

NATIONAL RENEWABLE ENERGY ACTION PLAN Warsaw 2010

The Polish Council of Ministers adopted the National Renewable Energy Action Plan on December 7, 2010. The Plan assumes that in Poland 15,5 percent of the gross final energy will come from renewable sources by 2020.

The document specifies the Polish targets for the share of renewable energy in transport, power generation, heating and cooling. The underlying assumption is that those targets will be achieved in a sustainable way. The document puts emphasis on a more efficient use of biomass and increase use of wind energy.

The Plan envisages that the RES will cover the increase in demand for energy by what a greater independence from imported fossil fuels will be achieved. Promotion of the use of renewable energy sources will lead to diversification of supply sources and create conditions for the development of distributed energy system, based on the locally available energy resources

The growth of the renewable energy sector will contribute to the development of regions economically lagging behind, which typically possess rich “green energy” potential. Moreover, investments in renewable energy will create local jobs reducing the unemployment rate in those regions.

The following general assumptions have been accepted in producing the forecasts for each type of RES:

1. In Poland, producers of energy from renewable sources will be granted support, in order to satisfy requirements of Directive 2009/28/EC.
2. The final energy use in the years 2010-2015-2020 was assumed as determined in accordance with Energy Policy of Poland until 2030.
3. Gross final energy consumption has been presented for the following two scenarios:
 - reference scenario that takes into account the energy efficiency and saving measures adopted before 2009;
 - additional energy efficiency scenario taking into account all measures to be adopted from 2009.
4. It has been assumed that in 2010, no new or additional forms of financial support to RES will be introduced, however efforts will be made to propose new legislation aimed at increasing the share of energy from renewable sources in gross final energy consumption (taking into account the development of all RES technologies).
5. The support to renewable energy sources is assumed to be maintained. The development of distributed renewable energy sources will be supported, including determining conditions for retaining rights already acquired for the investments completed or started, and their duration, which would allow reducing end user charges.
6. Maintaining so-called co-firing as RES form to be used in Poland is expected until 2020, taking into account limitations with respect to forest biomass firing.
7. All forecasts, including sectoral ones, are estimates, are based on expert calculations and on existing source documents made available to industry associations.
8. The National Plan presents a path to achieve the objective assumed, together with proportionate shares of electricity, heating and cooling, as well as transport in the achievement of this objective.

9. The National Plan takes into account the existing technologies of RES use, as well as the technologies that might be developed in the future, in Polish functional conditions, as well as the energy market development, taking into account economic, technical, as well as formal and legal aspects. All costs calculations have been performed based on prices of given technologies from 2010. It has been assumed that electricity exchange balance with neighbouring countries would equal zero.
10. Taking into account the development of RES in the electricity sector, the development of sources based on wind energy and biomass is primarily expected. An increase in the number of small hydro power plants has also been assumed. Taking into account the development of RES in the heating and cooling sector, maintaining the market structure existing until now has been expected, taking into account the development of geothermal and solar energy.
11. Energy consumption in the heating and cooling sector, and the share of RES in this sector shall be understood as heat including so-called network heat, as well as heat generated on an individual bases in the household, services and agricultural sectors.
12. Taking into account the development of RES with respect to the transport sector, a growth in the share of biofuels and biocomponents in transport fuels has been primarily expected. In accordance with estimates of industry association, until 2020 the car transport shall not use electricity to a large extent, which translates to a limited share of this technology in the fuel market.

Table 1: Generation capacity of gross electricity [MW]

Fuel/technology	2006	2010	2015	2020	2025	2030
Lignite - PC boiler/ fluidized-bed furnace	8,819	9,177	9,024	8,184	10,344	10,884
Hard coal - PC boiler/ fluidized-bed furnace	15,878	15,796	15,673	15,012	11,36	10,703
Hard coal - CHP	4,845	4,95	5,394	5,658	5,835	5,807
Natural gas - CHP	704	710	810	873	964	1,09
Natural gas - GTCC	0	0	400	600	1010	2,24
Large water	853	853	853	853	853	853
Pump water	1,406	1,406	1,406	1,406	1,406	1,406
Nuclear	0	0	0	1,6	3,2	4,8
Industrial Coal - CHP	1,516	1,411	1,416	1,447	1,514	1,555
Industrial Gas - CHP	51	50	63	79	85	92
Industrial Other - CHP	671	730	834	882	896	910
Local Gas	0	0	22	72	167	278
Small water	69	107	192	282	298	298
Wind	173	976	3,396	6,089	7,564	7,867
Solid biomass - CHP*	25	40	196	623	958	1,218
Biogas - CHP	33	74	328	802	1,293	1,379
Photovoltaics	0	0	0	2	16	32
TOTAL	35,043	36,28	40,007	44,464	47,763	51,412

* – co-firing not included

Source: Energy Policy of Poland until 2030

According to the *Energy Policy of Poland until 2030*, in Polish conditions, the progress made in wind energy production, biogas and solid biomass production and in transport biofuels will be of decisive importance in the context of achieving the objective of 15% share of energy from renewable sources in the gross final energy structure by 2020. In 2020, these four areas will account in total for about 94% of consumption of energy from all renewable sources.

Table 1 (below) presents the forecasts of installed production capacity of gross electricity by type of fuels and production technology used, drew up as a part of the *Energy Policy*. Until 2020, renewable technologies would account in total for 25.4% of total generation capacity (22.6% in 2030). A drop in this percentage share in the years 2020-2030 will primarily be due to the inclusion in the summary of nuclear energy, which is to be introduced in Poland after 2020.

Implementation of the following measures (listed below) to support certified RES producers accelerated the development of RES in Poland, which has been confirmed by the statistical data reflecting the dynamics of changes in the years 2006-2008.

a) Based on the Energy Act and secondary legislation to this Act, inter alia:

- obligation to purchase energy from RES imposed ex officio on sellers of electricity, who issued conditions of connections to the grid for a given source;
- obligation of energy grid operators to ensure priority to all entities in the provision of services involving transmission or distribution of electricity produced from renewable energy sources;
- reduction of the fee for connection to the grid, determined based on actual outlays incurred for installing the connection for renewable energy sources with total installed power not exceeding 5 MW and cogeneration units with power not exceeding 1 MW;
- special principles of wind farm balancing;
 - additional support to small RES (below 5 MW) producing electricity (for instance: exemption from stamp duty for issuing the license and certificates of origin).

b) Based on other legislation:

- exemption of energy produced from renewable sources from excise duty that currently equals PLN 20 per 1 MWh.

c) Financial support to investments in RES provided in form of grants or borrowings and investment loans bearing low interest rate:

- from public funds, including EU funds within financing of Operational Programme:
 - Infrastructure and Environment and Regional Operational Programmes;
- from regional funds, including from the budget of the European Union, within the scope of support to investment projects pertaining to RES;
- from funds of the National Fund for Environmental Protection and Water Management (Narodowy Fundusz Ochrony •rodowiska i Gospodarki Wodnej);
- from funds of the Eco-Fund that provided co-financing for investments in solar, wind, biomass and biogas energy, and highly efficient co-generation in the years 2005-2009;
- from resources of the European Economic Area, including the Norwegian Financial Mechanism that provided co-financing for, inter alia, projects increasing the use of renewable energy sources in the years 2004-2009.

In 2010, the national RES policy has been focused on implementation of provisions 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, including in particular preparation and adoption of necessary normative acts.