



## RENEWABLE ENERGY POLICY REVIEW

### ESTONIA

Estonian economy is highly dependent on fossil fuels. Approximately 90% of Estonia's energy is produced through the combustion of fossil fuels. The remaining 10% comes from renewables, such as biomass, hydropower and wind. The main domestic energy source is the combustion of oil shale, which puts high pressure on the environment -approximately 70% of atmospheric pollution, 80% of effluents and 80% of generation of solid waste are connected with the oil shale power industry.

Estonia is less dependent on energy imports than most EU Member States. Imports are mainly oil and gas (the latter exclusively from Russia). Security of energy supply is seen as an important issue and increased energy links with other Baltic and EU states are seen as key to enhancing security of supply.

Estonia's largest RES potential is to be found in the biomass sector, but possibilities also exist in the areas of wind power, biogas electricity and small hydro power.

#### KEY FIGURES

- The **share of RES in total primary energy production** was 12.46 % in 2005.
- The **share of RES in the gross final energy consumption** was 1.91% in 2006.
- The **share of RES in the gross electricity consumption** was 1.75% in 2007.
- The **share of all biofuels** in the transport sector in 2006 was 0.12%.
- Dependence on external energy supplies was of about 33.9% in 2005.

## Technology specific figures

- In 2007, electricity production from RES amounted to 149GWh: with wind accounting for 91GWh and hydro for 22GWh.
- Biofuel production in Estonia registered a little decrease in 2007, passing from 633toe in 2006 to 511 toe the following year. Nevertheless, while no bioethanol was produced until 2006, as of 2007 a tiny production of 13toe was started<sup>1</sup>.
- District heating covers ca 70% of total heat need in buildings.

## RES POLICY

### RES TARGETS

#### Mandatory targets set by the Directive on the Promotion of the use of energy from renewable sources

- 25% share of RES on the final consumption of energy in 2020.
- At least 10% share of renewable energy in final consumption of energy in transport by 2020.

#### Indicative Target set by the RES- electricity European Directive from 2001<sup>2</sup>

- 5.1 % share of RES on gross electricity consumption by 2010.

#### Indicative Target set by the European Biofuels Directive from 2003<sup>3</sup>

- Biofuels consumption of 5.75% of petrol and diesel use for transport in 2010.

## National Commitments

The "Long-term national development plan for the fuel and energy sector until 2015" adopted through a decision of the Parliament on 15 December 2004 set a target for biofuel of 2% by 2006 and 5.75% by 2011, calculated on the basis of energy value.

- 12 % of gross national energy consumption by 2010. The target is already achieved due to high share of wood and wood waste for heat production
- 5,1% of gross national electricity consumption by 2010 and 8 % by 2015

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<sup>1</sup> Eurobserv'er

<sup>2</sup> Directive 2007/71/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market. Currently in force, sets targets up to 2010.

<sup>3</sup> Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport. Currently in force, sets targets up to 2010, with indicative targets by 2005.

## **Progress towards the target**

The production of electricity from renewable sources increased in the period 2005 -2006. At the same time consumption also increased (6 022GWh in 2005 and 7 904GWh in 2006), and therefore the share of renewable energy sources in total consumption even fell, from 1.8% in 2005 to 1.6% in 2006.

## **Support for RES Electricity**

### *Feed-in tariff*

The Feed-In Tariffs are regulated by the Electricity Market Act which entered into force on July 1st, 2003. The Electricity Market Act was last amended in 2007. The version of the Act applying until 30 April 2007, required network operators to purchase in a trading period (at a price of EEK 0.81/kWh) all the electricity generated by a producer of renewable energy to the extent of the operator's network losses. The main problem with this scheme was that a network operator who did not have a license to sell electricity could not buy more electricity than the amount equivalent to his network losses in the trading period. This support scheme was above all a source of uncertainty for wind farms connected to the grid, since at times of low electricity consumption (for example summer nights) network losses are small and so the purchase obligation was also small.

For this reason, in 2005 amendments were made to the Energy Market Act to introduce a new aid scheme, and this process was concluded on 15 February 2007, when Parliament passed the Act that came into force on 1 May 2007.

- The new aid scheme for producers of renewable energy allows them to use the purchase obligation as before, but adds the possibility for a producer to sell the electricity produced itself and be given aid for the electricity sent to the grid and sold.
- The mandatory purchase price for electricity produced from renewable energy sources has been raised by 42% (to EEK 1.15/kWh), and the possibility of using the purchase obligation is no longer restricted to the network losses.
- In addition to making use of the purchase obligation, producers of renewable energy can now receive aid of EEK 0.84/kWh for electricity sent to the grid and sold, which offers the possibility if sales are good of earning considerably more than from the purchase obligation.
- The duration of the aid scheme has also been extended: 12 years from the start of production (the previous Act allowed the aid scheme to be used for between 7 and 12 years, but no longer than until the end of 2015).
- The general aid scheme also includes one restriction on producers using wind as a source of energy from 2009, in that aid will be paid to them or they will be able to use the purchase obligation until such time as the production in Estonia in a calendar year reaches limits of 400GWh and 200GWh respectively (producers must sell electricity produced above these limits at market price without using the purchase obligation or aid). Separate records will be kept for each calendar year.

The linking of the obligation to purchase electricity generated from wind power or the payment of aid to the annual production quantity is a result of the technical particularities of

the Estonian grid — there are no power stations in the grid that can be rapidly regulated. Most of the generating capacity in the electricity grid (more than 90 %) has been developed in the Narva area (North-Eastern Estonia), but the centres of consumption have evolved in other parts of the country (the main load centres are in Tallinn, Tartu and Pärnu and the surrounding areas).

