CDM Project in Henan Province (China)

Luohe Municipal Solid Waste Landfill Gas Recovery to Power Project

Background

China has environmental regulations in place to deal with the management of landfills and to encourage utilization of landfill gas (LFG). However, due to a lack of environmental technology know-how, in China the municipal refuse is mainly still disposed using the technology of traditional landfill, without consideration of recovery and utilization of landfill methane. It is estimated that the annual quantity of municipal refuse filled is about 50 million tons. As nearly all landfills – except several recently built new landfills – are not equipped with landfill gas recovery mechanisms, enormous amounts of landfill methane are emitted into the atmosphere.

Project Description

The Luohe MSW Landfill Site LFG Recovery to Power Project aims to recover and destroy landfill gas generated at the municipal solid waste (MSW) landfill site in Luohe city, Henan province (China). The collected LFG is used for electricity production.

The Luohe city landfill area #1, started operation in 2004 and has a capacity of 2.4 million tons of solid waste. It is expected to run for a total of 15 years, till 2019. Degassing pipelines have been installed on the landfill site for safety reasons only and since no LFG collection and/or destruction facilities existed prior to the proposed project activity, the baseline scenario without the project envisaged the release of LFG directly into the atmosphere.

The project is employing a gas collection, transmitting and pretreatment system as well as gas engines with a capacity of 2 MW. The recovered LFG is combusted in the gas engines to produce electricity which are fed into the Central China Power Grid (CCPG) afterwards. GHG emission reductions are claimed from both methane recovery and the replacement of fossil fuel based electricity.

It is estimated that during the 10 years crediting period the proposed project activity will destroy 14,500 tons of methane and replace 177,000 MWh of electricity otherwise generated via fossil fuel combustion: this will mean a potential GHG reduction of approximately 420,000 t CO_2e.

Detail of Luohe's LFG collection and pre-treatment system.

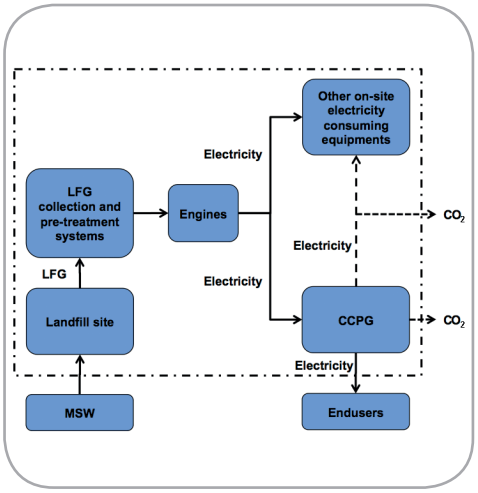
Key Facts

Project Type	Landfill Gas (LFG)
Project Owner	Shanghai Baichuan Changyin Co., Ltd (BCCY)
Project Developer	UPM Umwelt-Projekt-Management GmbH
Location	Luohe city, Henan province, China
Methodology	Landfill methane recovery - AMS-III.G., ver. 6 Grid connected renewable electricity generation – AMS-I.D, ver. 15
Carbon Credit Standard	CDM Certified Emission Reductions (CDM CERs), CDM Ref. 5238
Validator (DOE)	Germanischer Lloyd Certification GmbH
Development Status	Registered, Credits issued
Registration Date	07/10/2011
Date of First Credit Issuance	10/01/2014
Annual Credit Volume	approximately 42,000 CERs
Crediting Period	10 years

Sustainability Benefits

The proposed project activity not only reduces GHG emissions, but also brings the following economic, social, environmental and technological benefits to the local community:

- **Economic Benefits:** By replacing Central China Power Grid (CCPG) electricity based on fossil fuel use, the project activity allows to reduce China's dependency on fossil energy sources and contributes to stabilizing power supply for businesses and private households in the project area.
- **Social Benefits:** The project activity is expected to increase job opportunities by way of creating 15 new posts available to local residents during both construction and operation of the power plant. Furthermore, the LFG project reduces potential dangers of fire and explosion on the landfill site by recovering the LFG. This strongly enhances the safety conditions of the landfill site.
- **Environmental Benefits:** The proposed project activity is reducing air pollution by destroying LFG which contains H_2S, thus avoiding unbearable H_2S odours. As a consequence, the living conditions of the neighbourhood are improved considerably.
- **Technological Benefits:** By promoting LFG recovery and utilization, the proposed project activity provides a tangible demonstration of successful application of this technology in China.



Flow diagram and project boundaries of the Luohe landfill gas project.

Project Location

The project plant is located at Luohe City MSW landfill site, one kilometer south of Chengang village, Luohe City, in China's Henan Province.

The map shows the project location in China's Henan Province.

Contact

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