



## **CHOSEN PROBLEMS OF WIND FARMS LOCALIZATION IN LIGHT OF NEW LAW ON INVESTMENTS CONCERNING WIND POWER STATIONS**

***Leszek Dawid***

*Koszalin University of Technology*

### ***Abstract***

Percentage of wind energy production in Poland increases every year. In 2009 it amounted to 0.55%, while in 2014 it was already 4.53%. Localization and construction of wind farms must meet many conditions defined in regulations being in force in this field, they still arouse a lot of controversy. Main reasons are their negative impact on landscape, agri-tourism, land value, human health, nature and others. Every such investment has both positive and negative influence on the neighbourhood, and its development. It gives an income to communes' budgets through taxes, to landowners through grounds lease or sale, creates new workplaces during construction and then operation of devices. It also leads to modernization and repair local routes, electrical grids and others .

The aim of this paper is to present chosen problems connected to the localization of wind farms. The research focuses on regulations concerning the wind farms localization, its procedures, calculation of taxes for communes, incomes for landowners on whose grounds the wind turbines were built, and others, in the context of the new law i.e. Act of 20 May 2016 on Wind Energy Investments.

**Key words:** wind farms, law, location, taxes

## INTRODUCTION

Percentage of wind energy production in Poland increases every year. In 2009 it amounted to 0.55%, while in 2014 it was already 4.53% (Sekściński 2015). Localization and construction of wind farms must meet many conditions defined in many regulations concerning, inter alia, protection of environment, health, agricultural and forest grounds as well as spatial planning and land development. However, localization and construction of wind farms arouse a lot of controversy. According to numerous publications (e.g. Dyląg 2014, Gospodarka Morska 2013, Hrynkiewicz 2014, iSokolka.eu 2015, NIK 2014, 2016) wind farms have a negative impact on a landscape, land value and properties development (mainly single-family residential buildings). Business activities are also endangered, especially when it comes to agritourism and property dealing; in the most extreme cases, wind farms construction may make selling the real estate impossible. Wind turbines create noise disturbances that may be detrimental to human health, similarly as shadow flickering caused by their rotation. What is more, though wind energy is non-polluting, wind farms may pose threat to wildlife, especially to birds dying in the contact with turbines, and to the underground habitat that is disturbed by the large-scale construction. But, such an investment in the wind energy has also some advantages. It gives an income to communes' budgets through taxes and to landowners through grounds lease or sale, it creates new workplaces during construction and then operation of devices. It also leads to modernization and repair local routes, electrical grids and others. Income taxes obtained from wind farms localization are significant, therefore authorities of many Polish communes, who possess suitable land, decide on such an investment. The new law, however, i.e. Act of 20 May 2016 on Wind Energy Investments considerably limit the construction of wind farms.

The aim of this paper is to present chosen problems connected to the localization of wind farms. The research focuses on regulations concerning wind farms localization, relevant procedures, calculation of taxes for communes, incomes for landowners on whose grounds the wind turbines were built, and others in the context of the new law (Act 2016) i.e. Act of 20 May 2016 on Wind Energy Investments.

The research was done based on an analysis of acts, regulations, Civil Code, the subject matter literature, information from websites. The techniques of qualitative analysis of documents, and descriptive analysis were used. The base for choice of the analysis method was the type of gathered information.

## **REGULATIONS ON WIND FARMS LOCALIZATION BEFORE 16<sup>TH</sup> JULY 2016**

Localization and construction of wind farms must have met conditions described in regulations concerning different fields such as protection of environment, nature, and agricultural and forest lands, as well as spatial planning and plan development, building law and others. The most important regulations are listed below:

