



Electricity generation from renewable energy sources in Poland



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ABSTRACT

Abstract: For the European Union's Member States 2001/77/EC Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market determined targets for 2010 of 21% share of electricity from renewable energy sources in total electricity consumption. Particular Member States adopted different measures for development of renewable and in consequence they achieved different results. Poland, being Member State of the EU since 2004 has accepted target of 7.5% for electricity generated from renewable energy sources until 2010. Currently, in this decade, new 2009/28/EC Directive on the promotion of the use of energy from renewable sources plays significant role in development of renewable energy sources. Directive set new target for 2020. Nowadays is a time for summary and assessment of results fulfilling Directives and monitor progress of new targets. Article presents measures implemented for renewable source energy development, also current state and perspectives of using of renewable energy sources in Poland and in the EU.

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1. Introduction

According to Energy-Climate Package, renewable energy being a key component of the energy strategy of the European Union (the EU) is crucial to move towards a low carbon economy. The EU renewable energy policy is relatively young, having started with the adoption of the 1997 White Paper. It has been driven by the need to de-carbonize the energy sector and to address growing dependency on fossil fuels' import from politically unstable regions outside the EU. Over that period the focus has shifted from the promotion of renewable energy through indicative targets for the electricity and transport sectors – targets for 2010, to the legally binding targets – targets for 2020, supported by a comprehensive legislative framework, and most recently, to a reorientation of European energy infrastructure policy that facilitates renewable energy growth.

Legislation framework in last decade covered support for electricity and biofuels generation from renewable energy sources. 2001/77/EC Directive of 27 September 2001 on the promotion of electricity produced from renewable energy sources set common indicative targets of 21% by 2010 to reach by the EU in electricity generation and 2003/30/EC Directive of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels set national

indicative targets to achieve by the EU share of renewable energy replacing petrol and diesel in transport at 5.75% by 2010 [1]. In this article mainly issues related to electricity generation from renewable energy sources are presented.

Renewable Energy: Progressing towards the 2020 target's report, presented by the European Commission, shows that the EU as a whole did not achieve the Directive target [2]. Only a few Member States, namely Denmark, Germany, Hungary, Ireland, Lithuania, and Portugal achieved their 2010' targets for renewable energy in electricity generation. Sectorial and overall share of renewable energy in the EU is presented in Fig. 1.

Taking into account the failure in Directive's targets and weak efforts of some Member States done in a past, the European Commission proposed the provisions of the new Directive defining the status of renewable energy sources beyond 2010. In result the European Parliament and the Council decided finally to strengthen the provisions of the Directive and to introduce new commitments, this time with mandatory targets for energy production from renewables [3]. The new Directive also changed the approach to the sectors of energy production from renewable sources. Previously supported only production of electricity and transport biofuels in separate Directives are incorporated into one, and additionally the new Directive extends support for heat and cool generation from renewable sources. Therefore, new Directive comprehensively covers support for renewable energy sources in all areas. The Directive establishes a common goal relating to these three areas, giving Member States flexibility in its implementation through the

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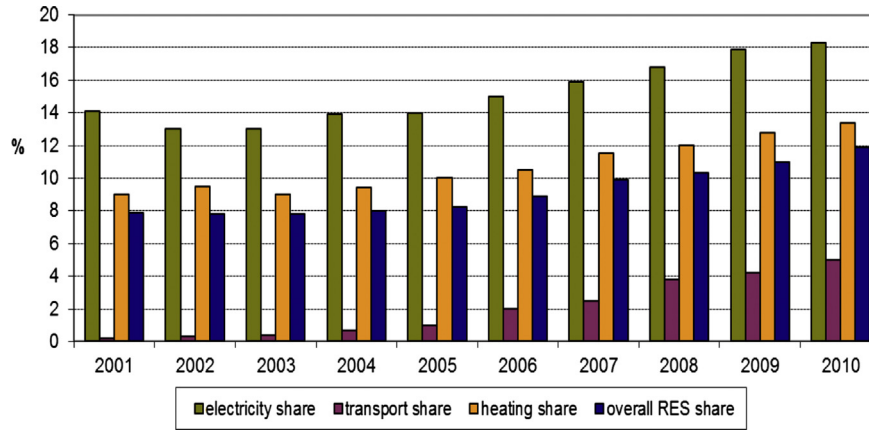


