Luxembourg, 02.07.2024

Environmental and Social Data Sheet[1]

Overview

Project Name:	KELIBER BATTERY GRADE LITHIUM PRODUCTION
Project Number:	2017-0804
Country:	Finland
Project Description:	Mining and production of battery grade lithium (Li) hydroxide. The project comprises the successive development and mining of several Li-mineral ore mines, a concentrator plant to produce an ore concentrate and an innovative first-of-a-kind hydro-metallurgical processing plant to produce battery grade lithium hydroxide (LiOH) with a nominal capacity of 15 kt/a.

EIA required:	yes
Invest EU sustainability proofing required	yes
Project included in Carbon Footprint Exercise[2]:	yes

(Details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

Environmental Assessment

The project comprises 3 major components, (i) extraction of Li containing mineral ores from different mines, (ii) a concentrator plant used to process the extracted minerals and to produce a Li concentrate and (iii) a hydrometallurgical lithium hydroxide processing/refining plant to produce roughly 15 ktpa of battery grade lithium hydroxide (LiOH).

All three components require an environmental impact assessment, in line with the national legislation and Directive 2011/92/EU as amended by the Directive 2014/52/EU. The competent authority responsible for the EIA process is ELY Centre for South Ostrobothnia (Centre for Economic development, Transport and the Environment) and for environmental and water permits it is Regional State Administrative Agency of Western and Inland Finland (AVI).

Component 1 (mines): The ores will be sourced from several different open-pit and underground mines. Only two (Syväjärvi and Rapasaari mines) will be exploited during the expected lifetime of the EIB loan. Following the finalization of the EIA procedure, the promoter has to apply for an environmental and water permit before the start of operation. The environmental permitting status for the mentioned mines is as follows:

Syväjärvi: The Syväjärvi mine has received all necessary permits which include a water permit for dewatering two small lakes on the mining site. The initial permit decision was appealed in the Regional Administrative Court (or VAC) and the permit decision was confirmed in June

[1] The information contained in the document reflects the requirement related to the environmental, social and climate information to be provided to Investment Committee as required by the Invest EU Regulation and it represents the equivalent of the information required in the template of the InvestEU sustainability proofing summary.

[2] Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20 000 tonnes CO_2e/year absolute (gross) or 20 000 tonnes CO_2e/year relative (net) – both increases and savings.

Luxembourg, 02.07.2024

2021. No further appeal was made and the relevant permits cannot be legally challenged anymore.

Rapasaari: The Rapasaari mine is mostly located in the area of an existing peat farm and the surroundings areas are used for commercial foresting. The EIA procedure for the Rapasaari mine was finalized in March 2021. The environmental permit was granted on the 28.12.2022. The permit was then appealed by members of the public as well as by the promoter at the Vaasa Administrative Court for changes and/or clarifications to a limited number of permit conditions. The Court upheld the permit but referred certain permit conditions back to the permitting authority for further review.

Component 2 (concentrator plant): The Paivaneva concentrator plant is located within the same area as the Rapasaari mine. Although two separate applications have been submitted for the mine and concentrator in Rapasaari, the competent authority is obliged to decide on both applications at the same time. Consequently, the EIA procedure for the concentrator was finalized in March 2021 and the permit was granted on 28.12.2022. This permit was subsequently appealed by members of the public as well as by the promoter. As a result of the Court ruling on the appeals, the construction of the concentrator can proceed subject to some technical re-designs relating to (i) the placement of a waste fraction and (ii) decommissioning of the tailings area. Once the work is completed, the respective applications will be submitted to the competent authority.

Component 3 (lithium hydroxide refinery): The hydrometallurgical Li processing is located in the Kokkola Industry Park (KIP) close to the harbor of Kokkola on the west coast of Finland. In the industrial park, there are 18 industrial plants and over 60 service companies supporting the core functions of industrial companies. The KIP provides essential services including water supplies, sewerage networks, security, fire protection, etc. It is located next to Finland's biggest cargo and transit port. The EIA process was finalized in June 2021 and the promoter submitted the application for an environmental permit in June 2021. The final environmental permit decision was issued and published in June 2022.

