

# Kelmė Battery Energy Storage System Project, Lithuania

Non-technical summary (NTS)



Document details

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Acronyms and abbreviations

|                             |                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| EPA or Agency               | Environmental Protection Agency                                                                                                             |
| BMS                         | Battery management and condition monitoring system                                                                                          |
| BESS                        | Battery Energy Storage System                                                                                                               |
| BESU                        | Battery energy storage unit (container-type)                                                                                                |
| FID                         | Final Investment Decision                                                                                                                   |
| NTS                         | Non-Technical Summary                                                                                                                       |
| EIA                         | Environmental Impact Assessment                                                                                                             |
| EIA Screening Documentation | Screening documentation for environmental impact assessment of the installation of a 150 MW battery energy storage system in Kelmė District |
| PCS                         | Power Conversion System unit                                                                                                                |
| Project                     | Kelmė Battery Energy Storage Park Project                                                                                                   |
| PTPI or Corpi               | Pajūrio tyrimų ir planavimo institutas                                                                                                      |
| PEA                         | Proposed economic activity                                                                                                                  |
| SEP                         | Stakeholder engagement plan                                                                                                                 |
| SPV                         | Special purpose vehicle                                                                                                                     |
| TS                          | Transformer Substation                                                                                                                      |
| TMS                         | Temperature management system                                                                                                               |

## 1. Introduction

The Kelmė Battery Energy Storage Park is located in Kelmė District, Dvarviečiai Eldership, Šiauliai County, Lithuania (figure 1-1). The Project is being developed next to the Kelmė Wind Farm and near the Dvarviečiai Transformer Substation (TS).



This project is intended for electricity storage using battery energy storage units (BESUs). The park can store surplus electricity and, when electricity demand increases, supply it to the power grid. This increases the reliability of the power system, provides better conditions for integrating renewable energy sources, reduces the risk of electricity generation curtailment, and contributes to more efficient grid balancing and fluctuation management.

In 2025, the Project reached an important milestone – the Final Investment Decision (FID) was adopted, confirming the implementation of the Project. Project implementation activities are currently under way, and the commercial operation date of the energy storage system is planned for 2027 (the Project under implementation is shown in the figures below).

The Project will be implemented under a special purpose vehicle (SPV) owned by UAB Ignitis renewables, which is part of AB Ignitis Group.

### 1.1. Purpose of this document?

This document is the Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Screening

Documentation for the Kelmė BESS Project, prepared on the basis of the information provided in the Screening Documentation. The document has been prepared in Lithuanian and English. More information about the Project is available on the website <https://www.ignitisrenewables.com/portfolio/>.



## 1.2. What other project documents are subject to mandatory public disclosure?

In addition to the NTS, the following environmental assessment documents are also disclosed:

- EIA Screening Documentation;
- EIA Screening Conclusion.

## 1.3. What are the project standards?

The operator undertakes to comply with all applicable laws and other legal acts of the Republic of Lithuania throughout the Project implementation period. The main environmental obligations established in the Law on Environmental Protection of the Republic of Lithuania include setting emission standards, regulating hazardous waste and managing protected areas. In Lithuania, public participation in environmental matters is also emphasised by granting the public the right to obtain environmental information, participate in impact assessments and report environmental damage.

The EIA Screening Documentation is prepared in accordance with:

- Law of the Republic of Lithuania on Environmental Impact Assessment of Proposed Economic Activities (EIA Law) No. I-1495;
- EIA Law, Annex 2, Item 10 “Engineering and other structures”, sub-item 10.2 (where the area occupied by the object and its appurtenances exceeds 1 ha);
- Description of the Procedure for Screening Proposed Economic Activities for Environmental Impact Assessment, approved by Order No. D1-845 of the Minister of Environment of the Republic of Lithuania of 16 October 2017 (current consolidated version effective from 7 October 2023).

## 2. What is the project?

### 2.1. Project location

The proposed economic activity is the installation and operation of a 150 MW Battery Energy Storage System (BESS) and its appurtenances in Dvarviečiai Village, Kražiai Eldership, Kelmė District Municipality. The location is well suited for BESS development because it is situated next to the Dvarviečiai TS. The area is predominantly rural, characterised by an agricultural landscape and low population density.

