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Environmental and Social Data Sheet¹

Overview

Project Name:	H2 GREEN STEEL
Project Number:	2020-0902
Country:	Sweden
Project Description:	The implementation of a 2.5 million tons per year integrated primary steel manufacturing plant based on hydrogen direct reduction (DR) technology.
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

The project concerns a new innovative and breakthrough commercial scale greenfield steelmaking plant based on hydrogen reduction of iron ore combined to some extent with recycling of steel scrap. The greenfield plant encompasses the following innovative, breakthrough, first-of-a-kind commercial scale components; a large scale hydrogen generation plant based on electrolysis, an hydrogen based direct reduction plant for ironmaking combined with electric arc furnace (EAF) steelmaking and all associated downstream processing facilities. The outcoming steel will have a carbon footprint that is very low or close to zero, meaning the plant will manufacture green and sustainable high quality flat steel products targeting mainly the automotive, construction, white goods, industrial equipment and energy sectors.

Environmental Assessment

The new greenfield plant is a large scale industrial development in an energy intensive and heavy industry. It comprises among others a large hydrogen production plant based on electrolysis (~700MW), a direct reduction plant with a capacity of 2.1 million tons of direct reduced iron (DRI) per year, a meltshop with two electric arc furnaces (EAF), a hot rolling mill with a capacity of 2.5 million tons of hot rolled coils per year and all the associated downstream processing manufacturing lines. The project will as well manufacture to some extent green hot briquette iron (HBI) to be sold on the market. The site is located close to existing transport and energy infrastructure which enables the provision of large amounts of renewable electricity. Beside the construction of the actual manufacturing plant, the infrastructure around the site will be expanded what includes - amongst others - the construction of an "infrastructure corridor" consisting of new road and a branch of the existing railway line (outside of the EIB financing).

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 CO₂e/year absolute (gross) or 20,000 tonnes CO₂e/year relative (net) – both increases and savings.



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The project falls under Annex I of the EIA Directive 2014/52/EU amending the Directive 2011/92/EU and requires an EIA. The EIA report has been submitted to the competent authorities and the environmental permitting process is ongoing. Public consultation took place in spring 2021 and the stakeholder's consultation was completed in January 2022. The final construction permit is expected to be issued in July 2022 and includes the environmental permits. The reception of the permit will be a condition to signature of the operation.

The environmental permit and impact report have been made for a plant of 5 million tons of steel products per year. The potential expansion from 2.5 million to 5 million tons of steel per year is expected to happen in the future but is not part of the project financed by EIB. All relevant impact studies however, have been made on the assumption of a 5 million tons per year plant.

Since the project is to be developed on a "greenfield" site, there are few foreseen developments likely to generate cumulative impacts including the rail and road infrastructure and electrical substations. Cumulative impacts seems to be restricted to impacts from the development of the steelmaking plant simultaneously with the planned infrastructure corridor. Cumulative impacts are likely to include, but not be limited to heavy traffic; dust; noise; vibration; air quality; biodiversity loss; health and safety. The EIA for the manufacturing plant does not include a cumulative impact assessment. It is expected that the cumulative impacts will be assessed within the assessment of the Infrastructure Corridor Zoning Plan. This plan is under preparation and within the responsibility of the local Municipality (Boden).

The project activities as such are covered by the Industrial Emissions Directive (IED) and the legislation on the control of major chemical accidents (i.e.: the project falls under the Seveso directive, based on the natural gas and hydrogen to be handled during operation). If necessary and in collaboration with the environmental authority, additional mitigation measures for the project's operational phase will be elaborated in more details in the later stage of the project development.

SEA:

The project is part of the broader Boden industrial park development in the Boden municipality in northern Sweden. The local Boden municipality prepared in 2017 a development plan (Boden's General Plan 2025). This plan - which included the relevant industrial zone - was subject to an SEA. In respect to the infrastructure corridor, the municipality is in the process of performing a strategic environmental assessment (SEA), a condition for the setting up of the relevant Infrastructure Corridor Zoning Plan to connect the existing national transport routes (road and rail) and the industrial economic development area. The approval of the Zoning Plan by the City Council Boden Municipality is foreseen for the end of 2022.

Biodiversity:

A greenfield project of this magnitude is potentially to have certain negative impacts on the biodiversity including Natura 2000 network. Natura 2000 sites are not in the vicinity of the project and not identified and mentioned in the EIA report. Impacts and potential mitigations during construction are not discussed on the project level. Mitigation measures related to Natura 2000 site protection for the project's operational phase to be elaborated in more details in the later stage of the project development in the collaboration with the environmental authority, if necessary.



