Energy independence through integrated biogas production

Expected project CAPEX: 8'558'000 €
Mandating Authority: Barbuda Municipal Council
Project Type: Biogas

Summary
This project involves utilizing pre-treated poultry waste and sorghum harvest waste materials to generate biogas. Excess energy will be provided to the two main tourist resorts as commercial off-takers. Furthermore, the project will establish bio-methane island-wide transport and fishing capacities, thereby reducing transport and production costs considerably.

Location and population
Island of Barbuda
1'600 inh.

Social and environmental impact
Reduction of fossil fuel consumption in Barbuda and for tourist industry energy off-takers, thereby reducing the electricity production costs on Barbuda. Introduction of bio-methane based CNG as transport fuel.

Main stakeholders
Municipal Council Barbuda, Sustainable Environmental Technologies – SET GmbH Austria, General Electrics, Barbuda based tourist resorts as energy off-takers.
**Project maturity (IFC / World Bank Categories)**

**STAGE 1 : Concept Development, Site identification**

**Expected capacity (Input-Output)**

The expected installed capacity for project phase I will be 0.4 MWe/h plus 0.5 MWth/h and excess refined biogas for the island vehicle and fishing fleet operation.

**Land identified**

Yes

**Site access:**

- ✓ Adequate road
- □ Rail access
- ✓ Port facilities

**Technology:**

Inlay material pre treatment through SET biomass crusher. Multi stage anaerobic fermentation with biogas utilisation for co-generation of electricity and heat and excess biogas refinery for vehicle utilisation in the form of bio methane CNG.

**Waste stream data**

Yes

**STAGE 2 : Pre-Feasibility Studies**

**Pre-feasibility study: Yes**

**STAGE 3 : Feasibility Studies**

**Feasibility study:** NO

**STAGE 4 : Permitting / Financing / Contracts**

**Land concession signed**

Yes

**Building permits signed**

No

**Environmental impact study**

Partially

**Identified sources of fundings**

Co-investor identified

**STAGE 5 : Engineering / Construction / Commercial Operation**

**Engineering, Procurement and Construction Contractor**

SET is prepared to take overall responsibility for the tendering, selection process and oversight of the engineering, procurement and construction as implementing partner and one-stop-shop for the project SPV.

**Operation and Maintenance Contractor**

SET is prepared to act as the general operator and maintenance contractor for the SPV. General Electrics will provide for maintenance of the co-generation units of the project phases.

**Comments**

This project represents an innovative lighthouse initiative for small island states for energy independence based on agricultural production by introducing a closed circle and zero-emission energy production technology.