

SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT PROGRAM (SCOPING DOCUMENT)

1. Name (title), address, telephone, e-mail of the developer (proponent of the proposed economic activity)

PROPONENT OF THE PROPOSED ECONOMIC ACTIVITY UAB Windfarm Akmenė Two, Gedimino pr. 9, LT-01103 Vilnius, +370 521 23590, contact@uab-windfarm.com, www.uab-windfarm.com.

2. Information on the nature of the proposed activity

Planned economic activity (PEA) – UAB Windfarm Akmenė Two up to 6 wind turbines (WTs) in Akmenė district, Kruopiai ward C1 zone.

PEA location – Akmenė district, Kruopiai ward, Bambalai village.

PEA developer – UAB Windfarm Akmenė Two.

The proposed activity is listed in Appendix I to the UN Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention).

Possible alternatives of wind turbines models that are planned to be built are provided below in table.

Table 1. Wind turbines technical specifications

	Wind turbines technical specifications*					
<i>Brand</i>	Siemens Gamesa			Vestas		Enercon
<i>Model</i>	SG 5.0-145	SG 6.0-170	SG 6.0-155	V150-5.6	V162-5.6	E147-5.0
<i>Capacity (MW)**</i>	5,0	6,2	6,6	5,6	5,6	5,0
<i>Hub height (m)</i>	127,5, 157,5	115, 135	122,5	148, 166	119, 148, 166	126, 155
<i>Rotor diameter (m)</i>	145	170	155	150	162	147
<i>Total height (m)</i>	200, 230	200, 220	200	223, 241	200, 229, 247	199,5 228,5
<i>Noise emission level (dB(A))</i>	109,3	106	105	107,7	106,8	106,4

* – During the preparation of the Technical Project, the WT models can be replaced by other models without increasing the maximum parameters of WT height, rotor diameter and noise level specified in the EIA documents.

** – Capacity (MW) is preliminary indicator which will be revised during the preparation of the Technical Project.

During the PEA, WTs will be brought to the construction site, unloaded and installed with the help of special cranes. Due to the weight of the wind turbine and safety requirements, steel bars and special-purpose concrete will be used during the construction phase of a wind turbine foundation. Once the foundations are formed, the wind turbine towers, rotor, blades will be installed.

The technological process of the PEA consists of:

- electricity generation;
- transmission of generated electricity to existing electricity transmission networks.

The main components of a wind turbine are foundation, tower, rotor, generator, blades.

The foundation is the supporting element of the tower. It ensures the stability of the wind turbine and is designed to withstand all its loads.

The blades and the main wind turbine cell are mounted on top of the tower. The tower is designed so that the rotor blades are kept at the desired distance from the ground depending on the wind speed. The inside of the tower is equipped with the equipment necessary for the maintenance of the wind turbine and a lift. The towers are made of solid connecting steel pipes or structural-welded blocks of steel parts.

The stator of a wind turbine consists of a rotor and a generator. The energy of the gust of wind begins to rotate the rotor blades and thus energy is generated in the stator windings. The rotor is a single gear connected to the generator.

The rotor starts to rotate when the wind speed reaches 2.5-3.0 m/s and must be stopped when the wind speed reaches about 25 m/s (depending on the wind farm model).

The rotor is only completely stopped in an emergency or in the event of a repair. When the wind turbine is switched off, the rotor is not completely stopped - it rotates freely at low speed.

If it is necessary to stop the rotor completely, it is always started by turning the blades first and using aerodynamic resistance, and only then with the help of mechanical brakes.

After the implementation of the PEA WTs construction, it is expected that a maximum of one vehicle will service 1 wind turbine per day, so it will not make any significant changes in traffic flows.

It is planned that during and after the implementation of the PEA, local roads will be used to access wind turbines and roads may be adapted or reconstructed as required. Electricity generated by wind turbines will be transferred via the underground power cable lines.

Technical design works are expected to start from year 2021.

Only inexhaustible wind energy will be used during the implementation of the planned economic activity. The use of raw materials, chemical substances and preparations (mixtures), including hazardous substances and preparations, radioactive substances, hazardous and non-hazardous waste is not envisaged.