Component 1 and component 2: mines and concentrator plant

The EIA process for the two mines (Syväjärvi and Rapasaari) was carried out between 2014-2018 and the competent authority issued the reasoned conclusion in June 2018. After the decision to move the concentrator (component 2) from a different location to Rapasaari and to increase the lithium hydroxide monohydrate production capacity to 15 000 tonnes/year, a new EIA procedure has to be carried out and the competent authority issued their reasoned conclusion in March 2021.

The competent authority concluded that the EIA report meets the substantive requirements of the EIA programme (the plan prepared by the promoter for the necessary studies, and arrangements for the EIA procedure) and does not contain any material deficiencies that would prevent from drawing up a reasoned conclusion on the significant effects of the project on the environment. However, some shortcomings and uncertainties have been identified in the EIA Report but were adequately addressed in the context of the project development and the permitting procedures.

<u>Water</u>

Temporarily increasing turbidity and concentration of suspended solids during the construction phase due to digging and relocation of soil might affect the impact on water quality of the

Luxembourg, 02.07.2024

Näätinkioja Stream. The impact will be minimized by preparing first the sedimentation ponds to collect runoff water from the area.

Since nitrogen load from explosives is a major concern, water treatment includes nitrogen removal during the operational phase. As an outcome of the EIA process, the effluent from the Rapasaari – Päiväneva complex will be treated and collected in a recycling water pond before being discharged into the Köyhäjoki river. This avoids the discharge into the much smaller and closer Näätinkioja Stream which is populated with trout.

An ecological assessment of impacts from mining operations on the ecological status of surface waters from the Rapasaari – Päiväneva complex was conducted and is included in environmental permit application. The assessment concluded that the water discharge from the Rapasaari – Päiväneva complex does not have a negative impact on the ecological status of surface waters bodies on the discharge area or further downstream. Furthermore, the recreational use of the waters downstream of the Päiväneva production area and recreational fishing are not expected to be adversely affected.

In addition, to implement environmental permit conditions, upgrades to the design of the water treatment infrastructure have been made as, stringent water quality requirements for certain parameters were imposed.

Natura 2000 sites and biodiversity

Natura 2000
The nearest protected site to the Syväjärvi and Rapasaari complex sites is the Vionneva Natura 2000 site (FI1000019), which, at its closest, is located approximately 300 m from the Rapasaari mine site boundary and 2.5 km from the Syväjärvi mine site boundary.

For the Vionneva Natura 2000 site, two appropriate assessments, as required by art. 6(3) of the Habitats Directive were carried out in 2017 and 2020. The 2020 appropriate assessment concluded that mining or concentrator operations have no direct negative impacts on the Natura 2000 site as all impacts are limited to the vicinity of the sites to be built and thus a distance (at least 0.9 km) from the Natura 2000 site will be maintained. There is no direct line of sight between the built-up areas and the Vionneva site due to the flatness of forested terrain.

Biodiversity
Starting from 2014 several studies concerning vegetation, habitats, flora, and fauna have been carried out. The EIA 2020 report and field studies conducted over the years have not identified threatened plant species, or species of special conservation status in accordance with national and Habitats Directive (92/43/EEC) in the surveyed area at Syväjärvi, Rapasaari complex or in their immediate surroundings. The Stream Näätinkioja (located to the south of Päiväneva) can be classified as a habitat of special importance and is marked as “ancient forest” and will be preserved.

The following species included in Annex IV(a) of the Habitats Directive have been detected in the field surveys in and near the mine sites: moor frog, Siberian flying squirrel, otter and Northern bats. To monitor and protect these species and to maintain their favorable conservation status, a Biodiversity Management Plan (BMP) will be implemented. The plan contains preventive measures to recognize significant habitats and species for maintaining biodiversity, to indicate procedures to prevent or mitigate negative impacts of the project for biodiversity and to promote sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities. The

competent authority granted a derogation under art. 16 of the Habitats Directive for moor frogs and the deterioration of its habitat.

