

Beixu Group Methane to Energy Project

Project Development Document Introduction

Project Name: Beixu Group Methane to Energy Project

Name in local language: 北徐集团甲烷回收利用项目

Host country: China

Region/State/Province: Henan

City/Town/Community: Linying

Coordinates: 33°48'43"N 113°57'06"E

Scope: 15 Agriculture, 01 Energy Industries (renewable)

Gold Standard Eligible Category: A.1.1.2 Biogas

Methodologies: AMS-I.D., AMS-III.D.

tCO₂e/a: 50'000

Operation Starting date: 2008-09-01

First Crediting period: 7 years

Short Description:

The proposed project locates at Beixu Group Co., Ltd., Linying County, Henan Province. Purpose of the project is to install anaerobic digestion based manure treatment system with methane recovery equipments. Methane collected will be used for electricity generation with internal combustion engines and generators.

Beixu Group owns a swine farm with annual population of 100,000. The farm uses flushing system to collect the manure automatically. In project scenario, the manure will be flushed to the anaerobic digestion reactors. After anaerobic digestion, the wastewater is treated aerobically and then used for agriculture irrigation. The project is expected to collect 2,400,000 nm³ a year. The electricity generation is estimated to be 9,000 MWh a year. The estimated emission reductions amount is 50,000 tCO₂e/yr.

In absence of the project activity, manure will be left to decay in several anaerobic lagoons and equivalent amount of electricity would have been supplied from North China Power Grid. The major lagoon has concrete walls and floor. The lagoon is not covered; methane from decay is emitted into atmosphere directly.

Contribution to Sustainable Development of the Project

Besides its contribution to climate change mitigation, the Project contributes to sustainable development in China as follows:

Component	Score	Rational
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• Indicators	(-2 to +2)	
Local / Regional / Global Environment		
• Water quality and quantity	+2	Implementation of the proposed project includes replacing original anaerobic lagoon with modern manure processing system, in which COD will be greatly reduced. Hence discharged water from the new system is in much better quality in comparison with <u>baseline practice</u> .
• Air quality (emissions other than GHG)	+1	Bad odour will be eliminated in the project scenario.
• Other pollutants (including, where relevant, toxicity, radioactivity, POPs, stratospheric ozone layer depleting gases)	0	No significant change comparing with baseline.
• Soil condition (quality and quantity)	+2	Soil pollution from current manure system will be prevented. Solid and liquid emissions from the project activity will be used as organic fertilizer. Soil quality will be improved.
• Biodiversity (species and habitat conservation)	0	As compared to the baseline, no significant change in biodiversity is expected since the project only takes place within the farm boundary.
Sub Total	+5	
Social Sustainability and Development		
• Employment (including job quality, fulfilment of labour standards)	+2	The project leads to employment generation in the power plant itself and in the implementation as a GS CDM project. These jobs do have a significant impact on job quality, mainly because it is the first time the advanced concept of <i>clean development</i> and <i>recycling economy</i> is introduced to local farmers involved.
• Livelihood of the poor (including poverty alleviation, distributional equity, and access to essential services)	+1	The project will generate additional income to farmers involved.
• Access to energy services	+1	The project activity adds renewable capacity to grid and helps improving electricity availability.
• Human and institutional capacity (including empowerment, education, involvement, gender)	+1	People involved are trained with skills for operation of the power generation facility and knowledge of Kyoto Protocol. This is the first time local farmers are organised to work on a project under the Kyoto Protocol.
Sub Total	+5	

Economic and Technological Development		
<ul style="list-style-type: none"> • Employment (numbers) 	+2	The project activity generates employment opportunities during the project's construction and operation period.
<ul style="list-style-type: none"> • Balance of payments (sustainability) 	0	No significant impact since the project does not involve technology imports.
<ul style="list-style-type: none"> • Technological self reliance (including project replicability, hard currency liability, institutional capacity, technology transfer) 	+1	The project showcases an innovative way of manure management and use biogas from manure system for power generation in swine farms of China.
Sub Total	+3	
Total	+13	