During the operation of the planned economic activity, the generation of hazardous, non-hazardous and radioactive waste is not expected. Small amounts of non-hazardous waste (metal and mixed construction waste) may be generated during the construction of the WTs. This waste will be stored in special containers and transported for further treatment under contracts with waste managers.

3. Information on the location of the proposed activity

PEA location - Akmenė district, Kruopiai ward Bambalai village. A map of the area where the economic activity is planned with the adjacencies is presented in the figure below.

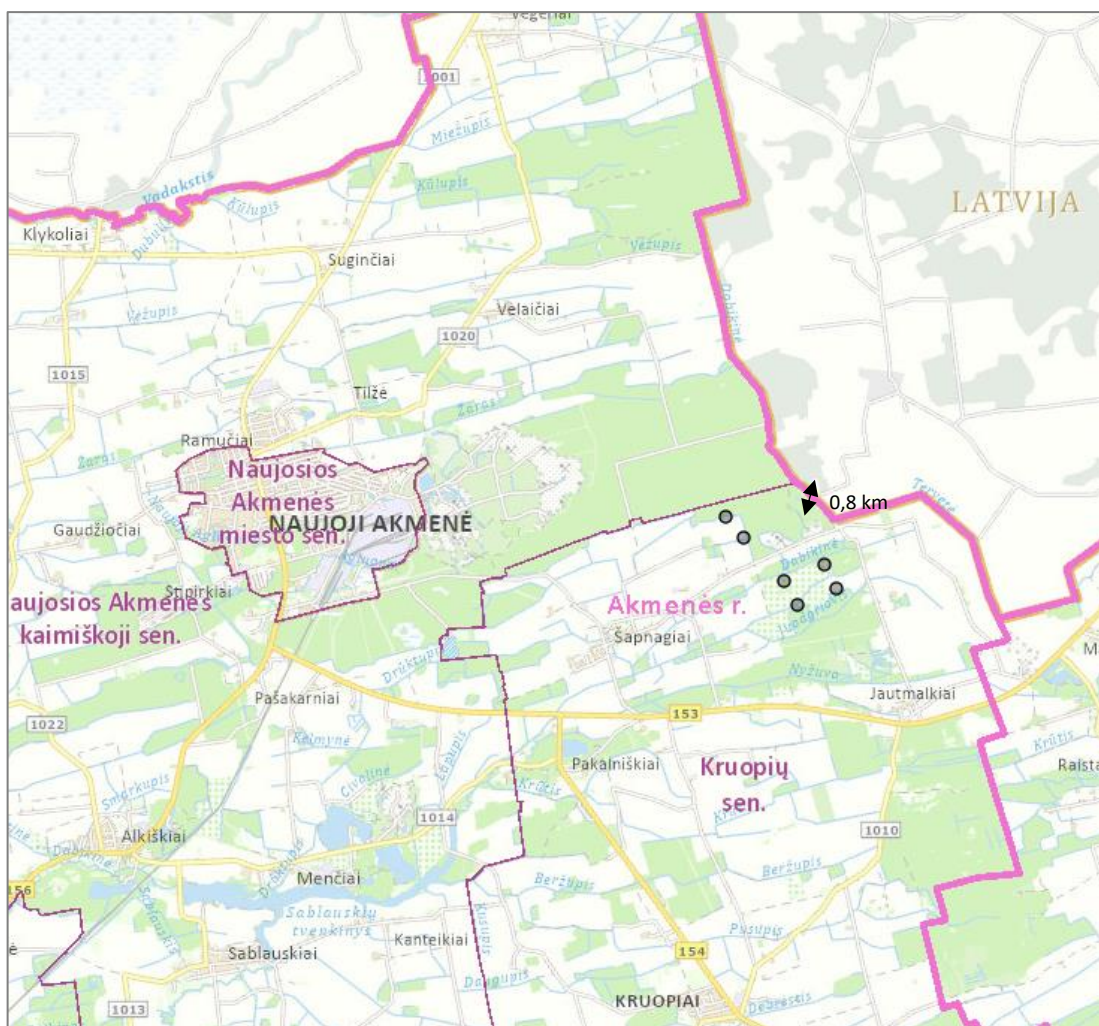


Fig. 1. Area where the economic activity is planned with adjacencies

PEA territory is approximately 5.3 km away from Naujoji Akmenė; the nearest WT is around 0.8 km away from the Lithuanian-Latvian border.