Air quality

The impact on the air quality is mainly caused by ore extraction (mining and blasting), crushing, operation of the concentrator and transport. Dust emissions related to the mining and ore beneficiation activity have been modelled for the Syväjärvi mine and the Rapasaari complex. According to these models, particulate matter (PM10) limits are not exceeded at the nearest holiday homes. The mitigation measures include road irrigation, speed limitations of ore transports and possibly salting the roads. At the concentrator, dust is prevented by enclosing the conveyors in the crushing plant and by dust collection equipment which are permanently operational in the crushing plant.

Noise and Vibration

Noise: As part of the environmental permit application for the Rapasaari complex, a noise model has been carried out and the results indicated that the activity would not exceed the limits values stated in the Syväjärvi environmental permit.

Vibration: The EIA 2020 report states that vibration caused by mining operations will be limited to the mine site except for the blasting, which may cause vibrations outside of the mine site. In order to reduce the impact of the vibrations blasting will be limited to daytime (6am to 6pm).

Waste Disposal

In line with the national legislation and requirements of the Directive 2006/21/EC on the management of waste from extractive industries, an extractive waste management plan (EWMP) has been prepared for the Syväjärvi mine and the Rapasaari complex area. The EWMP for Syväjärvi operations includes the following: topsoil removal (humus, peat, silt, moraine), sediments removed from the lake areas after the drainage of the lakes, waste rock from mining and sediments accumulating at the bottom of the clarification ponds.

The EWMP for Rapasaari complex has been prepared based on the quantities from the EIA 2020 report and includes topsoil removal (humus, peat, silt, moraine), waste rock and pyrite-containing waste rock from mining and the tailing storage facility has been submitted to the permitting authority as part of the environmental permit application.

Soil

A soil baseline study was carried out at Rapasaari and Päiväneva during the EIA 2020 assessment. Soil samples were taken during the geotechnical drilling conducted at the area. Use of different available soil materials for landscaping or disposing of excess soil material is not expected to have negative impacts on soil.

Mines closure

The national legislation requires a closure plan for a mine as part of the environmental permit application and the plan must be updated as the operation progresses.

For Syväjärvi, the closure plan only concerns the waste rock area and this includes a landscape and monitoring plan for post closure.

For the Rapasaari complex the conceptual closure plan was developed to address the impact of closure on surface waters, groundwater, soil, flora and fauna, conservation areas, air quality, landscape, traffic, people and society as well as risks related to closure and controlling measures. The closure plan has been submitted to the competent authority as part of the environmental permit application. In order to reflect the design changes to ensure compliance

Luxembourg, 02.07.2024

with environmental permit conditions and to support project's implementation, both the EWMP and the closure plan have to be reviewed.

Component 3: lithium hydroxide refinery

The EIA process for Kokkola lithium hydroxide refinery, including the public consultation, was carried out in 2018-2020 with the reasoned conclusion issued by the competent authority in July 2020. Subsequently, due to some changes in the treatment of the effluent, the EIA report was amended in March 2021 and the updated reasoned conclusion was issued on 30 June 2021. In the updated EIA report, the environmental impact of the changes to the project has been assessed, in particular regarding surface water effects, on air quality, noise, traffic and groundwater The reasoned conclusion of the competent authority confirmed that the report complies with the substantive requirements of the national legislation. However, it has identified a series of shortcomings and missing assessments about possible alternatives regarding effects on surface waters, landscape and the cultural environment, impact on air and climate, noise effect, catchment area and transport impacts. These points have been addressed in the environmental permitting procedure and have been accepted by the competent authority. It has to be noted that the chemical plant will be installed inside a major industrial zone already accommodating multiple chemical manufacturing plants.

Waste disposal during operations

The promoter has a waste management plan that has been submitted to the competent authority as part of environmental permit application. The plan indicates the types of waste fractions and estimated amounts of waste generated during operations. The main waste from the plant is the analcime sand that is proposed to be disposed as construction material in a nearby port land reclamation project (subject to confirmation that it meets the conditions defined in the port's permit). Considering the limited capacity of the port to use the sand additional evaluations of alternative disposal solutions have been developed. The environmental permit for this component requires the Promoter to carry out additional studies to confirm the final solution with regards to the disposal of the analcime sand. In this context an EIA process for a disposal area in Hoikkaneva is ongoing. The main target of the promoter is still to utilise the analcime sand in the Kokkola port.

