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# Renewable energy sources in spatial planning

**Abstract:** The article addresses the problem of taking renewable energy sources into account in spatial planning in Poland, especially in planning documents adopted at the level of municipalities, namely the study of conditions and directions of spatial development (after changes the structure plan) and the land use plan. It presents the conditions for specifying the location of devices (installations) based on renewable energy sources, as specified in the Polish Act on Spatial Planning and Development of 27 March 2003, as well as the fundamental principles of taking renewable energy sources into account in the planning documents adopted by municipalities.

**Keywords:** renewable energy sources, structure plan, land use plan, energy transition (green transition).

## Introduction

This article addresses selected fundamental issues about the way in which renewable energy sources are taken into account in the Polish system of spatial planning.

One of the principal aspects of the energy transition (green transition) process that is taking place globally, including in Europe and in Poland, is moving in various fields to producing and using energy from renewable sources. A typical manifestation of the attempt to implement this transition is the European Green Deal, an initiative of the European Commission intended to commence a multidimensional process of the Union moving towards a climate-neutral economy.<sup>1</sup> The foundations of this initiative include Directive (EU) 2018/2001 of the European

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<sup>1</sup> For more, see: A. Sikora, "Europejski Zielony Ład – wyzwania zielonej transformacji," *Europejski Przegląd Sądowy* 197, 2022, no. 2, p. 4 ff.

Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.<sup>2</sup> According to Article 2(1) of that Directive, “energy from renewable sources” or “renewable energy” means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tidal, wave and other oceanic energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas. The Polish statutory definition of a renewable source of energy is found in Article 2, item 22 of the Act on Renewable Energy Sources of 20 February 2015:<sup>3</sup> “renewable energy sources” mean renewable non-fossil sources of energy, including wind, solar, aerothermal, geothermal, and hydrothermal energy, wave, current and tidal energy, and energy obtained from biomass, biogas, agricultural biogas, and bioliquids.

## 1. Renewable energy sources in spatial planning

In Poland, spatial planning is primarily based on documents adopted in municipalities, which are their study of conditions and directions of spatial development (hereinafter: the “study”) and the land use plan (hereinafter: the “land use plan”).<sup>4</sup> The Act of July 2023 amending the Act on Spatial Planning and Development and certain other acts<sup>5</sup> came into effect on 24 September 2023. This act eliminates the study and replaces it with the structure plan. The studies will remain in force until the structure plan for a specific municipality comes into effect, but no later than 31 December 2025.

According to Article 9(1) of the Polish Act on Spatial Planning and Development of 27 March 2003,<sup>6</sup> a study is produced in order to define the municipality’s spatial policy, including the local principles of spatial development. A study is therefore an element of a municipality’s spatial policy which, on the one hand, describes the conditions for this municipality’s spatial development, and, on the other, defines the municipality’s long-term spatial policy. The comprehensive nature of this document is also confirmed by the obligation expressed in Article 9, para. 3 ASPD, to produce a structure plan for an area that lies within the administrative boundaries of the municipality. Further, Article 9, para. 5 ASPD provides that a study is not an act of local law.

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<sup>2</sup> OJ L 328/82 of 12.12.2018.

<sup>3</sup> Journal of Laws of 2022, item 1378, hereinafter: “Act on RES.”

<sup>4</sup> The general spatial planning system goes beyond the level of municipalities, as it also incorporates the land use plans of the voivodships (provinces) and the national zoning concept, which are not discussed here, as they are not of great relevance. Documents, such as the voivodship development strategy, the supra-local development strategy and the municipality development strategy, which are all taken into account when producing the structure plan and, consequently, the land use plan, indirectly apply to the spatial policy.

<sup>5</sup> Journal of Laws of 2022, item 503.

<sup>6</sup> Journal of Laws of 2022, item 503, hereinafter: the “ASPD.”

In Poland, the main and most important document regarding spatial planning is the land use plan. According to Article 15, para. 1 ASPD, it is adopted in order to specify the intended use of areas, including for public benefit investments, and to define how these areas should be developed and built up. The academic literature correctly emphasizes that “Land use plans differ significantly from planning documents and other plans produced and implemented at the higher levels of Poland’s administrative division. This is related to their high level of importance in the system of spatial planning and development. This, in turn, is a consequence of the functions and tasks land use plans are expected to perform by regulating spatial issues in a method that is simultaneously detailed and general. When examining the legal nature of a land use plan, its role as a substantive law foundation for adopting another legal act is noticeable.”<sup>7</sup> In this context, the importance of the land use plan should be emphasized as a broadly understood substantive law foundation for the decisions issued in the course of the property development process, such as the decision regarding environmental conditions or planning permission. The legislator clearly specifies in Article 14, para. 8 ASPD that a land use plan is an act of local law, which, however, does not mean that it contains only general and abstract norms like a typical generally applicable act of law.<sup>8</sup>