Pursuant to the solutions of the Special plan (see Annex 2) of the territory of Akmenē District approved by Akmenē District Municipality Board, the territory where wind turbines are planned to be built is designed for wind energy infrastructure.

The surroundings of the analyzed area are dominated by the nature of the sandy plains landscape, the nature of cultivation - agrarian landscape. The aesthetic potential of the landscape in terms of picturesqueness is very small.

The WT's park is planned to be built and operated on 3 land plots, at the address Kruopiai ward, Bambalai village; the purpose of use of the land plots is agricultural, the ownership is private.

There are no protected areas in the PEA territory (state reserves, national or regional parks, nature reserves, biosphere reserves). The nearest Natura 2000 sites in Latvia are the Ukru garsa territory (areas important for the protection of birds and habitats), 6.5 km north-east of the PEA site and Zvārde Woods Nature Park (areas important for the protection of habitats and birds), 12.8 km north-west of the PEA site (see figure below). Nearest residential area – Ukri village, 3.5 km north-east of the PEA site.

The proposed economic activity is far away from the above-mentioned territories, therefore it will not have any significant impact for the protected sites and species.

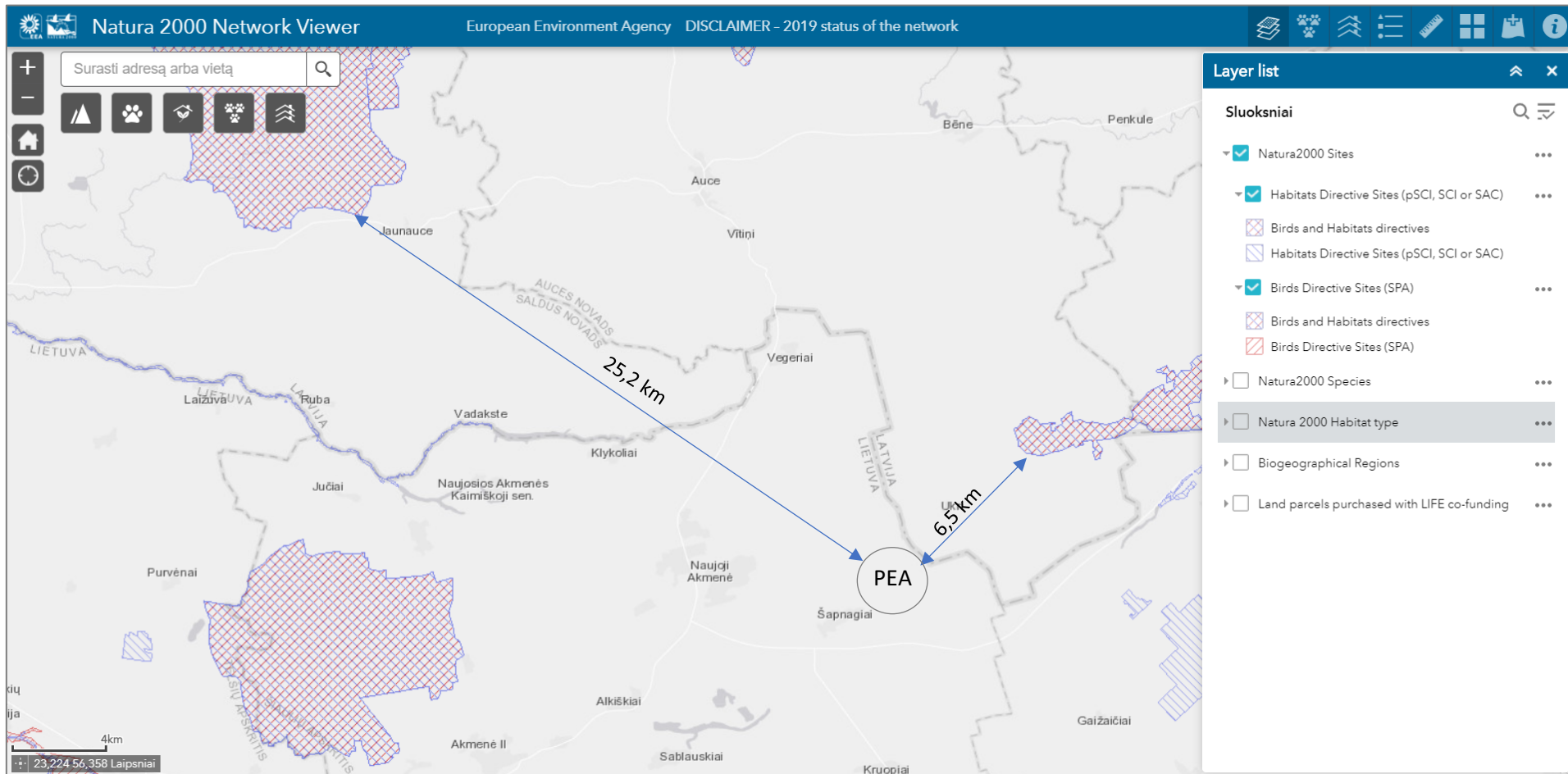


Fig. 2. Position of the proposed economic activity and the protected territories in the Republic of Latvia (<http://natura2000.eea.europa.eu/>)

4. Impact on the environment of the proposed economic activity and proposed mitigation measures

Public health

The environmental impact assessment (EIA) will assess whether the PEA is likely to have significant effects on environmental elements and public health in the following respects:

- implementation of the planned economic activity;
- extent of use of natural resources (land surface and its depths), soil, water;
- physical pollutants - noise, infrasound and low frequency sound, shading, electromagnetic radiation;
- generation, storage, use and disposal of non-hazardous waste and / or residues;
- use of raw materials;
- vulnerability of economic activities due to extreme events;
- cumulative impact with the development of economic activities in the adjacent land plots and / or territories approved in accordance with the requirements of legal acts in accordance with the solutions of the approved and valid territorial planning documents.

