



# INVEST IN YOUR OWN RENEWABLE ENERGY BIOGAS POWERPLANT

Be part of an integrated power solution. Generate your own power during peak load times. Environmentally responsible renewable energy that makes financial sense.



RELIABLE POWER WHEN AND WHERE YOU NEED IT. CLEAN AND SIMPLE.

# INVEST IN YOUR OWN RENEWABLE ENERGY BIOGAS POWERPLANT



Agricultural waste for digestion



Anaerobic Digester



Methane-rich Biogas Treatment

## A unique opportunity for the generation of 1.6 MW of renewable energy with versatile use of exhaust energy through Combined Heat and Power (CHP)

Trade plus Aid (TPA) has pleasure in presenting a unique opportunity for the generation of renewable electrical energy from agricultural waste - the power which is generated is wheeled through the Eskom grid to the location of your choice.

The TPA Biogas Programme is a collaboration between Trade plus Aid and various pork producing farmers throughout South Africa. The programme objective is to introduce Biogas as an appropriate, environmentally sound alternative to fossil fuel grid based power production. Biogas is a medium calorific gas containing methane and carbon dioxide, resulting from the action of micro-organisms on organic materials such as an agricultural waste flushing system at a swine farm. Methane is a colourless, flammable, odourless hydrocarbon gas (CH<sub>4</sub>), which is the major component of natural gas. Methane is a greenhouse gas considered to be over 20 times more dangerous to the atmosphere than carbon Dioxide. The programme is an attempt to introduce climate change objectives and awareness as outlined by the United Nations UNFCCC.

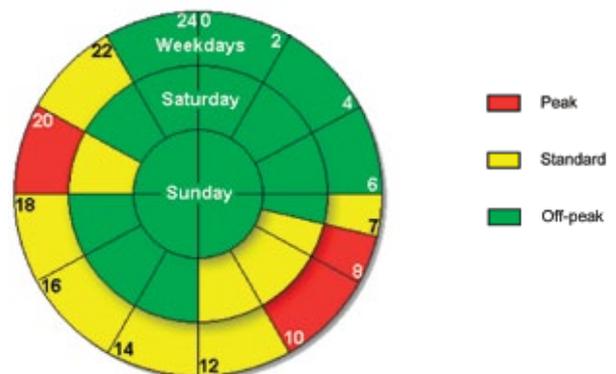
The project involves the installation of a new covered anaerobic lagoon to treat barn flushing wastewater produced from swine-rearing barns for the generation of a methane-rich biogas. This biogas is treated and used as a fuel for the generation of electricity at the time the national grid requires it the most - peak time.

This Combined Heat and Power (CHP) project qualifies for various financial incentives from SARS, as well as emission reduction credits against the upcoming carbon tax. This highly appropriate, environmentally sound alternative energy project is developed using internationally tried and tested equipment. It is also linked to a household biogas programme benefiting impoverished rural communities in South Africa.

### Our power generation solution offers you:

- > Peak time electrical supply
- > Alternative, renewable clean energy from a sustainable source
- > Full operational and maintenance plan
- > Reliable, advanced engineering
- > On-line monitoring in real time
- > Full Combined Heat and Power installation
- > Assured return on investment
- > Project complies with Climate change emission reduction protocols
- > Participation in the development of household biogas plants for impoverished communities

### Eskom time of use powerwheel:



## Advanced Capstone Engineering



The Capstone C1000 MicroTurbine is a compact turbine generator that delivers electricity on site. Derived through advanced engineering based on proven turbine design, Capstone MicroTurbines

are the pre-eminent energy management solution. Benefits include ultra-low maintenance due to the unique air bearing design. The Capstone Turbine does not require lubricant or cooling liquids. With the lowest emissions of any fossil fuel combustion and the Clean Power concept of digital power conversion, these factors combine to produce the optimal generator.

The electrical engineering for the project will be supported for the duration of the 15 years by Single Destination Engineering (SDE).

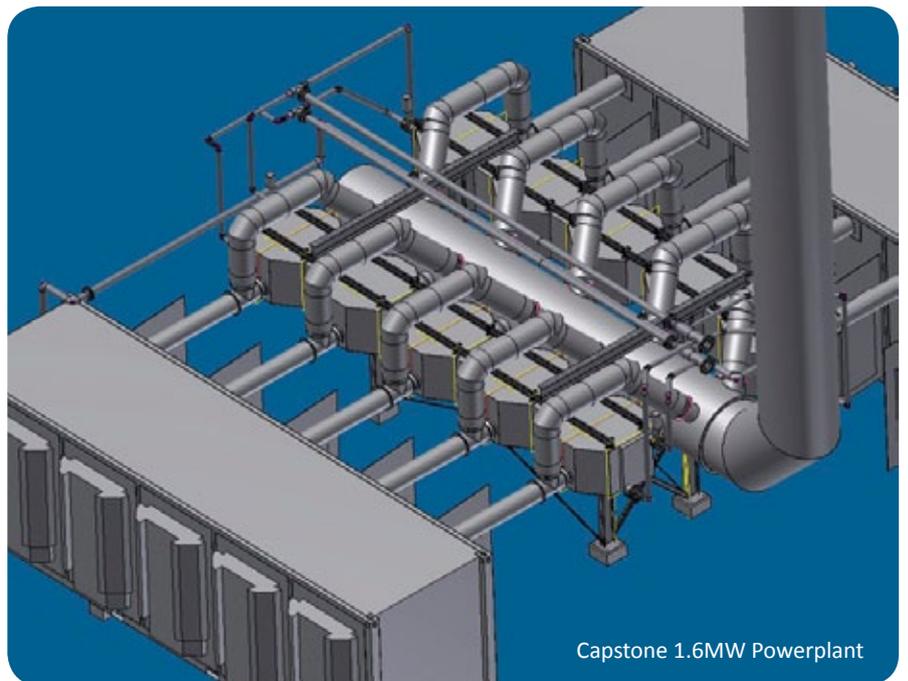
SDE are a market leader in the engineering and monitoring of power generation projects. SDE will liaise with Eskom and monitor the power exported from the power plant through the grid to its destination. SDE will oversee the required electrical compliance as detailed by the Eskom embedded energy protocol.

“ In reality, studies show that investments to spur renewable energy and boost energy efficiency generate far more jobs than oil and coal ” - Jeff Goodell



Capstone Micro-Turbine Generators

Reliable, renewable electrical generation from agricultural waste biogas



Capstone 1.6MW Powerplant