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Recent developments in the wind energy sector in Poland

Anna Brzezińska-Rawa^{a,*}, Justyna Goździewicz-Biechońska^b^a Nicolaus Copernicus University, Faculty of Law and Administration, Bojarskiego 3, 87-100 Toruń, Poland^b Mieszko I College of Education and Administration in Poznań, Faculty of Law and Administration, Bułgarska 55, 60-320 Poznań, Poland

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ABSTRACT

The article describes and analyzes developments in the wind energy sector in Poland in 2012–2013 in a broader perspective of the main features of the energy sector in Poland. It encompasses the building of new wind farms, changes of ownership in the sector, prospects for offshore wind farms and support scheme developments. The article points out the current biggest barriers to further development of the wind energy sector and its future trends.

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Contents

1. Introduction	79
2. The growth of investments in wind energy	80
3. Ownership changes	81
3.1. Description of the undertakings involved	81
3.2. The substance of concentrations	81
4. Offshore wind energy in Poland	81
5. Support scheme	83
6. Feasibilities for micro-installations of wind farms	84
7. SWOT analysis for wind energy sector in Poland	84
8. Conclusion	85
Acknowledgments	86
References	86

1. Introduction

Wind energy is a technology for the production of renewable energy resources with the largest resources and the largest market potential. It is an attractive but still insufficiently used area of economic activity. According to the “Poland’s National Renewable Energy Action Plan” (NREAP) [1], the development of renewable

energy in Poland is based on the principle of rational use of existing energy resources. It is one of the objectives of climate and energy package, whose essential element is the Directive 2009/28/EC [2]. The Directive prescribes that each Member State shall ensure that the share of energy from renewable sources in gross final energy consumption in 2020 will reach at least its national overall target for the share of energy from renewable sources. The goal for Poland is set at 15%. Despite the difficult and unstable legal environment, wind energy in Poland is the fastest growing type of renewable energy sources [3]. In 2010 and 2011 the wind energy development in Poland also outperformed the NREAP’s forecasts.

* Corresponding author. Tel.: +48 56 6114124; fax: +48 56 6545523.

E-mail addresses: rawa@law.umk.pl (A. Brzezińska-Rawa), justynagozdziewicz@interia.pl (J. Goździewicz-Biechońska).

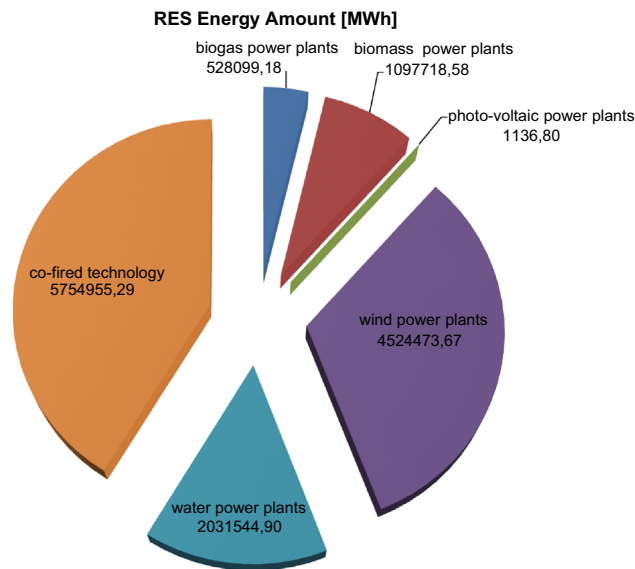


Fig. 1. RES energy produced in Poland in 2012 by types of sources.
Source: own compilation based on data from the Energy Regulatory Office 2013.

In 2012 gross electricity production reached around 160 TWh. Due to significant reserves of coal and lignite in Poland, the vast majority of production derived from conventional thermal sources. Most of the electricity was generated in thermal power plants including coal and lignite. However, comparing to the previous year, a significant increase in electricity production from renewable sources (mainly wind) is noticeable (see Fig. 1). The amount of energy produced from renewable sources in 2012 reached 2.52% of the total electricity production [4] and amounted to 13,937,928.422 MWh. This result (as of May 30, 2013) is confirmed by the number of certificates of origin issued by the President of the ERO pursuant to the Act – Energy Law [5].