These aspects will be discussed in detail in the EIA report. The total impact of the planned and other economic activities performed/planned by the economic entities and the total pollution (noise, shading) will also be assessed.

The size of the planned WT's Sanitary Protection Zones (SPZs) will be determined on the basis of the noise dispersion modeling results obtained during the preparation of the EIA report.

Landscape and biodiversity

The surroundings of the analyzed area are dominated by the nature of the sandy plains landscape, the nature of cultivation - agrarian landscape. The aesthetic potential of the landscape in terms of picturesqueness is very small.

The territory of the natural framework, which includes WT's locations, according to the Special plan (see Annex 2) of Akmenė district municipality, is designated for wind turbine construction territories.

The potential impact of the PEA on the landscape and biodiversity will be addressed in the EIA report.

If significant adverse effects on the landscape and/or biodiversity are identified in the EIA report, mitigation measures will be selected.

Air

During the construction and operation of the planned economic activity, chemical pollution may occur only due to the arrival of vehicles with internal combustion engines

serving WTs. After the implementation of the PEA WTs construction, it is expected that a maximum of one vehicle will service 1 wind turbine per day. It is estimated that the amount of pollutants generated from motor vehicles will be insignificant, therefore the chemical pollution of ambient air will not be examined in detail in the EIA report.

Climate

The implementation of the PEA is expected to have an indirect positive impact on the quality of the environment and climate. Wind energy is one of the renewable energy sources and its use reduces the consumption of fossil fuels and the emissions of CO₂ and other pollutants into the ambient air. Burning fossil fuels emits many pollutants that cause a greenhouse effect in the ambient air, contribute to the climate crisis, cause smog and acid rain, destroying vegetation and oxidizing the soil. Therefore, the implementation of the PEA wind farm is expected to have an indirect positive effect on the quality of the environment and climate.

In the EIA report, the impact on the climate will be assessed in terms of the amount of energy produced by the WTs compared to a similar amount that would be produced by burning fuel.

