Converting landfill gas-to-energy

Expected project CAPEX: 1’974’000 €

Mandating Authority: Stellenbosch Municipality

Project Type: Biomass and Energy from waste

Summary
The Devon Valley landfill site is in the process of rehabilitation and capping. A high organic waste content is present in the waste body. Extracting landfill gas and converting it to renewable energy for use at the adjacent Wastewater treatment works is a sustainable solution.

Location and population
Stellenbosch, Western Cape, South Africa
170,000 inh.

Social and environmental impact
The landfill gas issues will be addressed, and utilised beneficially to provide renewable energy to the Wastewater Treatment Plant. The municipality should gain financially as capital and operational costs should be covered years before gas peaks.

Main stakeholders
**Project maturity (IFC / World Bank Categories)**

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

**Expected capacity (Input-Output)**
1.6 MWp (estimate)

**Land identified**
Yes

**Site access:**
- ✓ Adequate road
- □ Rail access
- □ Port facilities

**Technology:** Methane gas converted to energy

**Waste stream data**
Data sets are available from feasibility studies conducted in November 2014, as well as waste data from the municipality.

**STAGE 2 : Pre-Feasibility Studies**

**Pre-feasibility study:** Yes

**STAGE 3 : Feasibility Studies**

**Feasibility study:** Yes

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

- **Land concession signed**
  - No

- **Building permits signed**
  - NO

- **Environmental impact study**
  - NO

- **Identified sources of fundings**
  - Tbd

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

- **Engineering, Procurement and Construction Contractor**
  - Need to go through procurement process

- **Operation and Maintenance Contractor**
  - Need to go through procurement process

**Comments**

Gas management at the landfill facilities has always been neglected at many landfills throughout the country. Except for a few landfills in Kwa-Zulu Natal and Gauteng, landfill gas to energy projects have been non-existent in the country, and great carbon trading opportunities have been lost in the process. With this project it is hoped to bring innovative technologies to the country, meet environmental and legal obligations and simultaneously benefit from waste products.