Air Quality

The major sources of air emissions at the chemical plant are the heat treatment furnace stack followed by the dust collector and the generated traffic (spodumene concentrate deliveries to the plant, empty trucks from the plant and commuting traffic). In 2020, a dust dispersion modelling report (as part of the environmental permit application) has been prepared to calculate the emissions into the air considering different stack heights. The results show that the expected concentrations will be well below the emission limit values required by the legislation at all considered stack heights.

Noise and Vibration

A noise survey of the City of Kokkola in 2014 and forecast to the year 2030 concludes that noise impacts arising from industrial activities in KIP are largely confined within the industrial area and the noise caused by the industrial activities do not exceed the reference values in adjacent residential areas.

A more recent (2020) noise model for the chemical plant is included in the environmental permit application. According to this noise model, noise originating from lithium hydroxide refinery plant will stay within the industrial area and the nearest residential houses on the south side are not impacted with significant noise.

Luxembourg, 02.07.2024

According to the 2020 EIA report, vibration in the industrial area is mainly caused by rail traffic and, to a lesser extent, road traffic and stays within industrial area.

Water
Process wastewater of the chemical plant is first treated at the lithium hydroxide refinery to extract all possible lithium from the water and to remove excess solids and arsenic before being released to the municipal wastewater treatment facility (WWT) at Hopeakivenlahti about 2 km away. The water pilot test carried out in 2020 confirms that the emissions limit values from the lithium process comply with legal requirements and those stipulated in the WWT facility permit.

A report assessing the impact of the plant on the ecological status of the coastal seawater has been prepared as part of the environmental permit application. The parameters considered by the study are phytoplankton, benthic fauna, and aquatic vegetation, total phosphorus, total nitrogen and visible depth. No adverse effects on the ecological status or on the objective of achieving good ecological status (as required by the Water Framework Directive 2000/60) are expected from the chemical plant's effluents, cooling water and/or stormwater.

Natura 2000 and biodiversity
Being located in an industrial area and considering the distance (approximately 2.2 km north) to the nearest Natura 2000 site SPA/SCI Rummelö-Harrbåda (FI1000003is), the impact of the project has been considered not significant. In addition, the project is not a suitable habitat for endangered species or species under the Habitats Directive.

Monitoring
The principles of use, emissions and preliminary descriptions of surface, ground and storm water monitoring and monitoring of air emissions, air quality and noise are included in the EIA report. A more detailed monitoring programme has been developed as part of the environmental permit. The monitoring plan addresses site monitoring during construction works, operations, and the closure phase and after closure. The monitoring for the Syväjärvi mine and for Rapasaari complex is carried out according to the environmental permit. When mining operations start, the promoter aims to combine the separate monitoring plans of these sites.

Climate assessment:

The project will implement an integrated manufacturing process for battery grade LiOH. LiOH is a key material for the production of high-performance batteries and hence it enables and supports the decarbonisation of energy supply and transport and leads to indirect GHG emissions savings. In addition, the new process has a reduced carbon footprint if compared to the traditional processes within today's predominant LiOH supply routes.

The project's activities are aligned with the Paris Agreement on climate change according to the Bank's definition (Annex B of the Climate Bank Roadmap).

EIB Paris Alignment for Counterparties (PATH) Framework

The promoter/borrower is not in scope of the PATH framework as it is an SPV with multiple shareholders.

EIB Carbon Footprint Exercise:

Luxembourg, 02.07.2024

The extraction and processing of Li minerals into high purity battery grade LiOH is energy intensive and consumes coal or natural gas, fuels (for transport and ore extraction purposes mainly) and electricity. The majority of emissions are related to the hydrometallurgical LiOH processing plant. The promoter intends to use natural gas in its processing plant. According to the Bank's methodology, the greenhouse gas emissions from the project's operation will be assessed by considering both (i) the direct greenhouse-gas emissions from fuels related to the ore extraction, transportation in between sites and to the products 'final destination' Rotterdam (Netherlands) and natural gas primarily linked to LiOH conversion in the processing plant and (ii) the greenhouse gas emissions associated with the electricity sourced from the grid. The estimated absolute emissions from the project in a standard year of operation amount to 66 kt CO_2eq. Based on the bank's carbon footprint exercise methodology it is estimated that the overall project will result in emission saving of -105 kt of CO_2eq per year This figure results from comparing (i) the project emissions at the mines and plants in Finland with (ii) the weighted average of the current economically viable alternative production routes, i.e. producing LiOH from hardrock mines and processing in China (50%) and producing LiOH from brines in South America with a subsequent transformation step in Europe (50%). The majority of the GHG emission savings are related to the usage of natural gas instead of coal in the processing plant and the low national electricity grid factor of Finland if compared to China.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Social Aspects