Water

No domestic or industrial wastewater will be generated during the implementation of the PEA.

It is planned that no wind turbines will enter the coastal protection zones of water bodies and, taking into account the requirements of the Law on Special Land Use Conditions, no works with the PEA are planned in the protection zones of surface water bodies.

The EIA report will examine whether the PEA will have a negative impact on rivers and wells. Once the negative impact of the PEA on water has been identified, mitigation measures and the possibilities of their implementation will be discussed.

Soil

During the implementation of the PEA, soil-moving works will be performed only at the WTs installation sites. In this part of the plot, a layer of fertile soil will be removed and stored within the site in a designated area. The remaining excavated soil will be distributed in the territory, forming WTs service sites. The fertile soil layer will be returned to the PEA area being managed - around the service sites of the formed WTs. The layer of soil excavated during the installation of the cables will also be returned to the excavation lines - the lines will be leveled, and the lawn will be restored.

It is expected that after the leveling of the soil and the return of the fertile layer, the preservation or restoration of drainage systems, PEA will not have a negative impact on the land and soil. More detailed information will be provided in the EIA report.

Real cultural heritage values

The PEA WTs territories do not include sub-areas of protection of immovable cultural values from physical impact and will not have a negative impact on the values.

Possible cumulation of impacts, including impacts of other existing, approved and/or proposed activities

The EIA report will also examine whether the PEA may adversely affect (cause an emergency) the other existing, approved and/or proposed WTs activities.

The total impact of noise, shading, biodiversity and landscape of the planned and other existing, approved and/or proposed activities will also be assessed.

Information about planned and existing wind turbines in Akmenė district municipality is provided in Annex 1.

ANNEX 1.

Additional information about planned and existing wind turbines in
Akmenė district

Planned and existing wind turbines in Akmenė district municipality

In addition to 6 WT's in Akmenė district, Kruopiai ward, two related companies UAB Windfarm Akmenė Two and UAB Windfarm Akmenė One are planning to build up to 62 WT's in more than 2 km away from Lithuania-Latvia border in Akmenė district. The whole project is split into four EIA procedures:

- UAB Windfarm Akmenė Two up to 6 wind turbines in Akmenė district, Kruopiai ward C1 zone (the distance from the place of the proposed economic activity to the state border of the Republic of Lithuania with the Republic of Latvia is 0,8 km).
- UAB Windfarm Akmenė Two up to 32 wind turbines in Akmenė district, Kruopiai and Naujoji Akmenė Rural wards B1-B3 zones (the distance from the place of the proposed economic activity to the state border of the Republic of Lithuania with the Republic of Latvia is about 8 km);
- UAB Windfarm Akmenė Two up to 15 wind turbines in Akmenė district, Kruopiai ward C2-C4 zones (the distance from the place of the proposed economic activity to the state border of the Republic of Lithuania with the Republic of Latvia is about 4 km);
- UAB Windfarm Akmenė One up to 15 wind turbines in Akmenė district, Kruopiai ward C1 and C3 zones (the distance from the place of the proposed economic activity to the state border of the Republic of Lithuania with the Republic of Latvia is 2,1–2,3 km).

The construction and commissioning of the windfarm support the targets of the Lithuanian government to strengthen the domestic energy production and to decrease the dependency on energy imports. Moreover, UAB Windfarm Akmenė One / Akmenė Two accelerates the expansion of renewables and strongly contributes to the achievements of Lithuania's national and EU energy objectives.

Furthermore, in surrounding area there are two already built WT's and there are plans to build more WT's by other entities. All WT's that are planned to build or already exist in Akmenė district are given below in table and picture.