There is also an important relationship between the study and the land use plan, whereby the arrangements in the structure plan are binding on the municipality’s authorities when they draft land use plans (*vide* Article 9, para. 4 ASPD); that the draft of a land use plan, which consists of a text part and a graphic part, has to be produced in accordance with the provisions of the structure plan and the separate legal regulations on the area covered by the plan (*vide* Article 15, para. 1 ASPD *ab initio*); and that the municipal council adopts the land use plan once it has concluded that the plan does not breach the provisions of the structure plan (*vide* Article 20, para. 1 ASPD). The rulings of the administrative courts emphasize the assumption that a structure plan should be a flexible instrument which, while laying down a fixed framework within which local planning can be done, allows for the local conditions and needs to be taken into account to the maximum extent possible at the stage of producing the land use plans. Meanwhile, the objective of the land use plan is to add more detail to the provisions of the structure plan and not to interpret them freely or even modify them completely. The extent to which a land use plan is bound by the arrangements made in the structure plan largely depends on what the provisions of the structure plan are; this extent may vary, depending on the level of detail of these provisions. The arrangements pre-

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<sup>7</sup> P. Kwaśniak, *Plan miejscowy w systemie zagospodarowania przestrzennego*, Warszawa 2011.

<sup>8</sup> For more, see: M. Szewczyk, *Treść i forma studium uwarunkowań i kierunków zagospodarowania przestrzennego gminy oraz miejscowego planu zagospodarowania przestrzennego*, [in:] *Prawo zagospodarowania przestrzeni*, eds. Z. Leoński, M. Szewczyk, M. Kruś, Warszawa 2019, pp. 280–281.

sented in a structure plan do not need to be transposed directly onto the land use plan, but they also cannot be in conflict with them.<sup>9</sup>

Moving on to the issue of taking into account renewable energy sources in spatial planning, it should be pointed out that the objectives directly suggesting an attempt to achieve climate neutrality or green transition are not listed *expressis verbis* among the main objectives of planning and development in the Polish Act on Spatial Planning and Development. The principles on which this Act focuses, as listed in its Article 1, para. 1, are spatial order and sustainable development. Other values are specified in Article 1, para. 2; however, this list cannot be considered exhaustive. These values include, for instance, architectural and landscaping values, environmental protection requirements, including the management of waters and the protection of agricultural and forest land, the economic qualities of space, the needs of state defence and security, the needs of public interest and the needs regarding the development of technical infrastructure, including but not limited to broadband networks.

The main conditions taken into account in a study are specified in Article 10, para. 1 ASPD. They include the state of the natural environment, including the status of agricultural and forest production space, the volume and quality of water resources and requirements of protection of the environment, nature and the landscape, including the cultural landscape, the living conditions and the quality of life of the residents, including the protection of their health and the need to ensure accessibility for people with special needs, the needs and opportunities regarding the development of the municipality, considering, in particular economic, environmental and social analyses, demographic forecasts, the possibility of the municipality co-financing the construction of a transport network and technical infrastructure, as well as social infrastructure intended for the performance of the municipality's own tasks, and a list of areas to be developed, and the presence of documented mineral deposits, underground water resources and documented underground carbon dioxide storage complexes. In turn, according to Article 10, para. 2 ASPD, a study specifies in detail the directions of changes in the municipality's spatial structure and in the intended use of lands, including those arising from a landscape audit and the directions and ratios regarding the development and use of lands, including lands to be developed and areas excluded from building development, but also the directions of development of transport systems and technical infrastructure.

In the context of the study, Article 10, para. 2a ASPD directly applies to renewable energy sources. It provides that, if it is planned that areas are to be designated in the municipality where energy-producing devices based on renewable energy sources, the installed capacity of which exceeds 500 kW, are to be installed,<sup>10</sup>

<sup>9</sup> In terms of the most recent rulings, see: e.g. the judgments of the Polish Supreme Administrative Court of 14.02.2023 (II OSK 402/20) and of 13.04.2023 (II OSK 2728/21).

<sup>10</sup> The wording of Article 10, para. 2a ASPD has been changing. According to Article 5, para. 2 of the Polish Act on the amendment of the Act on renewable energy sources and certain other Acts

the study is to specify their location, unless they are free-standing photovoltaic devices the installed capacity of which is no higher than 1,000 kW and which are located on agricultural lands constituting category V, VI, and VIz arable lands or non-arable lands, as defined in the regulations published under Article 26, para. 1 of the Polish Land Surveying and Cartography Law of 17 May 1989, as well as devices other than free-standing devices.

