BIOGAS PROJECT

Large scale mixed waste AD System

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PROJECT SUMMARY

• Bio2Watt, is a Waste to Energy Project Development Company which owns, develops and builds the projects it is involved in.

Bronkhorstspruit Biogas Project (Pty) Ltd (“BBP”) is a Renewable Energy IPP:

• 4.4MW installed electrical capacity and further 3MW available for greenhouse farming

• Electricity will be sold to BMW within City of Tshwane, roughly 60kms from the site.

• Total project costs amount to ZAR150m, broken down as follows: ZAR36m equity, ZAR16m dti (SA govt) grant, loan from the Industrial Development Corporation

• Equity investors include Norfund, the EPC contractor, two impact funds and Bio2Watt.

• Project will officially start evacuating power in April 2015
MODEL BIOGAS PROJECT

- Waste reduction
- Job creation
- More renewable energy
- Developing local expertise

Benefits:
- Avoid GHG emissions
- Avoid water pollution
- BYPASS LANDFILLS
- FOOD PRODUCERS
- ORGANIC WASTE
- MIXER
- FLARE
- BIOGAS
- FERTILISER
- GAS ENGINES

Off-taker

Power purchasing agreement

3MW
Typical waste streams for Anaerobic Digestion

- Fruit & Veg waste
- Restaurant waste
- Agricultural waste such as livestock manure, silage
- Abattoir waste
- Fat trap/clarifier waste from food industry and restaurants
- Activated sewage sludge
- Paper sludge
Anaerobic Digestion
Advantage for Municipalities

- Divert organic waste from landfills - DEA
- Given current power constraints - Potential to access additional power within municipal area
- Private sector can incur investment as a mixed feed system
- Job creation – roughly 10 jobs per MW – compared to 0.9 for Solar & Wind
- Waste heat available for further activities such as greenhouse farming – opportunity for further job creation
How is this possible

MUNICIPALITY:
- Encourage diversion of waste to the biogas plant
- Allow biogas plant to sell power to large off-taker
- Municipality can also purchase power
- Licensing and permits

AGRICULTURAL WASTE:
- Livestock manure
- Silage and other waste streams

FUNDING:
Patient investors, soft loans from DFIs e.g. IDC
Regulatory Requirements for IPPs

**LICENSES:**
- EIA
- WULA
- Waste License
- Air Emission License

**MUNICIPALITIES:**
- Building Plan approval
- By Laws
- Consent of Use

**DOE, NERSA & ESKOM:**
- Generation License
- Letter from DOE
- Access to grid
THANK YOU