

CDM Project Case Studies

Kinoya Sewerage Treatment Plant GHG Emission Reduction Project, Fiji



CDM Project Description

- **Main objective:** to recover and flare methane generated by the anaerobic decomposition of organic matter in sludge of an existing sewerage treatment plant.
- **The project activity proposes** to move from a potentially **high GHG emission** option of open air venting of methane to **environmentally benign** option of capture and combustion of methane

Project Proponent and Location

- Developed by Water Supply & Sewerage Department (WSD)/Water Authority of Fiji under the Ministry of Works, Transport and Public Utilities, Government of Fiji Islands.
- The project is located at Kinoya, Suva city, Viti Levu Island, Republic of Fiji Islands

Contribution to Sustainable Development

- a **first of its kind** in Fiji Islands and the Pacific region
- will play a role model function which will have a major impact on development of similar and other potential renewable, environmentally benign projects eligible under CDM for CER revenues
- avoids venting of methane, a GHG with very high GWP, into the atmosphere resulting in **environmental protection of the region** and at the global level as a whole.

Contribution to Sustainable Development

- will address the immediate concerns raised by the local population and communities in terms of **improving the local environmental hygiene** by eliminating obnoxious odours and air pollution in the project vicinity and surroundings.
- This will benefit the local communities in terms of improved living and working conditions.
- will reduce significant quantity of methane resulting in **increased revenue to the national government from the sale of CERs**.
- The additional revenue is envisaged to be used for the implementation of urgently needed developmental activities in the country.

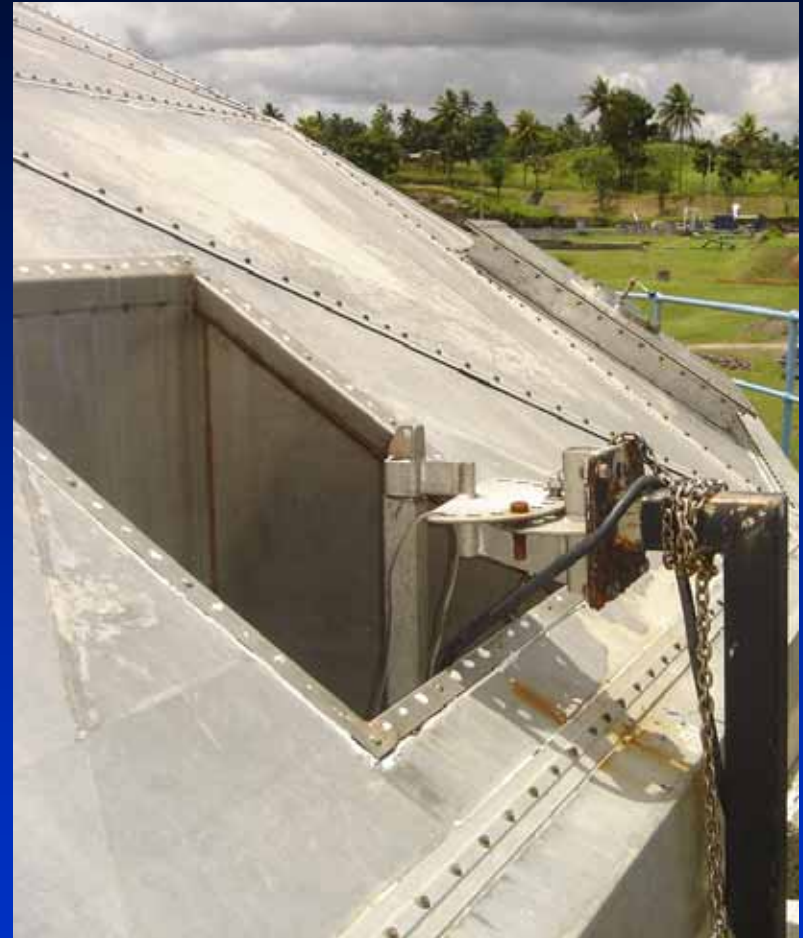
Current scenario

➤ Current Scenario

- The methane generated from decomposition of sludge in the anaerobic digester is currently being vented into the atmosphere.