The main characteristics of the Project location are as follows:

- The Project is planned on a land plot for which a land plot formation and restructuring project has been prepared and approved. Its purpose is to separate part of the land plot for the BESS and its appurtenances and to change the main land-use purpose and/or land-use method(s) of the separated part to Other land use, Areas for the servicing of transport and engineering infrastructure facilities.
- The Project is planned away from densely populated areas to avoid potential impacts on residential, recreational, public and industrial zones. The nearest larger settlement is Butkiškė, located approximately 2.3



km to the south-west. The nearest underground fresh drinking-water borehole is approximately 95 m to the east, within the territory of the Dvarviečiai TS.

- The Project territory does not fall within or border any nationally or internationally designated protected areas, reserves, Natura 2000 sites or other protected areas. The nearest protected area to the Kelmė Battery Storage Park, Pamedžiokalis Forest, is located approximately 7.0 km from the Project site.

## 2.2. Project components

The Project, with a planned capacity of up to 150 MW and energy capacity of up to 300 MWh, is planned to be installed in an area of approximately 1.69 ha. The BESS is understood as container-type battery energy storage units (BESUs) with lithium-ion batteries, together with power conversion system (PCS) units, a switchgear point, a control room (control panel container) and an electrical cable system. The Project is planned to include up to 116 BESUs with preliminary dimensions of approximately 6 m in length, 2.5 m in width and 3.0 m in height; weight from 33.5 t to 47.25 t; nominal charging power from 1.4 MW to 3 MW; and PCS, consisting of converters, transformers, medium-voltage switchgear and a control system. The system is planned to include up to 41 converters and up to 21 transformers. All BESUs and PCS units will be interconnected by electrical cables laid in underground ducts. The BESS will be connected to the existing Dvarviečiai TS through an enclosed intermediate 30 kV switchgear.

## 2.3. Construction activities

The EIA Screening Documentation provides that, at the beginning of Project construction, the work area will be divided into the planned BESS territory and a temporary area for the storage of machinery and soil. A preliminary sequence of construction works is provided, but these

solutions will be refined during the design stage:

- removing/stripping the fertile topsoil layer within the BESS and temporary area and storing it;
- excavating soil down to a stable base;
- relocating the existing land drainage system and installing a new drainage system and water reservoir;
- placing sand (frost-resistant soil) and crushed-stone layers and forming surfaces;
- installing roads, surfaces, kerbs and foundations;
- installing underground ducts for electrical cables and, if planned, water supply pipelines;
- installing equipment on reinforced-concrete foundations (battery storage units, converters with transformers and circuit breakers, enclosed intermediate 30 kV switchgear with an auxiliary transformer, control panel container, electricity generator with an above-ground fuel tank, etc.);
- installing lightning rods, lighting, perimeter fencing with gates and security camera systems;
- landscaping works (spreading topsoil, rolling and, where planned, sowing a grass mixture);
- connection to the TS and commissioning works.

The total area occupied by concrete foundations under the BESS units and electrical cable trays may amount to up to 0.34 ha (to be specified during the design stage), i.e. approximately 20% of the planned BESS territory.

The preliminary planned access route for heavy construction machinery is regional road No. 2104 Pagojis-Butkiškė-Kražiai. Near Pagojai, this road can be accessed from main road A12 Riga-Šiauliai-Tauragė-Kaliningrad.

Access to the PEA territory is planned via the road located in the western part of the land plot, using the existing heavy-vehicle access from road No. 2104.

## 2.4. Operation

During operation, no products or goods will be manufactured. The activity will involve the storage, transmission and receipt of electricity, as well as electricity consumption required to maintain the system.

## 3. EIA screening process and context

EIA is a process through which, before the implementation of a proposed project begins, its potential effects on the environment and communities are assessed. It also ensures that both public authorities and the public can participate in the decision-making process.

The Law on Environmental Protection establishes the general EIA principles and requirements in Lithuania. Annexes I and II list the types of activities to which this law applies. These activities must undergo a screening procedure to determine whether an EIA is required, based on criteria such as size, location and potential impacts of the activity.

The Kelmė Battery Storage Park meets the criterion set out in Annex II, i.e. the planned built-up area exceeds 1 ha; therefore, it was screened to determine whether a mandatory EIA is required. The summary of the EIA processes for the Kelmė Battery Storage Park is provided below. The process was completed upon receipt of official confirmation – in 2025, an EIA screening process was carried out under Lithuanian law and the Environmental Protection Agency (EPA) issued a conclusion that a full EIA is not required.