In turn, according to Article 15, para. 2 ASPD, the following must be specified in a land use plan: 1) the intended use of areas and the lines of demarcation between areas of different intended uses or different principles of management; 2) the principles of protection and shaping of spatial order; 3) the principles of protection of the environment, nature, and the landscape; 3a) the principles of shaping the landscape; 4) the principles of protecting cultural heritage and historical artifacts, including cultural landscapes and assets of contemporary culture; 5) the requirements arising from the need to shape public spaces; 6) the principles of shaping building and land development ratios; 7) the boundaries and methods of development of areas or facilities that are subject to protection under separate regulations, mining areas, as well as areas in particular danger of flooding, landslide areas and priority landscapes specified in a landscape audit and in the voivodship's spatial development plans; 8) the detailed principles and conditions of merging and dividing properties covered by the land use plan; 9) the detailed conditions of land development and limitations of use of that land, including a prohibition of development of buildings; 10) the principles of modernization, expansion and construction of transport systems and technical infrastructure; 11) the method and timing of temporary land development, arrangement and use; 12) percentage rates on which the fee referred to in Article 36, para. 4 is based. Article 15, para. 3 ASPD specifies the elements that are defined in a land use plan "depending on needs." These elements include the boundaries of areas intended for the construction of the devices referred to in Article 10, para. 2a (namely devices producing energy using renewable energy sources with a capacity of more than 500 kW) and the boundaries of their protection zones which set restrictions on building and land development and use and are related to a significant impact of these devices on the natural environment; these areas and their protection zones are located within the area referred to in Article 10, para. 2a.

Article 15, para. 4 ASPD also refers directly to renewable energy sources in the context of the land use plan; according to this Article, a land use plan that provides for the possibility of erecting buildings also allows for the construction

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of 17 September 2021 (Journal of Laws of 2021, item 1873), the power of the devices was changed from 100 kW to 500 kW. According to Article 4, para. 1 of the Polish Act on the amendment of the Act on investments in wind farms and certain other Acts of 9 March 2023 (Journal of Laws of 2023, item 553), the obligation to specify protection zones in the structure plan that impose restrictions on building and land development and use was abolished.

of micro-installations, as defined in Article 2(19) of the Act on RES<sup>11</sup> and other installations based on renewable energy sources that are not micro-installations, which produce electricity from solar radiation, and which are not free-standing, including if the intended purpose of the land is other than production, unless the provisions of the land use plan prohibit the construction of such installations.

Based on an analysis of the above norms and in the teleological and systemic context, at least several conclusions can be drawn with regard to taking renewable energy sources into account in a study and in a land use plan.<sup>12</sup>

Firstly, taking renewable sources of energy into account is, in principle, optional both in the case of the study and the land use plan. In particular, the provisions of the ASPD do not oblige municipal authorities to include orders, prohibitions or permissions regarding the positioning of facilities producing energy from renewable sources in the study or the land use plan. The provisions of that Act support the use of devices constituting micro-installations, as defined in the Act on RES (*vide* Article 15, para. 4) in areas covered by land use plans, but do not promote the introduction of planning norms that support the production and use of energy from renewable sources in any particular way. Article 10, para. 2a ASPD cannot be interpreted as a basis for concluding that the designation of areas in the study for the construction of devices producing energy from renewable sources is obligatory. All this Article provides for is that the municipality may designate areas in each study where devices producing energy from renewable sources will be located, provided that the capacity of these devices does not exceed 500 kW.

Secondly – although this is a certain simplification – it is permissible to designate areas in the land use plan which are intended for the construction of devices that produce energy from renewable sources, the capacity of which exceeds 500 kW, provided that such areas are designated in the study. This follows from the relationship between the content of Article 10, para. 2a (which applies to the study) and Article 15, para. 3, item 3a ASPD (which applies to the land use plan).

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<sup>11</sup> According to the above definition, a micro-installation means an installation based on renewable energy sources the total installed electrical capacity of which is no greater than 50 kW, which is connected to a power grid, the nominal voltage of which is at least 110 kV or the total maximum co-generation capacity of which does not exceed 150 kW, in which the total installed electrical capacity does not exceed 50 kW.

<sup>12</sup> This article does contain a comprehensive presentation of the issue of taking renewable energy sources into account in spatial planning, focusing instead on selected fundamental aspects of this problem in the context of the legal regulations currently in force. In particular, the relationship between the concepts used in the Act on RES, in the ASPD and in planning documents are not discussed, nor are concepts such as technical infrastructure devices, installations based on renewable energy sources and the application of the concept of an installation based on renewable energy sources, which was added to the ASPD under Article 4 of the Polish Act on the amendment of the Act on renewable energy sources and certain other Acts of 19 July 2019 (Journal of Laws of 2019, item 1524), to land use plans prepared before the said amendments entered into force. The problem of specifying the intended use of specific areas in the land use plan in a manner that allows for installations to be located, which are based on renewable energy sources is not discussed either. These issues and other problems related to them remain outside the framework of this article.