- Act of 14 June 1960 – The Code of Administrative Procedure (Journal of Laws of 2013, item 267 as amended);
- Act of 14 March 1985 on State Sanitary Inspection (Journal of Laws of 2011, No. 212, item 1263 as amended);
- Local Self-Government Act of 8 March 1990 (Journal of Laws of 2013, item 594 as amended)
- Local Referendum Act of 15 September 2000 (Journal of Laws of 2000, No. 88, item 985) – where art. 2 par. 1 states that local referendum can be organised in important cases concerning all commune’s inhabitants
- Act of 7 July 1994 – The Building Law (Journal of Laws of 2013, item 1409 as amended)
- Act of 3 February 1995 on the Protection of Agricultural and Forests Land (Journal of Laws of 2013, item 1205 as amended)
- Act of 10 April 1997 – The Energy Law (Journal of Laws of 2012, item 1059 as amended)
- Act of 27 March 2003 on Spatial Planning and Land Development (Journal of Laws of 2012, No. 647, item 951 as amended)
- Nature Conservation Act of 16 April 2004 (Journal of Laws of 2013, item 627 as amended)
- Act of 3 October 2008 on the release of information about environment and its protection, participation of the public in the environmental protection and assessments of the environmental impact (Journal of Laws of 2013, item 1235, as amended)
- Act of 8 March 2013 amending the act on the Protection of Agricultural and Forest Lands (Journal of Laws of 2013, item 503 as amended)
- Regulation of the Minister of Environment of 9 September 2002 concerning ecophysiology studies (Journal of Laws of 2002, No. 155, item 1298)
- Regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant effects on the environment (Journal of Laws of 2010, No. 213, item 1397, as amended)

- Constitution of the Republic of Poland of 2nd April 1997 (Journal of Laws of 1997, No. 78, item 483) – where art. 74 par. 2 states that the environment protection is a duty of public authorities

Pursuant to art. 7 par. 2 pt. 1 of Act on the Protection of Agricultural and Forests Land (Act 1995) and to Act amending the act on the Protection of Agricultural and Forest Lands (Act 2013), the Minister of Agriculture and Rural Development is the body that may agree to change the destination of any usable agricultural land of grade 1, 2 or 3 to non-rural one. To plan the localization of wind farms or other objects connected to renewable energy production on any land, it is also necessary to change its destination in Local Zoning Plan (Decision 2014). Investors can apply for planning permission for wind turbines installation only when a commune's council enacts an ordinance on Local Zoning Plan, where rural lands destined to non-rural purposes are indicated, and those purposes must include investments e.g. wind power stations. When it comes to plan the destination of a plot to wind farm localization, the mayor is the responsible authority.

Localization of wind farms must be also verified, and their potential negative impact must be assessed, according to the Act on Providing Information on the Environment and Environmental Protection, Public Participation in Environmental Protection and on Environmental Impact Assessment (Act 2008). Pursuant to art. 5 and 30, it is necessary for administrative authorities that make decisions and prepare documents concerning such a construction, to give the community the opportunity to participate in the decision-making process, respectively before making such a decision or before its change.

In the Act on Spatial Planning and Land Development (Act 2003), funding of spatial planning documentation connected to the wind farm construction is determined as non-public purpose, therefore any change to Local Zoning Plan or enactment of a new one causes significant expenses for the commune. In the art. 2 par. 2 values and requirements of protection of environment, human health and safety, and property connected to investments are indicated.

Art. 55 of The Building Law (Act 1994) states that the final permission decision on using the wind power station takes place after the report of construction completion. There are various interpretations regarding qualification of wind turbines to the relevant building category. Lack of such a category means different interpretations on commissioning such an object by district building inspectors. They control building construction elements such as foundation, tower and accompanying infrastructure.

The Nature Conservation Act (Nature Conservation Act 2004) excludes the possibility of locating the wind farms on the area of National Parks and nature reserves. Nature 2000 areas are especially protected. The Directorate for Environmental Protection and the State Sanitary Inspection, basing on the environmental analysis, as evaluating authorities, judge the environmental conditions, and therefore possibility to locate the wind farms on the analysed area.

## **WIND FARMS LOCALIZATION PROCEDURE**

Wind farms localization depends mostly on wind conditions, environment, and available infrastructure (Podgajniak, 2015). According to Polish Wind Energy Association (Polish Wind Energy Association 2015), following localization stages can be distinguished:

1. Wind velocity analysis on heights depending on a wind turbine type and calculation of average yearly wind velocity on a given area.
2. Professional evaluation concerning:
  - the impact on the environment (environmental monitoring, public consultations);
  - the impact on electricity grid (connecting to the network, expertise, obtaining connection conditions, connection agreement);
  - other agreements required by law (e.g. appropriate minister's consent when usable agricultural land of grade 1, 2 or 3 is concerned);
3. Obtaining the rights to the development area;
4. Obtaining the building permit (preparing the Local Zoning Plan by a mayor, receiving an environmental decision, geological survey, building permit design).

