Luxembourg, 30/10/2015

Environmental and Social Data Sheet

Overview

Project Name: **KILPILAHTI CHP**

Project Number: 2014-0600

Country: *FINLAND*

Project Description: The project consists of a combined heat and power (CHP) generating plant, serving the existing industrial area of Kilpilahti (oil refinery and petrochemical industries). The power plant replaces the old, polluting units for which the retrofitting of modern flue gas cleaning is not feasible. The project valorises low-value oil refining and petrochemical side streams for energy production. The project is developed as a joint-venture of main industries situated in the industrial plant.

EIA required: yes

Project included in Carbon Footprint Exercise[1]: yes

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

Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

The project is a replacement investment where three existing steam and electricity generating units are replaced with three new units for environmental (gaseous emissions) and technical (age, efficiency) reasons. The new units are situated within existing industrial site perimeter and social and environmental effects to the outside of that industrial area are mainly the gaseous emissions from the plant. These gaseous emissions are reduced by enhanced combustion technology, and cleaned with best available technologies (BAT) to comply with future emission standards. The fuel mix of the new power plant is changed towards refining residues instead of present situation that relies on natural gas. An EIA was required and has been completed

The project is a CHP plant with emphasis on generating reliable high-pressure steam supply for industrial processes. Electricity is a by-product. The project fulfils the definition of high-efficiency CHP as stipulated in Directive 2012/27/EU. The project as a fossil-fuel fired plant does not have a feasible renewable alternative, as the refining and chemical industry sidestreams produced at the industrial site cannot reasonably be transported and consumed outside the site. The regional (forest) biomass supply is as well fully utilized by forest industry and municipal CHP plants and any biomass scheme would need to rely on imported fuel.

The project allows the Kilpilahti industrial plant to be continued to operate, with continuing industrial employment of 4000 people, provides during implementation 1100 person-years of employment and during operation the employment for 12 new personnel. Overall, the environmental impacts of the project are acceptable, the expected emissions are within appropriate standards and by large improving the existing situation. Socially the projects main impact is the positive employment effect. The project is considered suitable for the Bank's financing.

[1] Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO2e/year absolute (gross) or 20,000 tons CO2e/year relative (net) – both increases and savings.

Environmental and Social Assessment

Environmental Assessment

The project has been subject to a formal EIA process, which was started in 2013 and completed on 14th of May 2014 by the competent authority approving the EIA. The EIA study found that expected emissions were in essence decreased (NOx, SOx), or continued at the present levels (particles). Other environmental impacts outside the industrial site were not found to be significant. The overall integrated industrial site is subject to Finnish environmental permit processes that requires the renewal of the environmental permits on five-year cycle and allows the competent authority to review the permit conditions according to the applicable environmental legislation.

The industrial site, including refinery and power plant, will continue being subject to the carbon emission trading scheme, including annual reductions of the free allocations. The power plant is in compliance to the definition of the high-efficiency CHP of the Directive 2012/27/EU. It fulfils the definition narrowly, as the significant product of the power plant is high-pressure steam that is not used for electricity production (1/3 of the heat production). The back-pressure steam requirements (2/3 of the heat demand) are as well on relatively high pressure level of 16 bar, leaving little energy for electricity production.

The refinery produces fuels as well from renewable sources. The amount of these 2nd generation biofuels is only < 1% of the production of the Kilpilahti site (the main production sites are in Rotterdam and Singapore). This renewable production has as well created controversy among NGOs, as one of the feedstocks of renewable fuels is palm oil, and increased demand of palm oil has resulted in extension of palm plantations in tropics and taking space from natural forests.

EIB Carbon Footprint Exercise

The absolute annual carbon emissions of the plant is estimated at 786 ktCO2/year. Compared to the baseline (a lifetime extension and refurbishment of the existing plant to bring it in line with the requirements of the IED Directive), this is a relative carbon emissions decrease of 71 ktCO2/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.

Use of refinery residues and gases for energy generation also potentially avoids more wasteful ways of disposal, such as flaring.

Social Assessment, where applicable

The social impacts of the project during implementation and operation are mainly related to the employment effects and are by and large positive. Simultaneously to the project the energy production of the industrial site is re-organized to separate companies owning the power generating assets and operating them. Such re-organization is expected to improve the operations in the medium and long term, and on short term requires the personnel to renew their working practices.

The social impacts of large works site during implementation are not expected to be significant in the context of the refinery site that is already periodically subject to large revisions and improvement projects. The industrial site has rigorous working rules and applies high level occupational H&S and labour standards. The traffic impacts of the construction are as well overshadowed by continuous delivery traffic of the refinery, and reduced by the good

traffic connections that have been arranged from the refinery to the main Finnish road networks.

Public Consultation and Stakeholder Engagement, where required

Consultation carried out under the EIA process.

NGO issues relating to the industrial site are mainly focussed on renewable fuel production from palm oil; this power plant project is not related to this issue.

Other Environmental and Social Aspects

None

PJ/ECSO 10.07.12