In order to cover peak loads and extend the use of wind power, it will be necessary to construct reserve capacity that can be rapidly regulated (mainly gas turbines) and modernise the grid along the west coast of Estonia and in the islands. The investment requirement for new power generation units up to 2015 is estimated at a total of EEK 10–15 billion, of which EEK 2–3 billion for generation from renewable energy sources.

Resource	Support level [€cents/kWh]	Start year	Duration [years that an investor is entitled to support]	End year [of the scheme]	Comments
Wind	74.2 €/MWh (purchase obligation)	2007	During 12 years	up to the annual total production of all wind farms 200GWh	From the beginning of operation
other renewables	74.2 €/MWh (purchase obligation)	2007	12 years		From beginning of operation
Wind	54.2 €/MWh (Support for sold electricity)	2010	During 12 years	up to the annual total production of all wind farms 400GWH	From the beginning of operation
other renewables.	54.2 €/MWh (Support for sold electricity)	2010	12 years		From beginning of operation
All RES	5.2-7.34		12 years		Purchase obligation of wind energy - from 2009 - up to 200 GWh/per annum; support for the sold electricity - up to 400 GWh/per annum. From 2009 balance responsibility for wind energy producers

1EURO: 15.64 EEK

### Support for RES electricity in high efficiency cogeneration process

Biomass used for heating is the main source of Renewable energy: 90% of the production of firewood is used in households. Woodchips are also widely used in households.

Resource	Technology	Support level (feed-in tariff) [EUR/MWh_e]	Start year	Duration [years that an investor is entitled to support]	Comments
wood	CHP	feed-in 74 €/MWh	2007	12 years	from the beginning of operation
any other	CHP	feed-in 54.0 €/MWh	2007	12 years	from the beginning of operation
wood	CHP	support 54 €/MWh	2010	12 years	from the beginning of operation
any other	CHP	support 33.3 €/MWh	2010	12 years	from the beginning of operation

### Support for biofuels

Biofuel is exempt from excise duty without any conditions since July 2005. If biofuel is added to fossil fuels, the portion of biofuel contained in such fuel is exempt from excise duty until the permit expires. A biofuel permit granted for six years by the Tax and Customs Board gives the right to produce biofuel, import it into Estonia and release it for consumption free of excise duty. It obliges the beneficiary together with the application to present specifications and a yearly report.

Resource	Total support level (= tax exemption incl. reduction of VAT to be paid) [€cents/litre]	start year	Duration [years of support entitled]
biodiesel	no excise tax	2006	6

Under the Alcohol, Tobacco and Fuel Excise Duty Act, biofuel is exempt from excise duty once the European Commission has authorised it and until that authorisation expires. Biofuel, for which the first four digits of the CN code are 4401 or 4402, is unconditionally exempt from excise duty. Authorisation to exempt biofuel from excise duty was received from the European Commission in a letter dated 27 July 2005.

### Support for all RES

#### *Tax relief*

To promote the utilization and development of RES, some tax relieves from the usual 18% VAT have been stated.

### *Project funding*

Some funding is available at the Estonian Fund for Nature (ELF), which grants subsidies to several environmental projects, among others, projects concerning sustainable development.

### *Development plan to promote Bioenergy (2007-2013)*

The government of the Republic drew up the Development plan to promote the use of biomass and bio energy 2007-2013. The main objective of this plan is to create suitable conditions for the development of domestic biofuel and bio energy production, reduce Estonia's dependence on imported resources and fossil fuel.

The intention is to implement the development plan in two phases:

Phase I (2007-2008) will begin with studies to analyse the market, resources, and technologies. In phase II (2009-2013) all the sound, well-justified market organisation measures to promote the use of biomass (subsidies, taxes, standards, knowledge acquisition, etc.) will be applied on the basis of the analyses and studies carried out in phase I.

On 8 February 2007 the Government approved the Estonian Rural Development Plan 2007-2013 which provides support to:

- investments aimed at the production of biomass and biofuels in agricultural holdings.
- micro-companies producing forestry products to invest in tangible and intangible assets in order to procure and introduce new products, production methods and technologies,
- the production of biofuels from non-wood agricultural products and from the production waste from the manufacture of agricultural and non-wood forestry products.
- to applied research and product innovation with regard to bio energy crops and biofuels.

In 2007 around EEK 700/ha were paid in subsidies for energy crops, EEK 863.9/ha for growing agricultural crops and EEK 945/ha in standard agricultural subsidies. In 2006 applications for energy crop subsidies totalled 11 565.49 ha.

## Sources

European Commission Factsheets by Country

[http://ec.europa.eu/energy/energy\\_policy/facts\\_en.htm](http://ec.europa.eu/energy/energy_policy/facts_en.htm)

Member States Reports in the framework of the Directive 2001/77/EC on renewable electricity

[http://ec.europa.eu/energy/res/legislation/electricity\\_member\\_states\\_en.htm](http://ec.europa.eu/energy/res/legislation/electricity_member_states_en.htm)

Member States Reports in the framework of the Directive 2003/30/EC on biofuels

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[www.mkm.ee](http://www.mkm.ee)

Tallin University of Technology

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EurObserv'er Barometer

<http://www.energies-renouvelables.org/observ-er/sig/eufores/sig.asp>



In the framework of the EU co –funded project: RES 2020: Monitoring and Evaluation of the RES Directives implementation in EU27 and policy recommendations to 2020



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