

Luxembourg, 15 November 2023

## Environmental and Social Data Sheet

### Overview

Project Name:	VANADIUM RECOVERY FACTORY PORI	
Project Number:	2022-0153	
Country:	Finland	
Project Description:	Project concerns the design, construction and operation of an innovative, first-of-a-kind commercial size plant for vanadium recovery and has a capacity of roughly 9 ktpa of vanadium pentoxide (V <sub>2</sub> O <sub>5</sub> ). The vanadium will be recovered by processing up to 300 ktpa of a steelmaking by-product (slags) that are at this point in time landfilled and hence the project will support circular economy.	
EIA required:	yes	
Invest EU sustainability proofing required	yes	
Project included in Carbon Footprint Exercise <sup>1</sup> :	yes	

### Environmental and Social Assessment

#### Environmental Assessment

The Project is a greenfield investment for the construction of a first-of-a-kind innovative commercial scale steel slag (by-product) recycling facility for the recovery of vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>). The developed process is an efficient representation of circular economy. The process utilises a low-value by-product (steel slag) which is underutilized today as a feedstock and converts it into saleable products. In addition, the process results in the sequestration of carbon dioxide that would otherwise be emitted to the environment.

The Project consists of the construction and operation of a process plant, including a mill, an alkaline leach separation circuit, a V<sub>2</sub>O<sub>5</sub> purification circuit and a kiln as well as stockpiles areas, grid and water connections, access roads, and other storage facilities. As an integrated chemical plant, it falls under Annex I of the EIA Directive 2011/92/EU amended by Directive 2014/52/EU, thereby mandating a full EIA process. An EIA Report has been presented in September 2021 for public consultation between 29 September - 29 November 2021. The coordinating authority provided its reasoned conclusion on the EIA report on 27 January 2022 and the corresponding integrated environmental permit has been awarded on 8 September 2022 and has gained legal force without appeals.

The Project is implemented at a brown-field areas on the Tahkoluoto island outside Pori in Finland. It is in an existing port area with a relatively long industrial history and many industrial operators. In the underlying land use plan, the Project area is zoned to serve industrial,

<sup>1</sup> 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<sub>2</sub>e/year absolute (gross) or 20,000 tonnes CO<sub>2</sub>e/year relative (net) – both increases and savings.



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warehouse and energy service activities. Pursuant to the detailed land use plan the southern Project area has the planning ordinance T-9, that indicates an area that can be used for industrial and warehouse use. The northern project area has in the detailed plan the planning ordinance TV-1 that indicates that area can be used as a storage area. The City of Pori is in the process of updating the component master land use plan for the area. Based on the information provided by the promoter the current detailed land use plan is also sufficient for the Project as such. Pursuant to the draft of the new component master land use plan, the area Project will be zoned for industrial use. The Project area is leased from the harbour operator Porin Satama Oy and does not include any water areas. Under the lease agreement previous polluters are liable for the remediation of contamination that they may have caused.

The EIA Report included an assessment of potential impacts on air quality, surface water, groundwater, soil, the marine environment, fisheries, terrestrial flora and fauna, conservation reserves, and cumulative impacts. The Project is located in a port area with industrial activities and has limited biodiversity (flora and fauna) values. The most significant biota occurring within or near the Project area is red fescue (*Fescuta rubra*) and sheep fescue (*Fescuta ovina*), which are the food sources for the meadow dwarf moth (*Elachista triatome*), which is listed as threatened under the Finnish Nature Conservation Decree Annex IV (160/1997, as amended) but not listed in neither Annex IV nor Annex II if the Habitats Directive 92/43/EEC. As a compensation measure identified in the EIA Report, a plan to relocate the fescue was presented to the Competent Authority in 2021 and after subsequent approval the relocation took place in the summer of 2022.

Several bird nesting areas occur around the Project area, with the nearest, Kaijakari, occurring approximately 1.6 km to the southwest. There are three Natura areas located less than 10 km from the Project area: Gummandoora Archipelago (2 km to the north), Kokemäenjoki River Delta (6 km to the southeast) and Preiviikinlahti (7 km to the south). The Natura area "Pooskeri Archipelago" is located about 11 km to the north-east of Tahkoluoto. The coastal area including the archipelago outside of Pori, Rauma, Pyhäranta and Uusikaupunki are part of the Bothnian Sea National Park. The shortest distance from the Project area to the Bothnian Sea National Park is approximately 3 km. A Natura screening study is included in the EIA programme and concludes no significant impact on these areas. Hence no full Natura assessment procedure was requested.