## **TAX CALCULATION PROCEDURE**

Basing on the Act of 12 January 1991 on Local Taxes and Charges (Act 1991), when it comes to wind farms, the following taxes are being paid:

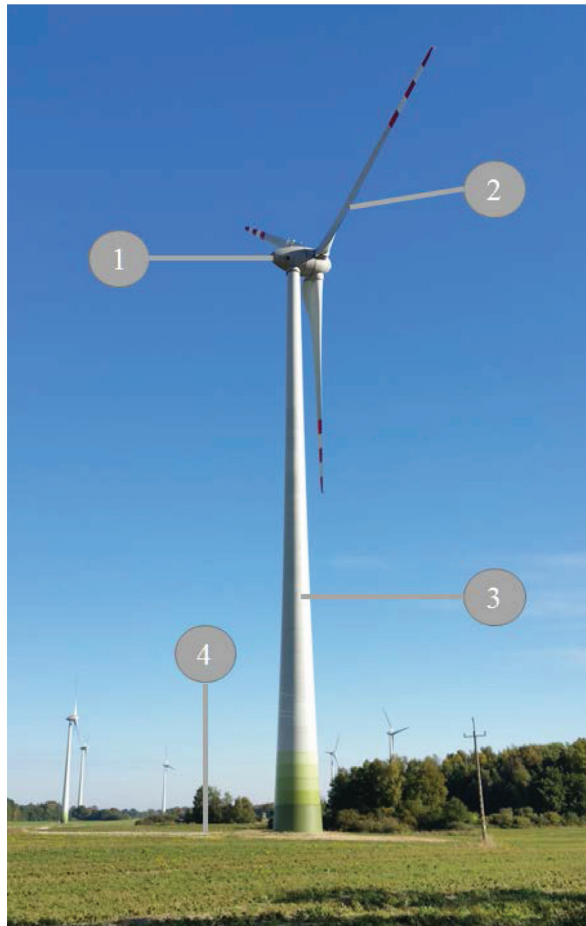
- **Property tax related to the ground**
  - one wind turbine usually takes up an area of around 400 m<sup>2</sup> (foundation 20 m long by 20 m wide). In 2015 the Minister of Finance decided, that the commune's tax rate cannot be higher than 0.90 PLN·m<sup>-2</sup>.
  - new access roads (if they qualify to be taxed, as they may be described as roads giving access to farmlands. In that case, farm tax is calculated): average width of 4 m x road length.
- **Property tax related to the non-building structure or building facilities: 2% of the value**

In the Act of 12 January 1991 on Local Taxes and Charges (Act 1991), in art. 1a par. 1 pkt. 2, a non-building structure is defined, within the meaning of the Building Law, as a work other than a building or a landscaping feature, as well as a building facility, within the meaning of the Building Law that is connected with a work and allows for the use of that work for its intended purpose. In the Building Law (Act 1994) art. 3 defines:

- a work – that shall be understood as a building with the associated building services and technical equipment, or a structure that constitutes an independent unit in terms of its technical parameters and usability, with the associated building services and technical equipment, or landscaping features;
- a building – that shall be understood as a work that is permanently attached to the ground and separated from the space with building envelope elements, and has foundations and a roof;
- a structure – that shall be understood as a work other than a building or a landscaping feature, such as: linear structures, airports, bridges, viaducts, trestle bridges, tunnels, culverts, technical networks, free-standing antenna masts, free-standing advertising facilities permanently attached to the ground, earthen structures, defence fortifications, protection structures, hydro-technical structures, reservoirs, free-standing industrial installations or technical facilities, wastewater treatment plants, waste dumping sites, water treatment plants, retaining structures, underground and overground pedestrian passages, utility networks, sports structures, cemeteries, monuments, as well as structural parts of technical facilities (boilers, industrial furnaces, wind turbines, nuclear power plants, and other facilities), and foundations of machines and facilities which constitute, in technical terms, separate parts of objects forming a usable whole;
- building facilities – that shall be understood as the technical facilities connected with a work that allow for the use of that work for its intended purpose, such as service connections and installations, including those used for the treatment or collection of wastewater, as well as road passages, fencing, parking areas, and bin storage areas.