Fig. 1. Results of 2010 targets' realization in the EU [2].

use of potential renewable energy sources in these sectors. It is also worth emphasizing, that the Directive pointing minimum target of 10% of biofuels used in transport. Polish government when negotiated the scope of the Directive decided to accept an increase the share of energy generated from renewable sources to 15% in gross final energy consumption by 2020. Fig. 2 shows the Directive targets for the individual EU Member States, as well as the production in 2005, called base year [3,4].

2. Renewable energy sources in energy policy of Poland until 2030

In 2009 Polish Government adopted Energy Policy of Poland until 2030, strategic document where main directions of energy sector development for next 20 years are depicted [5]. According to Energy Policy energy sector in Poland is facing a number of serious challenges. Among others, high demand for energy, insufficient domestic fuel supply and energy generation capacity and low density of transmission and distribution infrastructure, significant dependence on external supplies of natural gas and

almost full dependence on external supplies of crude oil, as well as commitments in the field of environmental protection, including climate protection, influence actions preventing the deterioration of the situation of fuel and energy customers. At the same time, the global economy witnessed a series of unfavorable events in recent years. Significant fluctuations in prices of energy and the increasing environmental pollution require a new approach to energy policy.

In line with the above presented general framework, Polish energy policy defined main directions for energy sector:

- Energy efficiency improvement;
- Security of fuels and energy supply;
- Diversification of electricity generation by using nuclear energy;
- Development of renewable energy, including biofuels;
- Implementation full competitive energy and fuels markets;
- Reduction of pollutions from energy sector.

The adopted directions of energy policy are largely correlated. For example development of renewable energy sources and

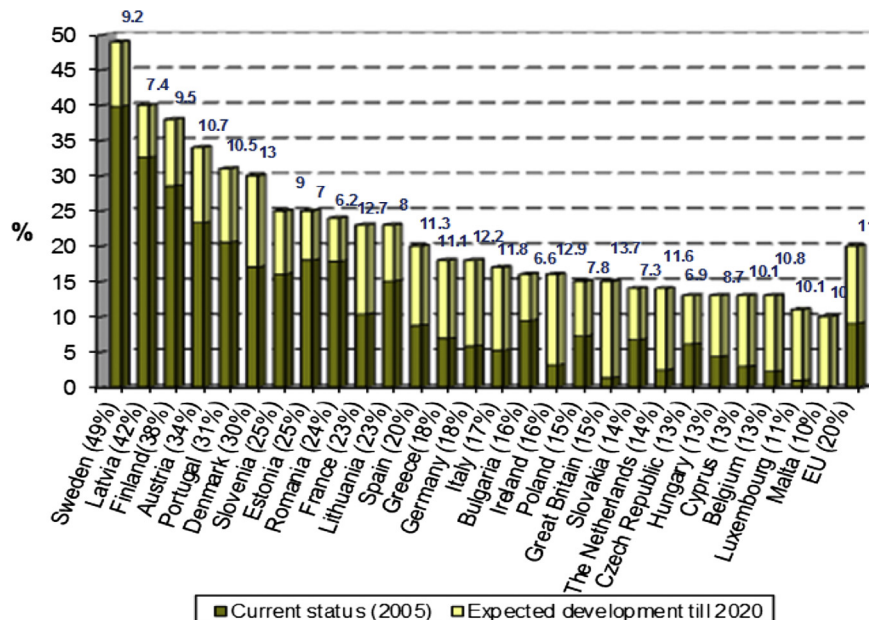


Fig. 2. 2020's targets and status of renewable energy generation in base year [3,4].

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