The Project area is bounded on one side by waters, which are in the marine area outside of Pori, in the coastal region of the Bothnian Sea and in the Reposaari-Outoori water body area. The ecological status of Reposaari-Outoori area has been estimated as satisfactory and physico-chemical state as good for the third water management period. Two ecologically significant underwater areas of marine environment are located near the Project area; Kokemäenjoki River Delta and Preiviikinlahti. The shortest distance to the Kokemäenjoki River Delta from the northern Project area is about 6 km. There are no naturally occurring freshwater surface water bodies located within the Project area.

The following emissions to air are generated in the process: nitrogen oxides (NO<sub>x</sub>), dust, ammonia (NH<sub>3</sub>) and carbon dioxide. The impacts of noise, dust and particle emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) have been considered in the environmental permit and are expected to be within the established national limits.

Beside Vanadium, the plant will generate Stabilised Slag Material (SSM) and sodium sulphate as other usable by-products, reinforcing the circular economy impact of the Project. SSM can potentially be used to substitute limestone to produce low-carbon cement for concrete applications. Under the environmental permit, SSM is classified as a waste. The promoter is planning to seek reclassification of SSM as a by-product. The sodium sulphate is already



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classified as a by-product under the environmental permit. This is done in co-operation with an off-taker and the Competent Authority.

The Project has been assessed for Paris alignment and is considered to be aligned both against low carbon and resilience goals against the policies set out in the Climate Bank Roadmap.

### **EIB Carbon Footprint Exercise**

The estimated annual emissions in a standard year of operation amount to 21 kt CO<sub>2</sub>e/year, based on the energy consumption of the plant. Compared to an alternative project (production plant in South Africa, with the start gate being the acquisition of the feed material from the supplier), the relative emissions are 11 kt CO<sub>2</sub>e/year. However, at the same time, the Project sequestrates 74 kt of CO<sub>2</sub>/year in the chemical process outweighing the emissions. 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.

### **Public Consultation and Stakeholder Engagement**

The EIA Program was made available for public consultation from 12 April to 12 May 2021 and the EIA Report from 28 September to 29 November 2021. Announcements were published at Ymparisto.fi, at the website of the City of Pori and at least the announcement of the EIA program was also in the local newspaper. The EIA Program and the EIA Report were published online at Ymparisto.fi and the printed version was available in the community building at Pori. Public engagement events were held online due to COVID-19 restrictions and recordings were published on the website of the promoter and the authorities.

A follow-up group that consists of stakeholder groups, such as NGOs, authorities and citizen representatives, has been organised. A stakeholder questionnaire was undertaken in May 2021 as a means of providing Project information and for collecting information for the social impact assessment. It was advertised on social media, direct emails and newspaper advertisements. Overall, during the permitting phase, the Project has conducted meaningful stakeholder engagement.

### **Other Environmental and Social Aspects**

Environmental and Social Management Plans for the construction and operational phases have not yet been prepared. The EIA Report indicated that a Stormwater Management Plan and an Emergency Plan would be developed for the Project. The Environmental Permit also requires that the Project implement the Best Available Techniques (BAT) with respect to the control of noise, dust, odour, fugitive emissions and air emissions.

## **Conclusions and Recommendations**

Considering the Project being an industrial material processing plant, the overall risks are low due to its limited incremental impact, given the brownfield location. Risk mitigation is well described and implemented, and residual risks are low. The Project has overall positive benefits, given the sequestration of carbon dioxide in the Project.

As conditions to the Bank's financing, the Project should develop an Environmental and Social Management System and an Environmental and Social Management Plan for the construction phase. In addition, the Project should undertake to develop an Environmental and Social Management Plan and operational phases before start of operation. These plans should be reviewed and to the satisfaction of the Bank.

Given the low risk and presented mitigation measures the Project is considered to have low residual risks and therefore no further detailed sustainability proofing is required.

Under these conditions, the Project is acceptable for EIB financing in E&S terms.