Table 1. Wind turbines that are planned to build or already exist in Akmenė district

Company	Total number of wind turbines	Address
Planned to build		
UAB Windfarm Akmenė One	15	Akmenė district, Kruopiai ward
UAB Windfarm Akmenė Two	53	Akmenė district, Kruopiai ward
UAB Vėjo parkai	18	Akmenė district, Kruopiai and Naujoji Akmenė Rural ward
UAB Santix	2	Akmenė district, Kruopiai ward
Existing		
UAB Ekoinversta	1	Akmenė district, Naujoji Akmenė Rural ward
UAB Vėjo technologijų projektai	1	Akmenė district, Kruopiai ward

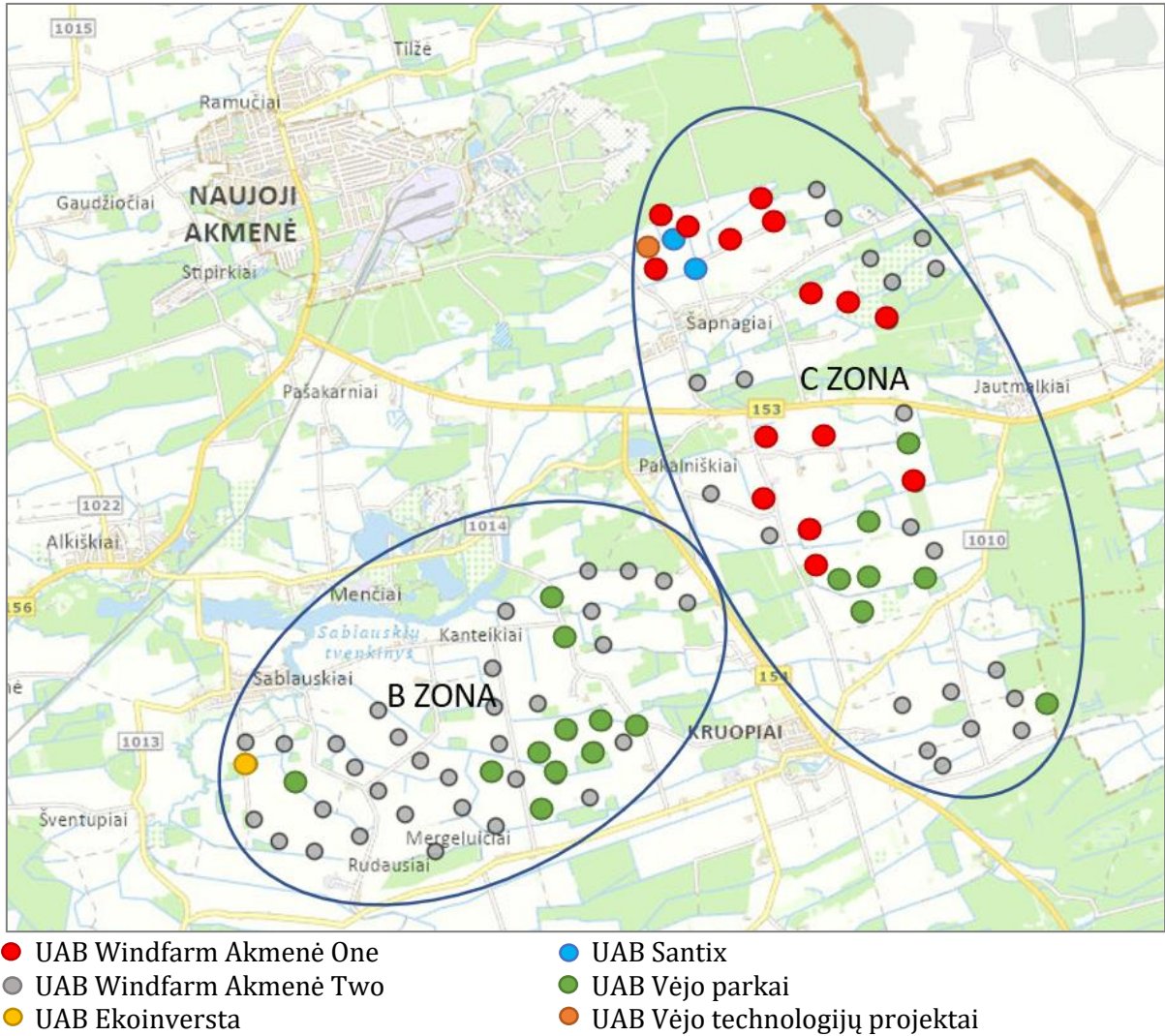


Fig. 1. Wind turbines that are planned to build or already exist in Akmenė district

ANNEX 2.

