Environmental and Social Data Sheet

Overview

Project Name:	CCCFL II - HENAN GUSHI BIOMASS
Project Number:	2013-0464
Country:	China
Project Description:	The project is an allocation under the CCCFL II. The loan will contribute to the financing of a biomass CHP unit (25 MWe – 54 MWth) in the City of Gushi (Henan province, China). The plant will run on sustainable biomass sourced regionally. The electricity will be fed into the national grid and the generated heat will be supplied to a heat/steam network currently under development. When the Project will be completed, existing small and inefficient coal steam boilers will be decommissioned.
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 concerns a 25 MWe/54 MWth biomass combined heat and power (CHP) plant. It contributes to an increased utilisation of renewable energy sources and the replacement of inefficient coal fired boilers. As such, the project is expected to bring positive environmental impacts.

Gushi County has no district heating facilities. Small and inefficient coal fired boilers are widely used for supply of steam to local factories and hot water heating for buildings. According to Gushi County's environmental regulations and local development plan, these small coal-fired boilers must be phased out in the near future.

The project is subject to an EIA process which is ongoing. An EIA report has been prepared and submitted to the competent authorities for approval. At this stage, no significant environmental or social impacts are expected. Nevertheless, certain gaps in the EIA, which were identified by the Bank, will be addressed prior to disbursement. A comprehensive set of undertakings has been proposed in order to ensure that all biomass consumed by the project will originate from sustainable sources and that farmers get a fair price for the biomass they deliver to the collection centres.

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Based on the above, the project is considered acceptable for Bank financing from a social and environmental point of view, with conditions.

[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 CO_2 e/year absolute (gross) or 20,000 tons CO2e/year relative (net) – both increases and savings.

Environmental and Social Assessment

Environmental Assessment

EIA

An EIA report has been prepared and submitted to the Provincial Environmental Protection Bureau (PEPB) for approval. The Bank reviewed the EIA report and identified certain gaps that will have to be closed prior to disbursement. These include amongst others the need for updated technical baseline data (2008 data), including the district heating network component, define monitoring measures for controlling chloride pollutant in emissions due to biomass low temperature combustion, analysis of social impact to farmers caused by biomass collection, and further proof of public consultation.

The promoter is currently in the process of updating the EIA in line with Chinese national EIA regulations and the EIB's requirements.

The project's main impacts are mainly related to noise, dust, waste management, emission treatment and biomass collection and transport. Appropriate mitigation measures are proposed for noise control, dust control, solid waste disposal, wastewater discharge, and emission control.

With regards to transport, noise absorption walls will be built alongside the most utilised sections of road to reduce the noise impact. Also, the promoter will be working with the biomass collection agents and the local vehicle control bureau to strength the training and education of the truck drivers on driving safety and periodic maintenances.

Regarding emission treatment, the plant will comply with Chinese legislation as well as EU emission standards (Industrial Emission Directive (IED) 2010/75/EC). With regards to the risk of dioxins, the stack design is critical to minimize formulation of dioxins by controlling the flue gas temperature and resident time in the stack. At this stage, the project design can be considered best practice and does not raise concern. The promoter will implement a sampling and monitoring program to monitor compliance with the EU power plant emission standards, e.g. 0.1 ng/Nm3 (EU Directive 2010-75 Industrial Emissions). Should the Project CHP plant emission be over the EU permitted limit, the Promoter shall take essential measurements to reduce the dioxins emissions.

Biomass

The project is designed for an annual consumption of around 250,000 tons of agriculture and forest based biomass residue collected within a ± 50 km radius around the heat and power plant. The biomass feedstock consists of rice straw (48 %), rice hull (9 %), wheat straw (10 %), wood mix (20 %) and others (13%). The plant's consumption represents ± 10 % of the crop stalks yield (2.5 million tons/year) in the area in which also supplementary ± 300.000 tons of shrubs and woodcuttings are generated by wood and forestry industry.

SO_2 and NOx emission concentrations for the biomass fuel are low and should meet the permitted limits without installing any treatment measures. However, an on-line monitoring of SO_2 and NOx concentrations will be implemented to monitor emission compliance and ensure no other fuels used in the biomass CHP plant.

Collection of biomass will be organized through ± 60 collection stations at the different townships in the project area, where centralized collection from the farmers, processing and stockpiling of fuel will be done. Transport of biomass will be done by truck which involves ± 12,000 truck trips per annum (or daily 40 truck trips) to supply the biomass with average 30 km per single trip. Therefore, total annual mileage would be 360,000 kilometres.

The plant design and business plan only allows biomass as fuel except for the two gas fuelled back-up boilers as reserve to guarantee the delivery of heat in case of breakdown or maintenance of the plant.

EIB Carbon Footprint Exercise

In accordance with the Bank's Carbon Footprint methodology, it is calculated that the total relative effect of the biomass CHP plant with the use of less than 10 % gas as back-up is a net reduction in CO2 equivalent emissions by 310 kt CO2e/yr. This calculation assumes a national fuel mix for power generation of 66 % coal, 22 % hydro, 5 % wind, 3 % natural gas, 1 % nuclear and 3 % others (overall grid emission factor of 911 ton CO2/GWh). It is further assumed that cogenerated district heat substitutes heat generation from existing generation fossil fuel (coal) low efficient heat boilers.

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.

Social Assessment

As the biomass is collected by intermediary agents, the risk exists that they take advantage of their position and will avoid paying fair prices to the farmers who bring their biomass to the collecting centres.

Consequently, to secure fair payment for the biomass and allow control of the biomass sourcing, a comprehensive automated biomass monitoring and management system will be set up that monitors origin, quality and price (paid to farmer) of biomass.

The project will be constructed on an open plot in the industrial zone and will not trigger any involuntary resettlement. Occupational and Community Health and Safety issues are deemed appropriately addressed in the authorisation process. The promoter has a comprehensive health and safety policy in plan. The implementation of the project is not expected to raise significant social issues.

The nearest residential housings are situated 500 m from the site boundary. The impact on these housing will be reduced with appropriate mitigation measures (specified maximum noise levels, different for day- time works, night-time and during weekends). The promoter undertakes to monitor noise levels systematically after commissioning and start up.

The promoter has substantial experience in the implementation and operation of energy infrastructure. It seems also that the promoter has o high environmental and social management capacity.

The promoter has a human resource policy that complies with local regulatory requirements and is applied consistently to all employees and where applicable to subcontractors. As required by law, the policy is included in employment contracts and addresses working conditions, terms of employment, and wages and benefits. As is common practice in China, although not explicitly stated, employment relationships recognise the principals of non-discrimination and equal opportunity.

Under PRC law, employees have the right to freedom of association and have the opportunity to collectively represent to the management any issues or grievances that they may have.

There are no forced labour practices and the company does not hire workers below the age of 18 years.

Public Consultation and Stakeholder Engagement

Consultation of the public and relevant authorities is an integral part of the EIA process. Two public consultations meetings have been conducted in March 2014 and comments and any complaints were documented and included in the EIS.