A wind turbine is made up of the following components (Figure 1): the foundation that anchors the wind turbine to the ground, the tower carrying the weight of the nacelle and the rotor blades, and also absorbing the huge static loads caused by the varying power of the wind, and elements attached to the tower, that is the rotor and rotor blades, and the nacelle holding all the turbine steering and supporting machinery. Entrepreneurs investing in wind power stations, and commune's bodies argued if it is legal to tax not only structural parts i.e. foundation and tower, but also the whole technical and technological equipment (Drogowska, 2010). Per art. 1a par. 1 of the Act on Local Taxes and Charges (Act, 1991) as well as art. 3 pt. 3 and pt. 9 of the Building Law (Act 1994), only non-building structures (including building facilities) are taxed with the property tax, so in this case only structural parts of wind power stations i.e. foundation and tower. Other remaining elements, as the technical and technological equipment, do not fit in the definition of a non-building structure or building facilities, therefore there

is no basis to tax them with property tax. Decisions in court and administrative proceedings (Decision of Voivodship Administrative Court in Rzeszów of 11 August 2010) indicate that firstly, devices equipping a wind power station such as rotor and rotor blades, gear box, controller, generator, electric switchboard, alarm installation, and remote control installation are not non-building structures or building facilities, therefore cannot be taxed. Secondly, the decisions highlighted the fact that the Building Law (Act 1994) in that time explicitly divide a wind turbine into structural part and non-structural (technical) part. Finally, the Constitutional Tribunal confirmed all these decisions, giving the case for entrepreneurs investing in wind power stations (Derski 2011).



**Figure 1.** Basic elements of a wind turbine. 1) Nacelle. 2) Hub with rotor blades. 3) Tower. 4) Foundation. Source: own elaboration

The communes' tax income from one wind turbine localization amounts to over 60 thousand PLN (NIP 2014, NOWa Gazeta Biłgorajska 2015). The income of the owners of land used for wind farm localization is also significant. For example, in Nowy Dwór commune Eko Energia company paid farmers around 4 thousand PLN a year per one wind turbine (iSokolka.eu 2015).

## **WIND FARMS LOCALIZATION IN LIGHT OF ACT OF 20 MAY 2016 ON WIND ENERGY INVESTMENTS**

The Act of 20 May 2016 on Wind Energy Investments came into force on 16<sup>th</sup> June 2016. It introduced many changes, including ones concerning conditions of wind farm localization. The act determines procedure of localization and construction of wind farms as well as conditions of wind farms localization in the neighbourhood of existing or planned residential development. The act does not refer to investments realised and exploited on maritime areas. Per art. 3 of the act (Act 2016) the location of the wind farm must be designated in the Local Zoning Plan. According to art. 4 par. 1 of this act, the distance between the wind turbine and households or buildings with mixed purpose that includes housing purpose should be equal or higher than ten times the total height of the wind turbine measured from the ground level to the highest point of the turbine, including technical equipment, especially hub with rotor blades. The act also introduces a few changes in the Building Law (Act 1994). The most important ones are the following: deletion of dividing a wind turbine into a structural part and non-structural part, assignation the authority of giving permits for wind turbine construction from mayor to province governor, indication that a wind turbine falls into the XXIX category of building objects and therefore requires a final decision containing a permit to use it. Keeping distance is also required when locating and constructing the wind farm in the proximity of forms of environmental protection (Dawid and Deska 2014a,b) per art. 6 par. 1 pkt. 1-3 and 5 of the Environment Protection Law (Act 2001).