➤ Proposed CDM Project intervention

- flaring by installing appropriate flaring equipments



CDM Assessment

- CDM sectoral scope
 - Waste handling and disposal - 13
- Scale of project
 - Small Scale
- Source of emission reductions
 - Methane recovery and flaring from anaerobic digestion of wastewater sludge
- Baseline scenario
 - venting the methane in wastewater & sludge into atmosphere.
- Approved baseline methodology
 - Type III.H - Methane recovery in waste water treatment (III.H./Version 16) and
- Estimated annual emission reductions
 - 22,469 tCO₂e

CDM Project Status

- **Project developed with support from Technical Support Facility, Carbon Market Programme, ADB**
- **Certified Emission Reduction Purchase Agreement (CERPA) has been signed with Asia Pacific Carbon Fund**
- **Project is registered with UNFCCC as of 3rd May 2011**
- **The envisaged operational date for the project is during May 2012**

Bagasse Based Cogeneration at Rana Sugars, India

□ Bagasse based cogeneration – 12 MW

- Purpose - to utilize surplus bagasse available in the region for effective generation of electricity for supply to state grid
- Crushing capacity – 5000 TPD
- Co-generation Plant- 55 Ton Boiler at 65 kg/cm² pressure and 12 MW extraction cum condensing type turbine
- generates electricity and sells it to the state electricity board through Power Purchase Agreement (PPA) contract.



Contribution to Sustainable Development

□ Social Well Being

- overall development of the region
- employment opportunities
- opportunities in the area for skilled and unskilled labour.

□ Economical Well Being

- creating business opportunity for local stakeholders
- reduce the demand-supply gap in the power deficit state grid
- reduce transmission losses due to generation of decentralised power

Contribution to Sustainable Development

□ Environmental Well Being

- Fossil fuel offset by utilising waste bagasse
- Offsetting power generation by conventional fossil fuels

□ Technological Well Being

- Introduction of modern & energy efficient technology
- Demonstration project with large replication potential in the country

CDM Aspects

- ❑ **CDM sectoral scope**
 - Energy industries (renewable - / non-renewable sources)
- ❑ **Scale of project**
 - Small Scale
- ❑ **Source of emission reductions**
 - Fossil fuel offsetting through bagasse based electricity generation
- ❑ **Baseline scenario**
 - Using electricity generated by the regional grid utilising fossil fuel resources
- ❑ **Approved baseline methodology**
 - Type I: Renewable Energy Projects
 - Category-D: Grid Connected Renewable electricity generation
- ❑ **Estimated annual CERs**
 - 24,539 tCO₂e

Argichi Small Hydro, Armenia

□ Small hydro power – 8.5 MW

- Purpose - generation of clean hydroelectric energy and contribution to climate change mitigation efforts
- Run-of-river project
- 4 horizontal Pelton turbines with 8.5 MW of nominal power
- electricity will be supplied to Lichk substation which is 7 km distance from the head unit
- Generation capacity – 8.56 MW Average annual power generation – 30.5 million kWh .



Contribution to Sustainable Development

❑ Social Well Being

- create jobs opportunities in the area with very high unemployment level for skilled and unskilled labour during the construction and operation
- additional sustainable generation capacity not dependant on the imported energy sources,
- development of experience and intellectual capacity among the local construction workers to become a skilled work force

❑ Economical Well Being

- The project will attract around \$5,000,000 USD investment.
- generate employment possibilities for the local population which lacks available workplaces in their region
- locally produced equipment will be used which will benefit the renewable energy technology an intellectual capacity development in Armenia.

Contribution to Sustainable Development

□ Environmental Well Being

- Fossil fuel offset by utilising hydro power
- Offsetting power generation by conventional fossil fuels

□ Technological Well Being

- Technology transfer benefits
- Demonstration project with large replication potential in the country

CDM Aspects

CDM sectoral scope

- Energy industries (renewable - / non-renewable sources)

Scale of project

- Small Scale

Source of emission reductions

- Fossil fuel offsetting through small hydro based electricity generation

Baseline scenario

- Using electricity generated by the national grid utilising fossil fuel resources

Approved baseline methodology

- Type I: Renewable Energy Projects
- Category-D: Grid Connected Renewable electricity generation

Estimated annual CERs

- 13,331 tCO₂e

THANK YOU