## 4. What are the main environmental findings (potential impacts and their prevention)?

This section summarises the potential environmental impacts identified during the EIA screening process, as well as the planned environmental and mitigation measures at various Project stages. The information is presented in the table.

| Environmental component       | Planned environmental and mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Implementation stage                                    |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>Water, surface run-off</b> | <p>Temporary areas for the storage of materials and construction machinery will be located outside the protection strips of surface water bodies.</p> <p>Equipment containers, cabinets and buildings will be adapted to outdoor weather conditions and will not pollute the environment through surface corrosion. Precipitation water will drain onto the site surface.</p> <p>Rainwater will not accumulate in the PEA territory; it will naturally infiltrate into the ground in areas with crushed stone or greenery, or will drain to the edges of the BESS territory through formed gradients.</p> <p>Impermeable steel or concrete containment tanks or pits will be installed under each potentially polluting unit, such as a transformer, to collect oil products spilled during accidents.</p> | Planning stage / during construction work and operation |
| <b>Soil</b>                   | <p>Technically sound machinery will be used for construction works to prevent chemical pollution from mobile vehicles and other equipment.</p> <p>At the construction site, within the temporary PEA territory, the upper fertile soil layer will be removed and stored separately before earthworks are carried out.</p> <p>After construction works, the soil stored adjacent to the BESS territory will be spread, and, if needed, sown with a perennial grass mixture.</p>                                                                                                                                                                                                                                                                                                                             | During construction work and long-term operation        |
| <b>Ambient air</b>            | <p>Only technically sound machinery must be used during construction.</p> <p>Functional PEA equipment must be regularly maintained, serviced and tested in accordance with manufacturers' instructions and as provided for in the technical regulations of the Republic of Lithuania.</p> <p>The refrigerant planned for the BESUs is expected to comply with EU environmental standards: it will not deplete the ozone layer, will have low global warming potential, and will be non-flammable and non-toxic.</p>                                                                                                                                                                                                                                                                                        | During construction work and operation                  |

| Environmental component  | Planned environmental and mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Implementation stage                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Public health</b>     | <p>Information boards must be installed at the approaches to the PEA construction site, informing about the nature and duration of the planned works, as well as warning, prohibition and other signs to ensure that all persons are informed about health and life hazards.</p> <p>Construction works will be carried out only using technically sound machinery, the emitted noise level of which will not exceed the permissible sound power levels for outdoor equipment established in Construction Technical Regulation STR 2.01.08:2003 "Management of Environmental Noise Emitted by Equipment Used Outdoors" (approved by Order No. 325 of the Minister of Environment of the Republic of Lithuania of 30 June 2003).</p> <p>Works are planned to be carried out only on working days during daytime.</p> <p>There will be no permanent main lighting in the PEA territory; lighting will operate only when motion sensors are triggered or when maintenance works are carried out during the dark time of day.</p> <p>During the preparation of the technical design, all equipment will be selected with such noise levels and/or such noise-reduction measures will be selected so that the cumulative noise level of the entire BESS and neighbouring facilities does not reach the limit values established in Lithuanian Hygiene Standard HN 33:2011 "Noise Limit Values in Residential and Public Buildings and Their Environment".</p> <p>If residents submit complaints regarding potential PEA impacts, a response will be provided: the impact will be assessed and measured and, where necessary, additional mitigation measures will be implemented.</p> | Before the start of work, during construction work and during operation |
| <b>Cultural heritage</b> | During PEA installation works involving earthworks, if archaeological finds are accidentally discovered, the municipal heritage protection unit will be notified, and it will inform the Department of Cultural Heritage, as specified in Article 9(3) of the Law of the Republic of Lithuania on the Protection of Immovable Cultural Heritage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | During construction work                                                |
| <b>Extreme events</b>    | <p>To prevent overheating of the planned BESS electrical equipment (BESUs), the manufacturer will supply battery cell containers equipped with ventilation and cooling equipment that will ensure an appropriate temperature during internal processes.</p> <p>For fire prevention in a BESU container, an internal fire-extinguishing system will be integrated at the factory. Fire-fighting equipment will include smoke and flame detectors connected to a central control system and capable of operating for up to 24 hours in the event of a centralised power supply outage.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Operation                                                               |

