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.

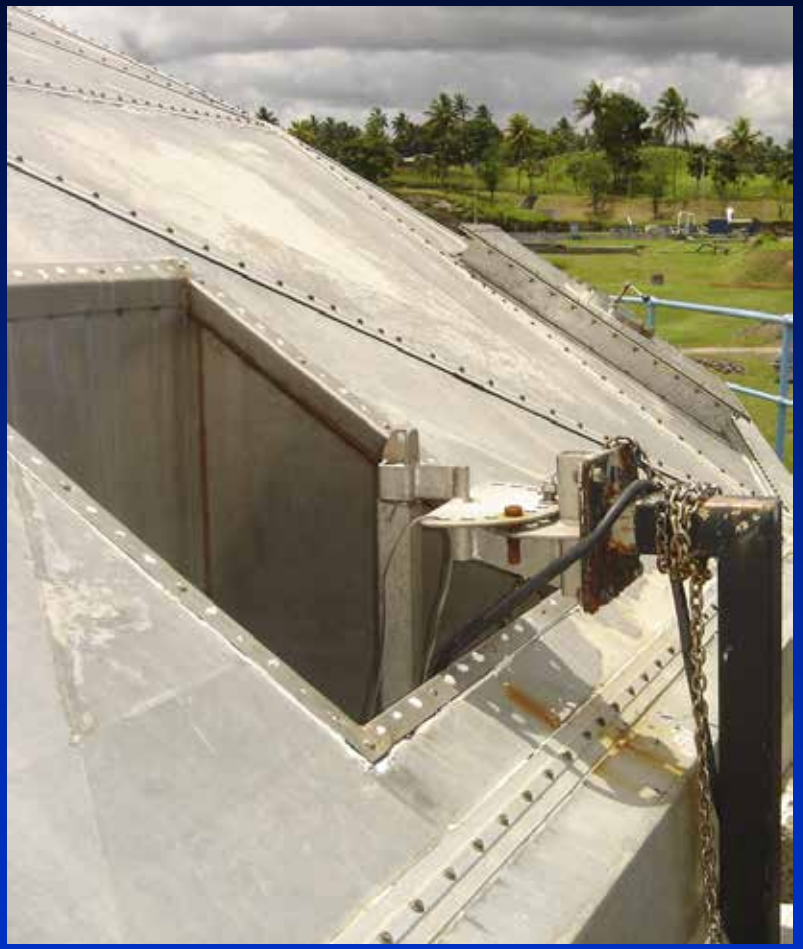
Current scenario

Ø Current Scenario

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

Ø Proposed CDM Project intervention

- flaring by installing appropriate flaring equipments



CDM Assessment

- Ø CDM sectoral scope
- Waste handling and disposal - 13
- Ø Scale of project
- Small Scale
- Ø Source of emission reductions
- Methane recovery and flaring from anaerobic digestion of wastewater sludge
- Ø Baseline scenario
- venting the methane in wastewater & sludge into atmosphere.
- Ø Approved baseline methodology
- Type III.H - Methane recovery in waste water treatment (III.H./Version 16) and
- Ø 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 late 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 tCO_2e

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 tCO_2e

THANK YOU