## **SUMMARY AND CONCLUSIONS**

Consequences of introducing the Act on Wind Energy Investments (Act 2016) are quite broad. It will impact both owners of properties located in the neighbourhood of functioning wind farms and Renewable Energy industry in its broadest sense. In this act grounds in the distance from a wind turbine equal or smaller than ten times the total height of the wind turbine cannot have housing purposes. Previously, the mentioned distance amounted to around 500 m. Estimated number of wind turbines in Poland amounts to around 3 thousand,



and local zoning plans that have already come into force, establish another few thousands (Spychalski 2016), what in a sense restricts household development. Incomes of communes and landowners connected to wind farms localization also have been significantly limited. Mentioned regulations (localization restriction, compulsory local zoning plan, building use permits) can lead to suppression of Renewable Energy industry development. Perhaps investments of this branch will relocate to maritime areas.

Opponents of wind farms localization in their communes are content with the restrictions included in the new act (Wyborcza.pl 2012, Tyczyńska 2015). Their arguments are wind farms' negative impact on landscape, agritourism, land value, human health (noise, shadow flickering caused by rotating turbines), nature (especially on birds dying in the contact with turbines) and others.

## REFERENCES

Act of 14 June 1960 – The Code of Administrative Procedure (Journal of Laws of 2013, item 267 as amended);

Act of 14 March 1985 on State Sanitary Inspection (Journal of Laws of 2011, No. 212, item 1263 as amended);

Act of 12 January 1991 on Local Taxes and Charges (Journal of Laws of 2010, No. 95, item 613 as amended)

Act of 7 July 1994 – The Building Law (Journal of Laws of 2013, item 1409 as amended)

Act of 3 February 1995 on the Protection of Agricultural and Forests Land (Journal of Laws of 2013, item 1205 as amended)

Act of 10 April 1997 – The Energy Law (Journal of Laws of 2012, item 1059 as amended)

Act of 27 April 2001 – The Environment Protection Law (Journal of Laws of 2013, item 1232 as amended)

Act of 27 March 2003 on Spatial Planning and Land Development (Journal of Laws of 2012, No. 647, item 951 as amended)

Act of 3 October 2008 on Providing Information on the Environment and Environmental Protection, Public Participation in Environmental Protection and on Environmental Impact Assessment (Journal of Laws of 2013, item 1235, as amended)

Act of 8 March 2013 amending the act on the Protection of Agricultural and Forest Lands (Journal of Laws of 2013, item 503 as amended)

Act of 20 May 2016 on Wind Energy Investments (Journal of Laws of 2016, item 961)

Constitution of the Republic of Poland of 2<sup>nd</sup> April 1997 (Journal of Laws of 1997, No. 78, item 483)

Dawid, L., Deska, K. (2014a). *Wybrane problemy rejestracji i ewidencji użytków ekologicznych*. Infrastruktura i Ekologia Terenów Wiejskich, II/2/2014: 389-398

Dawid, L., Deska, K. (2014b). *Porównanie i ocena kompletności danych o użytkach ekologicznych w wybranych rejestrach na przykładzie powiatu koszalińskiego i miasta Koszalin*. Infrastruktura i Ekologia Terenów Wiejskich, II/2/2014: 453-465

Decision of Voivodship Administrative Court in Rzeszów of 11 August 2010, I SA/Rz 340/10. From: [orzeczenia.nsa.gov.pl](http://orzeczenia.nsa.gov.pl)

Derski, B. (2011). *Wyrok TK korzystny dla wiatraków*. From: <http://cire.pl/item,56903,1,0,0,0,0,wyrok-tk-korzystny-dla-wiatrakow.html> Access: 10.10.2016

Drogowska, K. (2010). *Czy gminy rzeczywiście dużo zyskują na wiatrakach?* From: [http://wroclaw.wyborcza.pl/wroclaw/1,35771,7585491,Czy\\_gminy\\_rzeczywiscie\\_duzo\\_zyskuja\\_na\\_wiatrakach\\_.html](http://wroclaw.wyborcza.pl/wroclaw/1,35771,7585491,Czy_gminy_rzeczywiscie_duzo_zyskuja_na_wiatrakach_.html). Access: 10.10.2016