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Seveso and industrial emissions directives:

The environmental permit application of the project encompasses a safety plan, which sets out Project management measures to meet the Seveso requirements. No operations with handling of quantities of flammable products subject to an authorization under the Seveso directive have been identified in the vicinity of the planned area of operation. The project will be implemented in accordance with the relevant Best Available Techniques (BAT).

Climate Assessment

The new plant will produce high quality flat carbon steel products, which will serve multiple sectors. The chosen technology for the production of primary steel is a breakthrough technology in terms of decarbonisation and is completely different from the traditional steel manufacturing process and enables the reduction of the greenhouse gas (GHG) emissions by more than 90%. This manufacturing process is considered to be one of the most promising solutions to decarbonise primary steelmaking. The project represents a breakthrough installation in terms of decarbonisation in particular of the primary steel production. The project has major positive externalities in terms of climate mitigation as it leads to significant relative GHG emission reductions and emissions if compared to traditional primary iron and steelmaking. The project will manufacture iron and steel with a carbon footprint that is significantly lower than the substantial contribution thresholds defined in the EU taxonomy (Commission Delegated Regulation (EU)).

The project is aligned with EIB's Climate Bank Roadmap (CBR). The project represents the implementation of an innovative breakthrough low carbon technology and process in an energy intensive industry (EII). This process is a carbon direct avoidance technology widely recognised as a key technology to decarbonise production of primary iron and steel.

In terms to the risks related to climate change, the project's EIA refers to a broader risk study that identified flooding due to increased rainfalls as being the main risk due to Climate Change. However, this risk has been assessed to be low or manageable by an appropriate storm water management within the area of operations and - for example - the use of porous surfaces, water conservation and capture and the implementation of sustainable drainage design. In addition, the promoter intends to perform a climate change risk assessment (CCRA) study in accordance with international relevant standards. This study needs to be shared with the Bank as soon as available.

EIB Carbon Footprint Exercise

The carbon footprint is based on the estimation all GHG emissions related to the project. Only scope 1 and 2 emissions are considered: 38 % of the project absolute CO₂ emissions are related to electricity consumption and 62% to natural gas (NG) consumption. The vast majority of Scope 1 emissions stems from emissions related to the usage of natural gas for the carburisation of the direct reduced iron (DRI) manufacturing. After project implementation the estimated annual nominal GHG emissions of the project will amount to 573.1 kt of CO₂ per year.

The project's baseline scenario represents a realistic scenario that delivers the same output as the proposed project considering comparable quantities, quality and geographical area. The baseline scenario assumes that the new capacities are manufactured using the traditional steelmaking process for primary steel namely the blast furnace / basic oxygen furnace route (BF/BOF) followed by a hot rolling mill to finally produce hot rolled coils (HRC). In order to be conservative, the baseline scenario represents a best in class, new highly efficient and



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optimised primary steel plant inside the EU using conventional technology with a scrap ratio similar to the project.

For the downstream processing of the hot rolled coil the baseline scenario assumes that the same downstream processing is performed using similar equipment with similar electrical energy efficiency performance in Europe considering the average EU grid factor.

Based on the Bank's carbon footprint exercise methodology it is estimated that the overall project will thus result in emission saving of -4,156.1 kt of GHG per year. 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.

Comment regarding carbon footprint of the project: The above carbon footprint estimation is based on the "EIB carbon footprint methodology" which considers the country grid factor and not the purchase of renewal electricity as foreseen in this project.

Social Assessment

The Boden municipality has acquired the land necessary for the broader Boden industrial park (550 ha) and the infrastructure corridor (103 ha) through voluntary sale agreements. As such, the Promoter will purchase the land required for the project site (around 280 ha out of the 550 ha of the industrial park) directly from the municipality. As it would otherwise be subject to significant disturbances from the project, the municipality is further in the process of negotiating the purchase of a private residence located in the direct vicinity of the project site.

Gällivare sameby, a Sámi village, has reindeer husbandry rights over the land required for the project site and across the project's broader area of influence. In order to assess the impact on Gällivare sameby's reindeer husbandry and as part of the EIA process, the project has prepared a reindeer husbandry analysis in consultation with the Sámi village. Overall, the project's impact on reindeer husbandry is expected to be low. The impacted grazing areas (affected directly by land use change at the level of the project site and the infrastructure corridor, and through indirect and cumulative impacts within a further radius of 2-4 km from planned activities) are of limited quality, or located near existing disturbances, and thus rarely used. A migratory route of national interest for reindeer husbandry, located 5 km from the project site and crossing a provincial road which will be used by the project, will further be marginally impacted as a result of an increase in traffic. Gällivare sameby has also voiced concerns regarding other potential cumulative and induced impacts (e.g. the expected influx of new residents could result in further disturbances and impacts on grazing lands through new housing developments and an increase use of snow-mobiles for recreation). In light of these impacts and concerns, the Promoter is in the process of discussing remedial and benefit-sharing measures with Gällivare sameby at the level of the project. The Promoter is expecting to reach an agreement with Gällivare sameby on those in Q2 2022.