Article 10, para. 2a and Article 15, para. 3, item 3a ASPD provide that the location of devices producing energy from renewable energy sources, the installed capacity of which exceeds 500 kW should be designated in the study, so that their permissible location can be subsequently specified in the land use plan, provided that such a plan is adopted;<sup>13</sup> however, this does not mean that there is an obligation to designate areas for such devices in the land use plan and this does not mean that there is no possibility to designate areas for such devices in the land use plan other than designated in the study.<sup>14</sup>

Thirdly, it should be emphasized that it is permissible, but not obligatory, to designate areas in the local plan, which are intended for the construction of devices that produce energy from renewable sources and the capacity of which does not exceed 500 kW. The legitimacy of introducing such regulations with respect to renewable energy sources may be based on documents, including studies, analyses, opinions and approvals made and issued in the course of the planning process that precedes the adoption of a study or a land use plan, especially in terms of environmental protection.

Fourthly, in the case of micro-installations, statutory regulations introduce a certain form of presumption of admissibility in a local plan that allows for the erection of buildings and, if the intended use of an area is other than production, of micro-installations and other installations based on renewable sources of energy that do not constitute a micro-installation, which produce electricity from solar energy and are not free-standing. This presumption does not rule out the possibility of introducing a prohibition on the erection of micro-installations (and other installations based on renewable energy sources) in the local plan. However, the scope of such a prohibition could be a source of disputes, especially if this were to be a general prohibition preventing the installation of such devices throughout the entire municipality.

## 2. Conclusions

In conclusion, it is worth emphasizing that the increasing popularity of micro-installations is invariably accompanied by controversies, especially with regards to larger facilities that generate more power. Doubts about hydroelectric power stations are one example of this. They produce power using the energy of water, which is a relatively inexpensive, efficient and, as is sometimes claimed, ecological solution. However, building a dam over a river will result in stopping the natural reaches of the river and, consequently, change a number of aspects of the natural environment.<sup>15</sup> It is also universally pointed out that wind farms are a source of

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<sup>13</sup> This approach was presented, for instance, in the ruling of the Polish Supreme Administrative Court of 11.01.2023 (II OSK 2619/22).

<sup>14</sup> M. Kruś, "Decyzja o warunkach zabudowy jako instrument lokalizowania farm fotowoltaicznych," [in:] *Rozprawa z decyzją o warunkach zabudowy*, ed. T. Bąkowski, Gdańsk 2022, p. 162.

<sup>15</sup> See: A. Bernatek, "Małe elektrownie wodne w systemie planowania przestrzennego w Polsce," *Inżynieria Ekologiczna* 33, 2013, pp. 7–8.

problems, as they interfere with the landscape to a large extent and are a source of noise, the impact of their electromagnetic field and the so-called shadow flicker effect.<sup>16</sup> The variety of the problems related to specific types of renewable energy sources justifies the preparation of separate analyses and the inclusion in structure plans and land use plans of separate regulations regarding renewable energy sources. This is largely being forced by separate normative regulations regarding the individual types of renewable energy sources; one example is the Polish Act on Investments in Wind Farms of 20 May 2016.<sup>17</sup> According to Article 2, para. 1 of that Act, a wind farm is an installation based on a renewable source of energy that comprises a building section, which qualifies as a structure under construction law, and technical devices, including technical elements; this installation is used to produce electricity using wind energy and the power of the installation is greater than the power of a micro-installation, as defined in Article 2, item 19 of the Act on RES. Even though an analysis of this regulation is beyond the scope of this article, it should be mentioned that it contains a number of significant norms specifying the principles of locating wind farms, including the principle of locating wind farms exclusively on the basis of a local plan, a norm imposing a specific distance between a wind farm and residential buildings, mixed-use buildings, and high voltage electrical grids, the prohibition to install wind farms in national parks, nature reserves, landscape parks and areas of Natura 2000 (as defined in the Polish Act on Nature Protection of 16 April 2004), and the norm regulating the distance between a wind farm and a national park or a nature reserve. Separate regulations regarding the procedure of drafting and adopting a land use plan that allows for the construction of wind farms have also been introduced. All of these issues, which are significant both in the practical and theoretical dimension, require further comprehensive analyses.

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<sup>16</sup> A. Fogel, "Wymagania w studium uwarunkowań i planie miejscowym lokalizacji urządzeń wytwarzających energię z odnawialnych źródeł," [in:] W. Federczyk, A. Fogel, A. Kosieradzka-Federczyk, *Prawo ochrony środowiska w procesie inwestycyjno-budowlanym*, Warszawa 2015, p. 90.

<sup>17</sup> Journal of Laws of 2021, item 724.