Public



Environmental and Social Data Sheet

Project Name:	STOCKHOLM BIO-ENERGY CARBON CAPTURE AND STORAGE
Project Number:	2023-0660
Country:	Sweden
Project Description:	Construction of a Bio-Energy Carbon Capture and Storage (BECCS) facility in Stockholm, Sweden.

EIA required:

yes

Project included in Carbon Footprint Exercise¹: yes

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

Environmental and Social Assessment

The project includes construction and operation of facilities to separate carbon dioxide from flue gases generated by the existing biofuel-fired cogeneration plant, as well as to compress, liquefy and temporarily store the separated carbon dioxide. After purification, liquefaction and preliminary short-term storage in buffer tanks, the captured CO_2 will be transported by ships to its final storage destination. Transportation and storage are not part of this project. The cogeneration plant is located in Stockholm, it provides useful heat to the district heating network (330 MW_{th}) and electricity to the national grid (135 MW_e). The Circulating Fluidised Bed boiler of heat output 375 MW combusts forest residues (around 680 000 t/year). The efficiency of the plant is above 100 % due to the installation of 95 MW_{th} flue gas condenser.

Environmental Assessment

The investment falls within Annex I of the EIA Directive 2011/92/EC amended by Directive 2014/52/EU thus requiring an Environmental Impact Assessment.

The EIA report was completed on 28 March 2023 and the application for the permit was submitted to the competent authority. The environmental permit was issued on 28 March 2024.

The environmental impacts of the project include positive effects on climate (around 800,000 t/year of negative CO_2 emissions for 15 years), emissions to the air (mostly nitrogen oxides (NO_x), sulphur dioxide (SO₂) and dust) which will be similar or lower than the current emissions of pollutants from the plant due to the additional flue gases purification step. Negative effects expected are noise during the construction and operation (to be mitigated by compulsory application of Swedish Environmental Protection Agency's guidelines for noise from construction sites and – if limits imposed by the guidelines are occasionally exceeded – conducting of works in consultation with the supervisory authority on Monday – Friday, between

¹ 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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7:00 and 19:00, neutral or negligible impact on water quality. Also, the negative consequences linked to chemicals use by the CO₂ capture plant are considered to be negligible.

Transportation and storage of CO_2 will be provided by third parties, captured CO_2 will be transported by ships and stored onshore or offshore in a separate location not dedicated solely to the project.

Climate change has been taken into account in studies and planning of the project. The issues to be potentially created by existing low points where water accumulates during heavy rainfall will be addressed by an elevation of the area where facilities and buildings are going to be constructed.

The project supports the emission reduction targets of Sweden, which aims at achieving zero net emissions of greenhouse gases into the atmosphere by 2045, and negative emissions after that.

The project is to be implemented in an industrial environment within the existing sites (Värtan area of Stockholm, where the existing biofuel-fired cogeneration plant is located next to the port facilities) therefore no impact on biodiversity and protected areas is expected.

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 (Innovation, Carbon Capture and Storage), potential physical exposure to climate change mitigated).

The Promoter purchases 1,1 million t of biomass per year mainly in Sweden and in the Baltic States. Stockholm Exergi policy documents on sustainable biomass sourcing include Supplier Code of Conduct, Sustainability Policy, Guidelines for Responsible Fuel Supply. Every supplier of biomass needs to contractually accept and commit to Supplier Code of Conduct and accept Exergi's right to audit the supplier and full supply chain. Main legal requirements concerning sourcing of biomass relate to compliance with EU RED II (Directive (EU) 2018/2001) and RED III (Directive (EU) 2023/2413, from May 2025), EU Timber Regulation (EU/995/2010) and EU Deforestation Regulation (EU/2023/1115, from 2024).

Swedish suppliers need to be Chain of custody-certified with at least FSC controlled wood claim or equal standards and hold a Sustainability Notice that shows compliance with Renewable Energy Directive. In the case supplier lacks Sustainability Notice from Swedish Energy Agency an audit by a third party must show compliance with RED. For other suppliers Sustainable Biomass Program (SBP) or Sustainable Resources Verification System (SURE) or equal certification schemes for RED compliance approved by the EU Commission are compulsory. In the case supplier lacks RED compliance certification an audit by a third party must show compliance with RED.

The Bank reviewed the environmental and social capacity of the Promoter including its organisation, processes and procedures, and deemed them to be excellent.

EIB Carbon Footprint Exercise

Estimated annual emissions of project in a standard year of operation: zero absolute emissions (biomass boiler), around 800 kt CO_{2e} /year sequestered underground due to capture and subsequent storage of CO_2 generated by biomass plant, giving – 800 kt CO_{2e} /year relative emissions. The number takes into account CO_2 losses during transportation.



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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.

EIB Paris Alignment for Counterparties (PATH) Framework

Stockholm Exergi AB is "In scope" (subject to PATH assessment) and screened in for both (i) active in high emitting sector and (ii) exposed to high physical risk.

The counterparty already meets the requirements of the EIB PATH framework with its existing alignment plans.

Public Consultation and Stakeholder Engagement

The EIA process started with the consultation with authorities conducted in February 2021 and September 2022. Also in September 2022, public consultations were conducted. One remark was filed during these processes. It was related to the detailed design of a piping bridge crossing above the road. The presented arguments were considered by the competent authority and found not applicable.

Conclusions and Recommendations

Based on the information available, the Project is expected to have positive, neutral and, in some cases, minor negative residual impacts.

The project is thus acceptable for Bank financing from an environmental and social perspective provided the fulfilment of the following conditions and undertakings:

- Before the first disbursement the Promoter will notify the Bank about the selected storage site and provide evidence on the relevant environmental storage permit to the Bank's satisfaction.
- The Promoter undertakes to take into account and implement conditions expressed in the environmental permit for the project.
- The Promoter undertakes to store and keep updated any documents as may be relevant for the project supporting the compliance with the provisions under the EU Habitats and Birds Directives and shall upon request promptly deliver such documents to the Bank.
- All the biomass sourced as a fuel for the project need to align with the EU biomass sustainability criteria principles as defined in the EU RED II (Directive EU 2018/2001) and RED III (Directive (EU) 2023/2413, from May 2025), EU Timber Regulation (EU/995/2010) and EU Deforestation Regulation (EU/2023/1115, from 2024).
- Wood supply chain and the underlying forest management practices are to be certified, or if not yet certified, they have to be aligned with the standards so as to be certifiable by internationally accredited certification schemes (e.g., FSC, PEFC or equal standards).
- The Promoter undertakes not to invest in incompatible activities, in line with the EIB's PATH framework.
- The Promoter will ensure compliance of (its providers with) the transportation and storage of CO₂ with the Substantial Contribution Criteria to Climate Mitigation for transport and storage of CO₂ as defined by the Commission Delegated Regulation (EU) 2021/21391, Section 5.11 Transport of CO₂, and 5.12 Underground permanent geological storage of CO₂.