Special plan for the location of wind farms in the territory of Akmenė district municipality

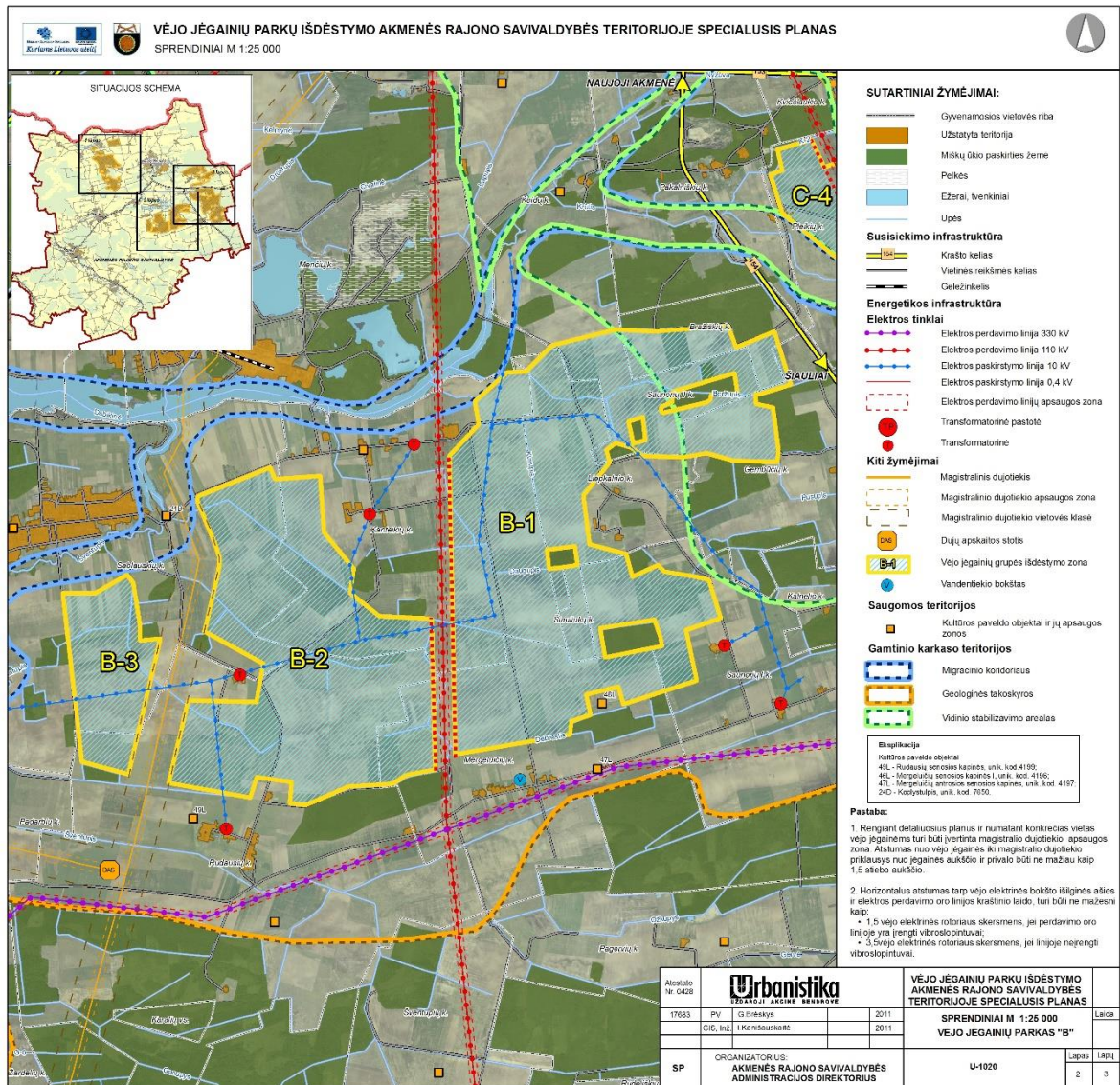


Fig. 1. B zone in the Special plan for the location of wind farms in the territory of Akmenė district municipality

