Luxembourg, 28.07.2019

Public
Environmental and Social Data Sheet

Overview

Project Name:	ZENTRUM FUER RESSOURCEN UND ENERGIE HAMBURG
Project Number:	2018-0405
Country:	GERMANY
Project Description:	Design, construction, operation and maintenance of different process interconnected waste treatment facilities processing around 320,000 tonnes/year mainly generated by the inhabitants of Hamburg North-West Region (RNW). The project aims at recovering both material and energy. The energy generated is injected into the municipal district heating network, the gas network and the electrical distribution network. The facilities will be located in Stellinger Moor, Hamburg.

EIA required:	yes
Project included in Carbon Footprint Exercise:	yes

Environmental and Social Assessment

Environmental Assessment

The project concerns the implementation and operation of different waste facilities for the treatment of around 320,000 tonnes/year of residual Municipal Solid Waste (MSW) and various organic waste streams generated in the greater region of the city of Hamburg.

The project comprises a Material Recovery Facility (MRF) as part of a Mechanical Biological Treatment (MBT) plant for residual waste with a nominal capacity of 140,000 tonnes/year that also comprises an anaerobic digestion unit for the separated organic fraction. The MRF also comprises a drying unit for the organic fraction and externally sourced biomass. Part of the project is also an anaerobic digestion unit for separately collected bio-waste with an annual capacity of 45,000 tonnes/year. Both anaerobic digestion units (for residual waste and separately collected bio-waste) together produce ca. 12 MW_{th} of gas, and comprise a facility for upgrading of produced biogas to biomethane and its feeding into the local natural gas grid. The project also includes a combined heat and power plant (CHP) with two lines, one for Refuse Derived Fuel (RDF) and one for a low calorific value biomass from waste. A large share of the inputs are produced in the MBT plant. Together the two CHP lines generate a total of up to 60 MW_{th} and 15 MW_{el} respectively.

A unique feature of this project is the coexistence of these components at one site and their close process interconnection to one innovative system capturing synergies in resource flows.

Luxembourg, 28.07.2019

All facilities interact closely and provide a maximum flexibility and efficiency between all different units. This holistic approach results in the highest possible rate of recycling and allows recovering the maximal yield of energy. At the same time, waste transports between the individual process steps are minimised, thus lowering Greenhouse gases emissions.

Due to its technical requirements the project falls under Annex I of Directive 2014/52/EU amending the EIA Directive 2011/92/EU. This makes a full Environmental Impact Assessment process compulsory for authorisation. The promoter in close collaboration with the competent authority undertook environmental scoping in 2017. A planning application in response to the national EIA requirements and legislation - having transposed EU law – will be submitted in course Q4/2019 to the competent authority (*Behörde für Umwelt und Energie - BUE - der Freien und Hansestadt Hamburg*). The promoter expects the corresponding authorisation to be issued in two phases, namely for the Material Recovery Facility (MRF) and the Combined Heat and Power (CHP) plant in 2020 and the biogas unit in 2021.

Some project activities fall under the Seveso III Directive 2012/18/EC –Technological Disaster Risk Reduction-, as transposed into national law (*Störfallverordnung, 12. BImSchV*). All components of the project would consequently have to comply with corresponding requirements.

The facilities are located on a brownfield site where a waste incineration plant was operated until 2015. The closest Natura 2000 site is Mühlenberger Loch (6.8 km distance to the project). The EIA studies comprise an assessment of project impacts on protected sites.

The Bank's Services have reviewed an advanced draft version of environmental impact assessment studies during appraisal. The project's main expected environmental impacts as assessed in the draft EIA studies are noise, dust and increased traffic during the construction of the plant, and waste (ash and flue gas cleaning residues), noise and airborne pollutants during its operation. The draft EIA studies conclude that project-related impacts will be unlikely to cause any significant negative residual effects to the environment post mitigation. These conclusions are however still provisional and subject to the assessment by the competent authority and public consultation.

The current basic design of the facilities suggests that proven, best available technologies especially for the Combined Heat and Power (CHP) plant and air pollutant abatement equipment will be implemented, as required by the Directive 2010/75/EU on Industrial Emissions. The entire CHP process is expected to be wastewater free. The exhaust gas purification system is able to safely and permanently comply with the required limit values. Finally, to prevent odour emissions during the operation of the CHP plant, the exhaust air from the tipping hall and from the bunker is extracted and used as primary air in the furnace during operation.

The project is directly connected to the A7 federal motorway (Flensburg - Füssen) via the Hamburg-Volkspark junction. Therefore, it is expected that the project will benefit from this connection in terms of waste collection and logistic practices. This connection will result in less kilometres to be travelled, thus lowering GHGs emissions.

The promoter has significant experience in the implementation and operation of similar installations. Its environmental and social management capacity is deemed satisfactory.

Luxembourg, 28.07.2019

EIB Carbon Footprint Exercise

The baseline for calculating the emission for the CHP plant is a basic MBT with a nominal capacity of 320,000 tons/year. The emissions factor for CHP plant have been calculated assuming that around 50 % of the energy input is of fossil origin. As a result, estimated annual relative emissions of the facilities are calculated at -97.6 kt $CO_{2eq.}$/year.

Social Assessment

The facilities are located in Hamburg on the site of former Stellinger Moor waste-to energy facility, in an urban environment and are connected to the public road network via the main road Schnackenburgallee, which connects the districts of Eidelstedt and Bahrenfeld. The distance to the nearest residential development is approx. 200 m (garden with established residential use) and 725 m (potential residential development). The project will replace an old incinerator at the same site.

Public Consultation and Stakeholder Engagement

Since 2016, the project has been discussing by the promoter at various energy and waste-related events, both regionally and beyond. Upon request of the civil society, the city of Hamburg has just committed to phasing out heat generation from coal by 2030 in the latest. In this context, the ZRE project is widely considered as one key contributor to fill this upcoming supply gap with heat from a partially renewable resource.

The project's scoping meeting in October 2017 was carried out in the presence of multiple representatives from relevant authorities and other stakeholders. The meeting served the discussion of the project and its potential environmental risks. Subsequently, the competent authority defined the scope of required EIA studies. Comprehensive documentation about the scoping meeting is available to the Bank. A first round of public consultation as part of the project's EIA process is expected to take place in the first half of 2020.

Conclusions and Recommendations

On the basis of the above, the Bank will require the following environmental and social loan conditions in its finance contract:

- Prior to any disbursement relating to Material Recovery Facility (MRF) and Combined Heat and Power plant, the promoter shall provide to the Bank the final version of Environmental Impact Assessment studies including Non-Technical Summary (NTS) and the corresponding permit(s) for the construction and operation of the Material Recovery Facility (MRF) and Combined Heat and Power plant, according to the provisions of the national legislation.
- Prior to any disbursement relating to all remaining project components, the promoter shall provide to the Bank the final version of Environmental Impact Assessment studies including Non-Technical Summary (NTS) and the corresponding permits for the construction and operation of all remaining project components, according to the provisions of the national legislation.

Luxembourg, 28.07.2019

- To guarantee the environmental sustainability of the project the promoter shall secure the third party waste in the surrounding regions in accordance the proximity principle.

The capacity of the promoter to manage the environmental and social issues is deemed good.

The project is publicly known and expected to deliver waste management and energy services with high regional relevance.

Therefore, subject to the conditions mentioned above, this operation is acceptable for the Bank in environmental and social terms.

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