During construction, there will be on average about 2,360 employees on site, with 5,300 employees expected at peak times. During operation, the project is expected to employ roughly 1,500 full time employees (FTE). Construction workforce will mainly be housed in new temporary accommodations located at different sites across the municipality. These new accommodations will be able to house up to 3,000 people. The remaining workforce during peak times will be accommodated in existing facilities in and around Boden. During operation, the impact on the housing situation in the region is considered to be moderate as the project is implemented in an area that is moderately populated. Roughly, 170,000 people live within a one hour radius of the project site. In close contact with the affected municipalities, the promoter has performed an analysis with regard to availability of current and future housing.



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Public Consultation and Stakeholder Engagement

Public consultation of the project took place in spring 2021 and the stakeholder's consultation was completed in January 2022. The consultation has been carried out through meetings, advertisements and mailings to the relevant authorities, individuals particularly affected, associations, organisations and the general public.

Gällivare sameby is regarded as a key stakeholder by the promoter and are recognised indigenous peoples in the region of the project. In line with the spirit of the Free, Prior, Informed Consent principle, the promoter has proactively consulted Gällivare sameby from the early project development stages and during the EIA process, including for the development of the reindeer husbandry analysis. A collaboration agreement, which has defined the terms of this consultation process has been concluded between the Sami village and the promoter.

Beyond this, the promoter is committed to ongoing community engagement throughout the project's construction and operation, including with the Sámi village, and will develop and implement a Stakeholder Engagement Plan for this purpose.

Other Environmental and Social Aspects

Environmental, Social, Health and Safety Management Systems: One of the principal requirements for the EIB is the establishment of an ESHS Management System to be followed by the Project at all times, including by the EPC contractors and subcontractors during the construction phase and operation phase. The promoter is in the process of developing a comprehensive ESHS management system, including management plans, organisational systems and implementing documentation, which constitute the operational backbone of the whole ESMS as required by EIB policies. The promoter will be fully responsible for all aspects of the implementation of these plans regardless of the arrangements it may have with its contractors, with respect to performance, supervision and legal liability. The promoter plans to operate an integrated management system which is organised to comply with a number of ISO standards including ISO 14001 (environmental); OHSAS 18001 (occupational health and safety) and ISO 9001 (quality). The system and its components will be updated on a continuous basis to reflect new information, and once construction has been completed to reflect the specific requirements of Project operations.

Conclusions and Recommendations

The project will have significant positive impacts in terms GHG emissions avoidance and decarbonisation of the primary iron and steelmaking industry. However, as with any extensive greenfield industrial project, there will be some permanent and temporary negative residual impacts that need additional assessments and mitigation measures. In addition, the lenders have been supported by a lenders technical advisor in terms technical, environmental and social due diligence. Hence, the following requirements are to be met.

Conditions to be fulfilled before Financial Close:

- An agreement has been reached between the project company and Gällivare sameby village.



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- Finalisation of the public consultation in relation to the SEA/EIA of the Infrastructure Corridor Zoning Plan.
- Provision of the decision evidencing the completion of the EIA procedure for the H2GS production plant including the final environmental permit as relevant.
- The confirmation of the environmental authority that there are no significant impacts of the project and the Infrastructure Corridor Zoning Plan on the Natura 2000 network.
- Submission of the SEA report that integrates an assessment of the cumulative impacts of the project with the infrastructure corridor including the railway line and access roads.
- Provision of the Stakeholder Engagement Plan for the project.

Conditions to be fulfilled before disbursement:

- Provision of the decision evidencing the completion of the EIA/SEA procedure for the Infrastructure Corridor Zoning Plan.
- Develop a climate change vulnerability risk assessment.

Following the environmental, climate and social screening of the Project against the InvestEU sustainability proofing requirements, the environmental and social residual impacts are expected to be appropriately mitigated, compensated and remedied in compliance with the EIB Environmental and Social Standards. The final confirmation that the project is consistent with the InvestEU sustainability proofing requirements will be provided after completion of the Bank's due diligence and prior to financial close.

A second ESDS may be required at the stage of financial close, at which time further or amended conditions and undertakings may be applied. Given the conditions and assurances to be put in place as outlined above, the project is acceptable for EIB financing in environmental and social terms.