| Environmental component | Planned environmental and mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Implementation stage                                    |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>Waste</b>            | <p>For general fire-fighting across the entire BESS park and/or external cooling of equipment, a 90 m<sup>3</sup> underground water reservoir with a hydrant is planned within the site boundaries (this solution depends on the selected supplier; the final decision will be made during the preparation of the technical design). The reservoir will have automatic water-level and refill control.</p> <p>The access road and territory will be planned so that Fire and Rescue Service vehicles can properly access and manoeuvre to each equipment complex.</p> <p>All construction waste generated during construction works will be sorted and stored in containers until it is removed and transferred to waste managers. Construction waste will be managed in accordance with the Rules for the Management of Construction Waste (approved by Order No. D1-637).</p> <p>After completion of construction work, the construction site must be cleaned so that no waste generated during the works remains on site.</p> <p>Product packaging and waste generated during operation will be managed in accordance with the requirements of Order No. D1-367 "On the Approval of the Rules for Accounting and Reporting on Waste Generation and Management".</p> <p>A transfer-acceptance and recycling agreement for replaced end-of-life lithium-ion batteries will be concluded with equipment manufacturers or suppliers. If this option is unavailable or ceases to be available, all waste will be handed over to companies certified to provide waste management services under the applicable Law on Waste Management of the Republic of Lithuania (No. VIII-787).</p> <p>The manufacturer and importer will be required to register with and use the Unified Product, Packaging and Waste Information System (GPAIS).</p> <p>Servicing, recovery, recirculation and registration of equipment containing F-gases will be carried out by a licensed company in accordance with Regulation (EU) 2024/573 of the European Parliament and of the Council on fluorinated greenhouse gases.</p> <p>In the event of accidents or failures, the relevant consequence elimination, compensation and restoration measures provided for in legal acts will be applied.</p> <p>During decommissioning and dismantling of all equipment, the integrated BESS units in containers and cabinets will not be dismantled within the PEA territory but will be removed in full configuration, as delivered during construction, to specialised sites for further dismantling, sorting and recycling. Where possible, equipment or its parts will be reused or sold for further operation in another economic activity (secondary use).</p> | During construction work, operation and decommissioning |

## 5. How will activity-related impacts be managed and monitored?

The EIA Screening Documentation includes preventive and organisational measures related to the Project; however, no specific monitoring programmes are planned because the Project's environmental impact is of low significance.

## 6. Stakeholder engagement

### 6.1. Engagement summary

Stakeholders are engaged in the Project in several ways, including the formal public information process that forms part of the EIA process, direct communication with the community and communication managed by the Project developer. These activities aimed to inform local stakeholders, collect feedback and respond to issues of concern to the community.

### 6.2. Ongoing stakeholder engagement

The Project environmental documents are publicly available. In addition, for the Project operation stage, stakeholder engagement and information disclosure are planned at key stages and/or in relation to changes in order to promote transparent, inclusive and effective communication between the Project and stakeholders throughout its life cycle.

Ongoing stakeholder engagement is ensured through the activities set out in the Stakeholder Engagement Plan (see Section 6.3). Stakeholders may also submit grievances or questions, which are reviewed and addressed in accordance with the grievance mechanism established by the company (see Section 6.4).

### 6.3. Stakeholder Engagement Plan (SEP)

The SEP sets out the strategy for engaging various stakeholder groups and individual stakeholders in the Project activities. The SEP specifies at which Project stage and with which stakeholders activities are carried out to ensure that stakeholders are informed about the Project in a timely and appropriate manner, that transparent and timely information dissemination is ensured, and that stakeholders have the opportunity to communicate directly with Project representatives, ask questions and receive information.

The communication methods used vary depending on the Project stage, the matter requiring consultation and/or information, and the type of stakeholder. Methods of communication with Project stakeholders include, but are not limited to:

- Public hearings or meetings
- Discussions through surveys or census studies
- Consultations using electronic media
- Information campaigns and information activities
- Meetings with local residents, local authorities and community representatives
- Internal and/or external grievance mechanism

At all Project stages, the community team implements the actions set out in the SEP and also reviews grievances.

### 6.4. Grievance management

UAB Ignitis renewables have established a grievance mechanism, which is a process for receiving, assessing and handling grievances and is intended for all people who have concerns regarding the Project or its impacts. Any person may submit a grievance or concern regarding the Project to the company, and the company must respond to the grievance, review it, resolve it and inform the complainant of the decision in accordance with the

procedure set out in the grievance mechanism. It should be noted that the grievance mechanism does not replace any other available remedy mechanisms.

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