Dyląg, B. (2014). *Trudno się dziwić biednym samorządom, że stawiają wiatraki*. From: <http://www.portalsamorzadowy.pl/inwestycje/trudno-sie-dziwic-biednym-samorzadom-ze-stawiaja-wiatraki,56095.html>. Access: 10.10.2016

Gospodarka Morska. (2013). *Do 2016 r. ma powstać 11 farm wiatrowych o mocy 1576 MW*. From: <http://www.gospodarkamorska.pl/wydarzenia/do-2016-r-ma-powstac-11-farm-wiatrowych-o-mocy-1576-mw.html>. Access: 10.10.2015

Hryniewicz, J. (2014). *Wpływ lokowania elektrowni wiatrowych na wartość nieruchomości*. *Kwartalnik Rzeczoznawca Majątkowy*, 3: 32-40.

iSokolka.eu (2015). *Gmina chce wiatraków*. From: <http://isokolka.eu/nowy-dwor/11778-gmina-chce-trzydziestu-szesciu-wiatrakow>. Access: 10.10.2015

Local Referendum Act of 15 September 2000 (Journal of Laws of 2000, No. 88, item 985)

Local Self-Government Act of 8 March 1990 (Journal of Laws of 2013, item 594 as amended)

Nature Conservation Act of 16 April 2004 (Journal of Laws of 2013, item 627 as amended)

NIK (2014). *Lokalizacja i budowa lądowych farm wiatrowych*. No. 131/2014/P/13/189/LWR

NIK (2016). *Elektrownie wiatrowe w świetle kontroli NIK*. No. 47/2016/D/15/502/KIN

NOWa Gazeta Biłgorajska. (2015). *Kolejne gminy z wiatrakami?* From: <http://www.gazetabilgoraj.pl/z-nowej-gazety/ps-34664-kolejne-gminy-z-wiatrakami/> Access: 10.10.2016

Podgajniak, T. (2015). *Problemy i bariery rozwoju energetyki wiatrowej w Polsce – inwestycyjny tor przeszkód*. *Rozwój energetyki wiatrowej w Polsce – problemy i bariery*. 70<sup>th</sup> Meeting of Forum “Energia – Efekt – Środowisko” NFOSiGW, 25<sup>th</sup> February 2015

Polish Wind Energy Association (2015). *Energetyka wiatrowa. Fakty*. From: <http://psew.pl/DWDR/broszura.pdf>. Access: 30.07.2016

Regulation of the Minister of Environment of 9 September 2002 concerning ecophysiology studies (Journal of Laws of 2002, No. 155, item 1298)

Regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant effects on the environment (Journal of Laws of 2010, No. 213, item 1397, as amended)

Sekściński, A. (2015). *Rozwój energetyki wiatrowej w Polsce – problemy i bariery*. 70<sup>th</sup> Meeting of Forum „Energia – Efekt – Środowisko” NFOŚiGW, 25<sup>th</sup> February 2015

Spychalski, M. (2016). *Ustawa wiatrakowa mocno ograniczy zabudowę mieszkaniową*. From: <http://biznesalert.pl/spychalski-ustawa-wiatrakowa-wprowadzi-zakaz-zabudowy-mieszkaniowej-na-znaczacym-terenie-kraju/>. Access: 30.07.2016

Tyczyńska, A. (2015). *Mieszkańcy Czarnocina protestują przeciwko wiatrakom*. From: <http://piotrkowtrybunalski.naszemiasto.pl/artykul/mieszkanicy-czarnocina-protestuja-przeciwko-wiatrakom,3346051,artgal,t,id,tm.html>. Access: 30.07.2016

Wyborcza.pl (2012). *Protesty o wiatraki*. From: <http://info.wyborcza.pl/temat/wyborcza/protesty+o+wiatraki>. Access: 30.07.2016

Leszek Dawid  
Chair of Geodesy, Faculty of Civil Engineering, Environmental and Geodetic Sciences  
Koszalin University of Technology  
+48 94 34 86 718  
[leszek.dawid@tu.koszalin.pl](mailto:leszek.dawid@tu.koszalin.pl)

Received: 18.04.2017

Accepted: 02.10.2017