The areas required for mining are sparsely populated and used for commercial foresting and/or peat production, particularly at Rapasaari. It is understood that economic displacement, as a result of land acquisition, will not significantly affect the livelihoods of landowners. Compensation for peat extraction or commercial forestry is included in negotiated settlements, and no other livelihood activities are impacted. The promoter has a land acquisition and livelihood restoration framework developed in 2021 to guide its land acquisition and ownership process.

Public Consultation and Stakeholder Engagement

As statutory consultations are required as part of the national EIA process, each EIA conducted has included two public hearings during the process - one in the EIA program phase and one in the EIA assessment phase. Concerns expressed by the public were related to environmental impacts, an increase in traffic, impacts on groundwater and seawater, noise, dust and other emissions and safety risks. These have been considered in the resonated conclusion and in the further design of the project. For example, all operations at the chemical plant take place inside, traffic to and from the plant use major roads appointed for heavy traffic and the analcime sand is expected to be slurried and transferred via pipeline into the Kokkola port which reduces heavy vehicle traffic, noise, dust and other emissions and increases safety.

In addition, since January 2018 Keliber has systematically collected and reported stakeholder activities, from landowner and inhabitant meetings, meetings with governmental, regional, and local authorities, and public presentations in expositions and seminars. A continuous stakeholder action plan which is regularly updated is in place.

Luxembourg, 02.07.2024

Other Environmental and Social Aspects

The promoter intends to operate according to the following certified management systems and standards: ISO 9001 (quality management system), ISO 45001 (operational health and safety), ISO 14001 (environmental management system) and at a later stage ISO 50001 (energy management system).

Conclusions and Recommendations

The project was subject to environmental impact assessment process and appropriate assessment that has been finalised with the reasoned conclusions issued by the competent authority. The competent authorities have granted all environmental, water mining and construction permits required for the project to be implemented. The permits of the Syväjärvi mine cannot be appealed anymore and are valid.

All the environmental permits stipulate conditions for the Promoter to provide additional documentation and monitoring data to the monitoring regulator (ELY), some of them requiring acknowledgement or approval by ELY before construction starts, as well as ongoing monitoring requirements during the construction and operation phases.

The environmental permits for the Rapasaari mine and the concentrator plant was appealed by members of the public and the promoter at the Vaasa Administrative Court for changes and/or clarifications to a limited number of permit conditions. The Court upheld the permit and the construction of the concentrator can proceed, but commencement of the production is subject to the competent authority's review and issuance of an enforceable permit related to the waste fraction and the after-closure plan for the extractive waste areas.

Sustainability proofing conclusion: The project has been assessed against the InvestEU sustainability proofing requirements based on the EIA reports, the appropriate assessment and environmental permits and additional conditions imposed by the competent authority. It can be concluded that the project is consistent with the InvestEU sustainability proofing requirements and the proposed mitigation measures are expected to mitigate the residual impacts in compliance with the applicable EU legislation. The following conditions have to be met by the promoter:

Conditions to be fulfilled before disbursement:

- Develop a climate change vulnerability risk assessment in line with EIB requirements.

Undertaking:

- Share any updates of the EIA report and environmental permit with the Bank, as soon as available.
- Share the water management plan, as required by the environmental permit for components, which will demonstrate the fulfilment of the water related conditions.
- Share the final solution with regards to management of the analcime sand.
- Share the after-closure plan for the extractive waste areas.
- Share with EIB any deviation from the environmental permit conditions which lead to additional or changed mitigation measures.