consumption of energy from renewable sources for heating (as defined in Article 5(1)(b) and Article 5(4) of the Directive) by the gross final consumption of energy for heating.

2. FORECASTS FOR THE SHARE OF ENERGY FROM RENEWABLE SOURCES IN GROSS FINAL ENERGY CONSUMPTION

Table 1 shows the national 2020 target and the estimated trajectory of energy from renewable sources for 2010-20. It is predicted that, in 2020, the share of energy from renewable sources in gross final energy consumption will be 23.3%. This percentage is expected to be achieved using the country's existing potential for energy from renewable sources and without using the mechanisms for cooperation between Member States established in Articles 6 to 11 of the Directive.

Table 1. National 2020 target and estimated trajectory of energy from renewable sources (%).

Year	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ERES ⁴ share in gross final energy consumption (%)	15	17.6	18.3	18.5	18.8	19.3	19.6	20.3	20.9	21.4	22.2	23
Percentage of which from cooperation mechanism (%)	0	0	0	0	0	0	0	0	0	0	0	0
Surplus for cooperation mechanism (%)			1.8		1.7		1.4		0.9			0
Under Part B of Annex I to the Directive			2011-12		2013-14		2015-16		2017-18			
	S ₂₀₀₅		S ₂₀₀₅ +20% (S ₂₀₂₀ -S ₂₀₀₅)		S ₂₀₀₅ +30% (S ₂₀₂₀ -S ₂₀₀₅)		S ₂₀₀₅ +45% (S ₂₀₂₀ -S ₂₀₀₅)		S ₂₀₀₅ +65% (S ₂₀₂₀ -S ₂₀₀₅)			S ₂₀₂₀
ERES minimum trajectory ⁵ (%)	15		16.6		17.4		18.6		20.2			23

It is predicted that the share of energy from renewable sources will exceed the indicative trajectory for 2011-18 as laid down in the Directive. The total surplus of energy from renewable sources for the period 2011-18 could amount to approximately 600 ktoe.

In 2020, the ERES share will correspond to the mandatory national target set in the Directive for the share of renewable energy in gross final energy consumption.

⁴ ERES – energy from renewable energy sources.

⁵ As defined in Part B of Annex I to the Directive.

3. STATISTICAL TRANSFERS AND JOINT PROJECTS

Under Article 6(1) of the Directive, Member States may agree on or make arrangements for the **statistical transfer** of a specified amount of energy from renewable sources from one Member State to another Member State. The transferred quantity must be:

- deducted from the amount of energy from renewable sources that is taken into account in measuring compliance by the Member State making the transfer with the requirements of Article 3(1) and (2) of the Directive; and

- added to the amount of energy from renewable sources that is taken into account in measuring compliance by another Member State accepting the transfer with the requirements of Article 3(1) and (2) of the Directive.

A statistical transfer may not affect the achievement of the national target or indicative trajectory of the Member State making the transfer.

Under Article 7(1) of the Directive, Member States may cooperate on all types of **joint projects** relating to the production of electricity, heating or cooling from renewable energy sources. The amount of energy produced as a result of those projects is divided up statistically, as set out in the agreement, among the Member States that participated in the project.

Under Article 11(1) of the Directive, two or more Member States may, without prejudice to their obligations, decide, on a voluntary basis, to **join** or partly coordinate their national **support schemes**. In such cases, a certain amount of energy from renewable sources produced in the territory of one participating Member State may count towards the national overall target of another participating Member State.

It is predicted that a 23% share of energy from renewable sources can be achieved in Lithuania in 2020 using existing local resources. Priority should be given to using the potential of local renewable energy sources.

With a view to achieving the 23% target, additional measures are needed to promote the use of energy from renewable sources alongside the existing ones. Consequently, the actual development of the share of energy from renewable sources in gross final energy consumption will depend primarily on how quickly and successfully the planned measures for promoting the use of energy from renewable sources are implemented.

Another factor affecting the growth targets for the use of energy from renewable sources is the evolution of gross final energy consumption. How gross final energy consumption evolves will largely depend on the country's economic recovery and growth rate and the implementation of its energy efficiency improvement policy. Furthermore, the nuclear power station to be built by 2020 will also affect the development of gross final energy consumption.

Given the above, **at this stage**:

1. the demand for energy from renewable sources is expected to be met by domestic production capacity;
2. it is estimated that the surplus renewable energy produced over the period 2011-18 could be statistically transferred to other Member States in accordance with the established procedure;
3. implementation of joint projects with other Member States, as provided for in Articles 7 and 8 of the Directive, is not anticipated.

The targets and forecasts submitted for the use of energy from renewable sources will be reviewed and updated in the national renewable energy action plan, which is being drawn up and must be approved by 30 June 2010, and in the subsequent progress reports on the promotion and use of energy from renewable sources, as laid down in Article 22 of the Directive.