

TGF Project Profile : Khimprom Waste Coke Oven Gas Utilisation Project, Kemerovo, Western Siberia, Russia

The Project Activity

The Khimprom waste coke oven gas utilisation, is a Joint Implementation project developed between the Russian Federation and the investor countries and companies of the Baltic Sea Region Testing Ground Facility (Iceland, Norway, Sweden, Denmark, Finland and Germany, DONG Naturgas, Fortum, Kymppivoima, Kerevan Energia, Gasum, Vapo and Vattenfall). The JI project was prepared by NEFCO on behalf of TGF (in its capacity as Fund Manager to the Facility). The project developer and owner is the privately owned company, OOO Khimprom.

OOO “Khimprom” is a major chemical company producing a wide range of products both for industries and large-scale consumers, including caustic soda, liquid chlorine, different grades of hydrochloric acid, various automotive care products, propylene oxide, propylene glycol, etc. The main production process involves electrolysis, of which chlorine and caustic soda are the resulting products. The process is very energy intensive and demands much electricity and heat. Within the cost structure for production, energy costs account for as much as 50% of total production costs.



Existing Gas Fired Boiler at Khimprom Works

Coke oven gas produced at an adjacent facility is currently used for the companies own purposes in addition to being sold for use at the Kemerovo thermal power plant. A significant amount of excess coke oven gas is still produced which is currently flared. Nearby is the boiler house belonging to the OOO Khimprom chemical works, which currently holds three gas-fired boilers producing 25 tonnes/hour of steam. In addition to producing its own steam, Khimprom also purchases steam from the Kemerovo thermal power plant.

The project proposes to deliver a proportion of the excess coke oven gas produced by OAO “Koks” by pipeline to the OOO Khimprom Ltd boiler house, where two new boilers, each with a capacity of 25 tonnes steam/hr, are to be installed, and will operate exclusively on coke oven gas. These new boilers will substitute two of the existing gas-fired boilers. The remaining gas fired boiler will be kept for stand-by purposes. In addition purchase of steam from the Kemerovo thermal power plant will also cease.



Old Natural Gas Pipeline

Technology

Implementation of the project therefore requires:

- Construction of a gas pipeline from the coke oven facility to the Khimprom boiler house (approx. length 2 km);
- Installation of two boilers designed for combustion of coke oven gas;
- Increase in the capacity of boiler feed water treatment plant;
- Extension of the existing Khimprom boiler house.

Capital equipment to be used is sourced from Russian suppliers.

Nature of Emission Reductions

The burning of organic and process fuels causes GHG emissions. Natural gas, coal and coke oven gas generate the following GHGs: CO₂, N₂O, CH₄ of which the amount of the latter two is negligible compared with CO₂ (according to IPCC emission factors). Under the proposed JI project waste coke oven gas from JSC "Cox" that is now flared and fired in the open air will be used as a fuel at Khimprom's boiler house for industrial steam generation. For this purpose 2 new coke oven gas fired boilers are to be constructed. In respect of the amount of GHG emissions coke oven gas firing in the open air is the same as its firing in boilers.

The investment project will result in an emission reduction of 332,000 tCO₂e. The emission reductions are purchased by the TGF.

For a full explanation of the methodology used please refer to the Project Design Document.

Contribution of Carbon Finance

The project is financed through a mixture of own equity, loans from local banks and the Kuzbass Centre for Saving Energy and carbon finance contribution from the TGF.

The TGF contribution forms a significant (confidential) proportion of the capital invested in the project is used to overcome financial barriers owing to the recent re-structuring of the company.

For Further Information

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For General Information on the TGF, visit
<http://www.nefco.org/tgf>