PACIFIC-EUROPE NETWORK FOR SCIENCE, TECHNOLOGY AND INNOVATION

Pre-feasibility study for methane recovery at Naboro Landfill, Suva, Fiji Islands

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PACE- NET+ Bi-regional Dialogue Platform, 30th June - 1st July,2016, Nadi, Fiji

Objectives

- To provide a platform for collaboration between EU experts in landfill gas utilisation and climate change mitigation specialist and the counterparts from the PICTs.

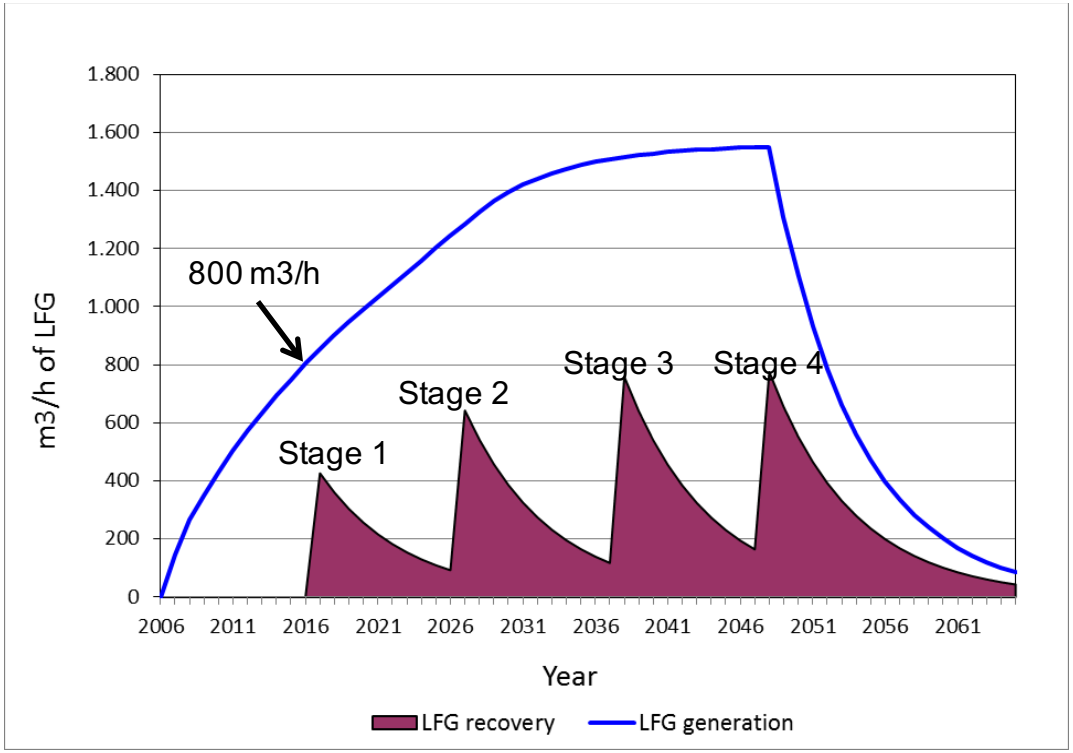
- To quantify methane emissions from the Naboro landfill and to carry out flux chamber measurements to ascertain methane oxidation rates.

- To propose a technical and economic feasibility of the development of a landfill gas recovery and utilization project at the Naboro landfill based on the preliminary assessment – an opportunity to reduce our CARBON FOOTPRINT and develop sustainable WASTE MANAGEMENT.

Outcomes

- Intensive fieldwork carried out to ascertain methane emissions from landfill. Methane emissions are typically in the range of 100 g CH_4/m^2d and could rapidly increase in the "Hot spots" to 23 000 g CH_4/m^2d

- Model results obtained for landfill gas generation and recovery

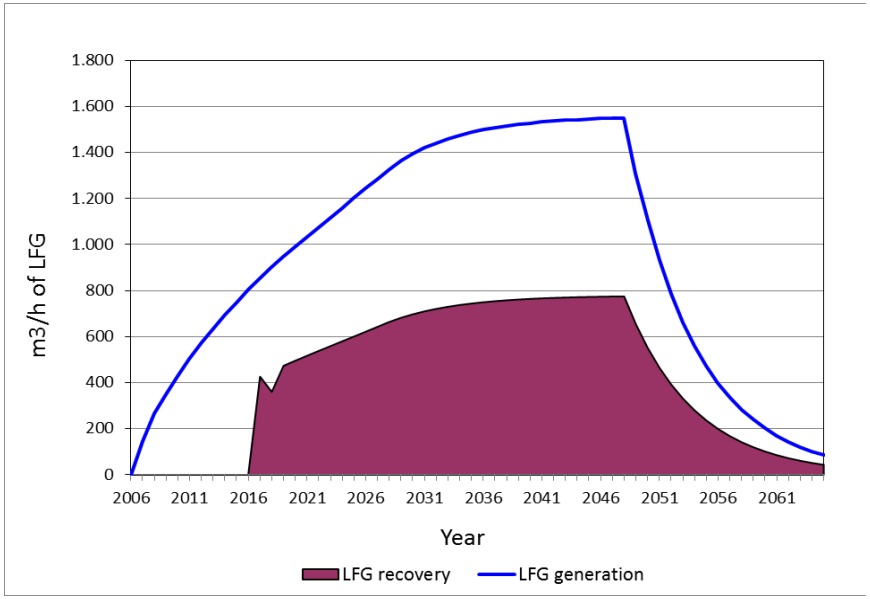


Total yearly average emission

- 74% CH_4 generated
-47,000 ton CO_2-eq

-The recovery effciency is only 26%

- Study shows the best option is to install horizontal wells while filling the active stages:



The recovery efficiency increases to approximately 45%. This equates to reducing our carbon footprint by 27,000 tons of CO_2 equivalent per year.

- Networking opportunities with relevant stakeholders in Fiji – data obtained was shared with relevant authorities in Fiji.

- Collaborative research links established between EU and Fiji is still ongoing – recently Afvalzorg NV donated an instrument to measure methane emissions from the landfill.

- The results obtained was presented in an international conference on landfill research to a wider scientific community.

Perspective for Future

- Naboro landfill shows the potential for methane recovery and utilisation.
- Conduct a pilot project to install horizontal wells and a gas turbine to generate electricity.
- A proposal will be developed jointly by project partners and the stakeholders for funding the pilot project – makes an ideal case for Green Climate Fund or Horizons 2020.
- USP will actively look for funding opportunities to do further research to increase the oxidation capacity of the landfill and thereby decrease methane emissions from the landfill.