



CDM Project in Henan Province (China)

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

The Jiyuan city landfill site started operation in 2004 and has a capacity of 1.6 million tons of solid waste. It is expected to run for a total of 14 years, till 2018. Degassing pipes 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 will employ a gas collection, transmitting and pre-treatment system as well as gas engines with a capacity of 1.5 MW. The recovered LFG will be combusted in the gas engines to produce electricity which will be fed into the Central China Power Grid (CCPG) afterwards. GHG emission reductions will be claimed from both methane recovery and the replacement of electricity mainly generated by the utilization of fossil fuels.

It is estimated that during the 10 years crediting period the proposed project activity will destroy 11,090 tons of methane and replace 77,936 MWh of electricity otherwise generated via fossil fuel combustion: this will mean a potential GHG reduction of approximately 290,000 t CO₂e.



Degassification drilling at Jiyuan landfill site.

Key Facts

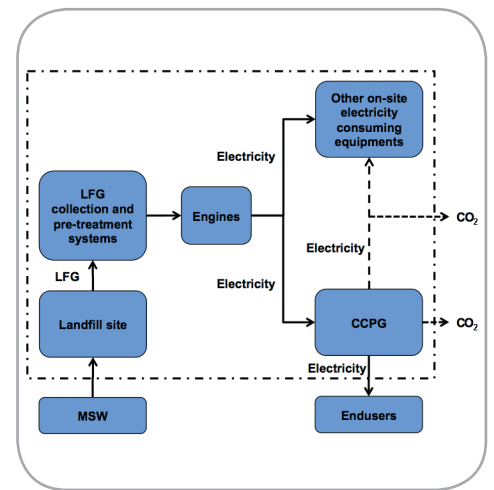
Project Type	Landfill Gas (LFG)
Project Owner	Shanghai Baichuan Changyin Co., Ltd (BCCY)
Project Developer	UPM Umwelt-Projekt-Management GmbH
Location	Jiyuan city, Henan province, China
Methodology	Landfill methane recovery - AMS-III.G., ver. 6
Carbon Credit Standard	Grid connected renewable electricity generation – AMS-I.D, ver. 15
Validator (DOE)	CDM Certified Emission Reductions (CDM CERs), CDM Ref. 5316
Development Status	Germanischer Lloyd Certification GmbH
Registration Date	registered
Date of First Credit Issuance	12/04/2012
Annual Credit Volume	November 2016 (expected)
Crediting Period	approximately 29,000 CERs
	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 enhances the safety conditions of the landfill site.
- Environmental Benefits:** The proposed project activity will reduce air pollution by destroying LFG which contains H₂S, thus avoiding unbearable H₂S 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 Jiyuan landfill gas project.

Project Location

The project plant is located at Jiyuan City MSW landfill site, southwest of Zhicheng Town and northeast of Zaoshuling Village, 10 km away from downtown of Jiyuan City in China's Henan Province.

Contact

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