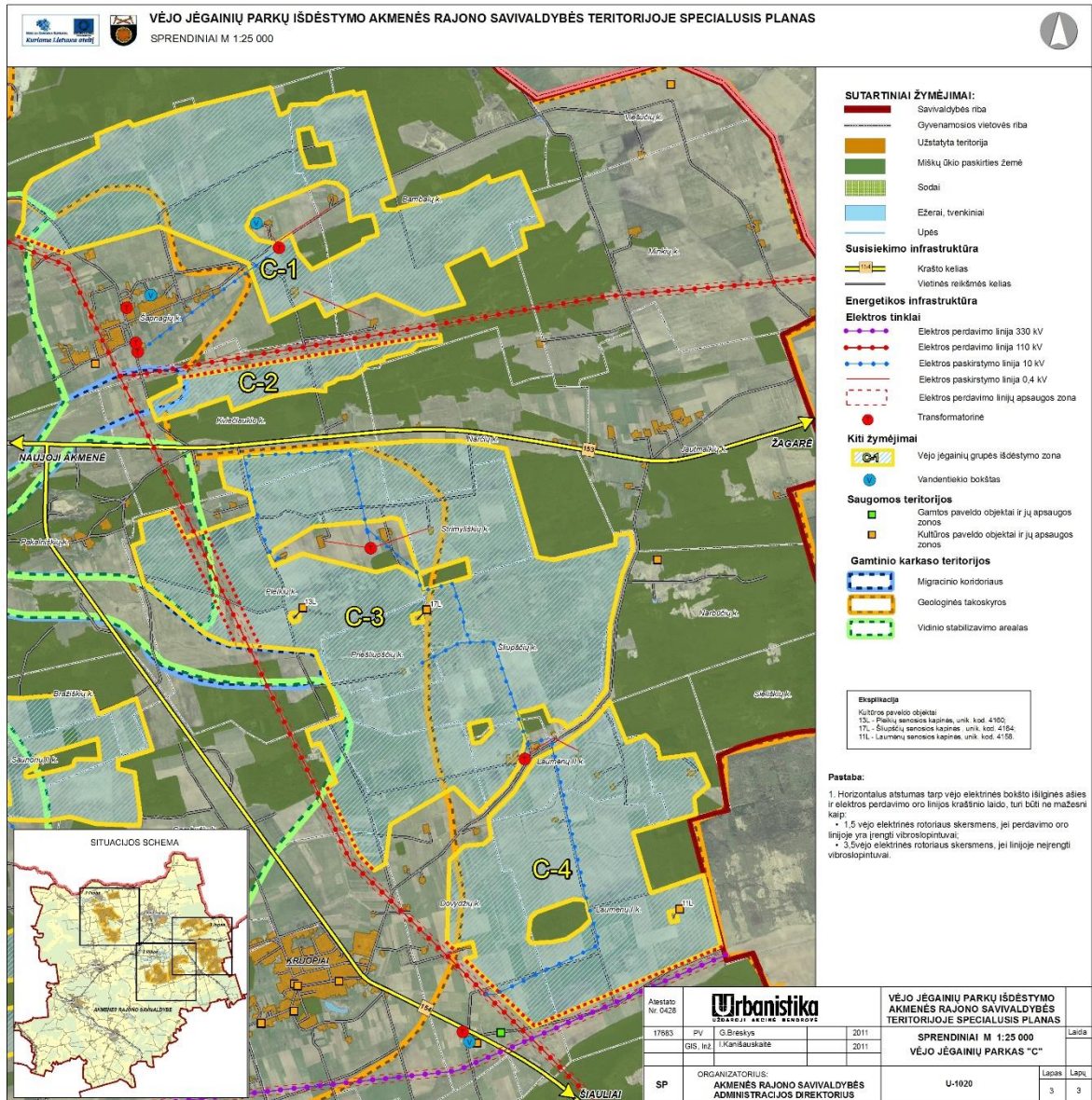


Fig. 2. C zone in the Special plan for the location of wind farms in the territory of Akmenė district municipality