The wind energy sector has a significant share of this fast-paced development of renewable energy sources in Poland. In recent years some significant developments, mainly related to the legal conditions, have occurred on the market. They may be signs of future trends and can significantly influence the situation on the wind energy market in Poland. These include in particular: recently initiated changes in the ownership structure of the wind energy market, changes in maritime law abolishing formal barriers to offshore projects, and the last events and trends on the green certificate market. Therefore, an interesting question arises: how will these transformations affect the development of the wind energy sector in Poland? The purpose of this paper is to analyze these recent transformations and new aspects and depict them in a broader context of the specific characteristics of the wind energy market in Poland. Moreover, recently completed developments of the market will be indicated and the significance of these changes for the development of wind energy in Poland will be determined. The period taken into consideration started at the beginning of 2012, and some noticeable amounts of facts and data come from the last three months.

2. The growth of investments in wind energy

According to research on technical potential, Poland has favorable conditions for the development of wind energy [7]. The most attractive areas include the Baltic Sea coast and coastal belt, the middle and northern part of Wielkopolskie and Mazowieckie Voivodships and southern mountainous regions [6]. Most of the biggest wind farms are situated in these regions. It should be

mentioned that 32% of the country belongs to the Natura 2000 protected areas which are concentrated in the regions with high wind potential. Although wind power locations are not excluded in those areas, they require additional environmental impact evaluations that can result in refusals or delays. It creates an important barrier to the installation of wind farms in these areas.

According to the EU's goals and obligations with regard to the environmental protection for an EU member since 2004, Poland's 15% of energy shall come from renewable energy sources by 2020. That results in great demand for investments in wind energy, which is the fastest growing type of renewable energy sources. In 2012, the level of new wind farms installed capacity has increased by about 880 MW, compared to 2011 (as of 30 May 2013 under licenses granted by the President of ERO) (see Fig. 2). The growth in wind power plants capacity was the largest of all renewable energy sources [4]. As a result, in 2012, Poland (with 8% of all new wind power capacity) was among the European leaders in wind energy installations (following Germany – 21%, UK – 16%, Italy – 11%, Romania – 8%). However, in terms of global installed capacity the leaders are Germany (30% of total wind power capacity in the European Union), Spain (22%), the UK (8%), Italy (8%) and France (7%) [8].

It follows that despite the existing barriers and limitations the pace of the development of the wind energy sector in Poland has accelerated in recent years. Although wind energy in Poland is still at an early stage of development, its potential is noticeable. In 2012 Poland was ranked the 10th most suitable location for wind power projects in the world by Ernst & Young ranking of wind energy potential [9]. Moreover, Poland is indicated as a country having the most mature wind market in the central and eastern European region [10].

The analysis of the wind farms developments finished last year shows that the investments in new wind farms can be divided into two groups according to the source of funding. The first category is a strictly commercial investment, like Rymanów wind farm, Podkarpackie Voivodship which was open in June 2013. The wind farm has a capacity of 26 MW, consists of 13 turbines and can produce 61 GWh of energy per year. The construction of this farm started in November 2011 and lasted until April 2013. The farm belongs to IKEA Retail Ltd. which owns two other farms in Poland located near the town of Bukowsko and Łęki and have a total capacity of 28 MW (14 turbines). All three wind farms have a total power of 54 MW and can generate power at the level of 135 GWh per year [11].

The second category of investments are the wind farms build with financial support from the EU. The example of such a wind farm is the farm in Golice (Lubuskie Voivodship) which consists of 19 wind turbines and has a total power of 38 MW and its expected generation of electricity is more than 80 GWh per year. In July 2013, the farm received 40 million PLN of financial support from

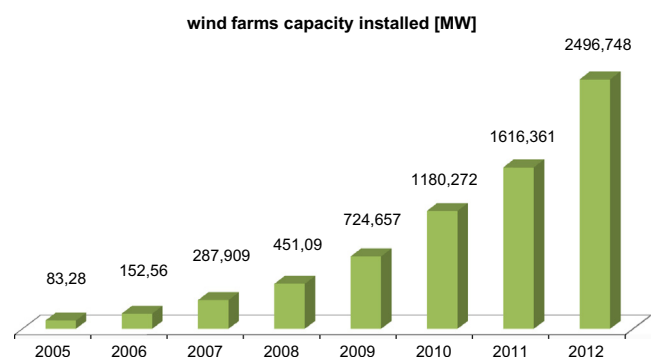


Fig. 2. Installed wind power capacity in Poland, years 2005–2012.
Source: own compilation based on data from the Energy Regulatory Office 2013.

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