

# BIOGAS PROJECT

Large scale mixed waste AD System

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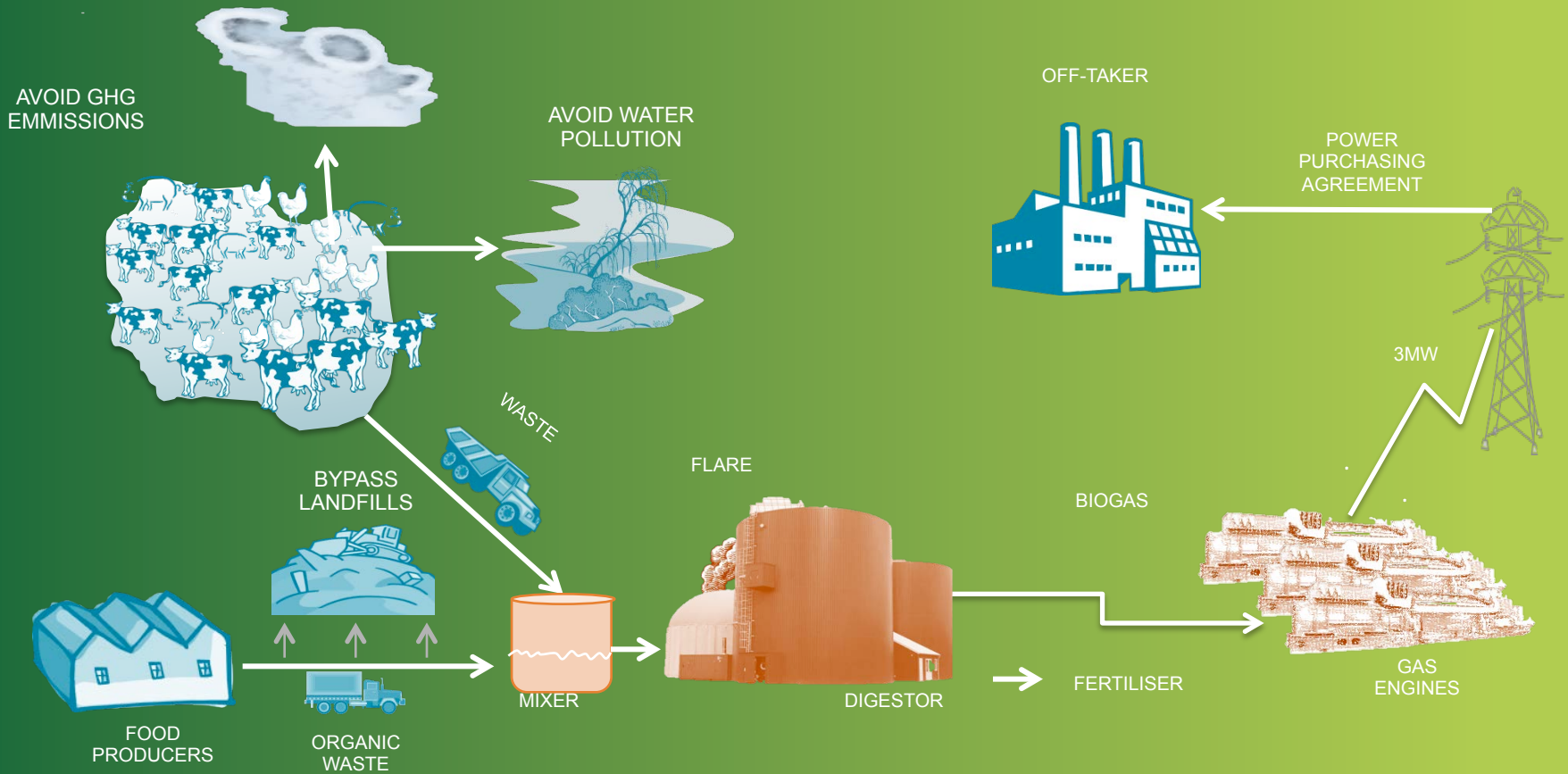
# PROJECT SUMMARY

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

## **Bronkhorstspuit 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



BENEFITS

WASTE  
REDUCTION

JOB CREATION

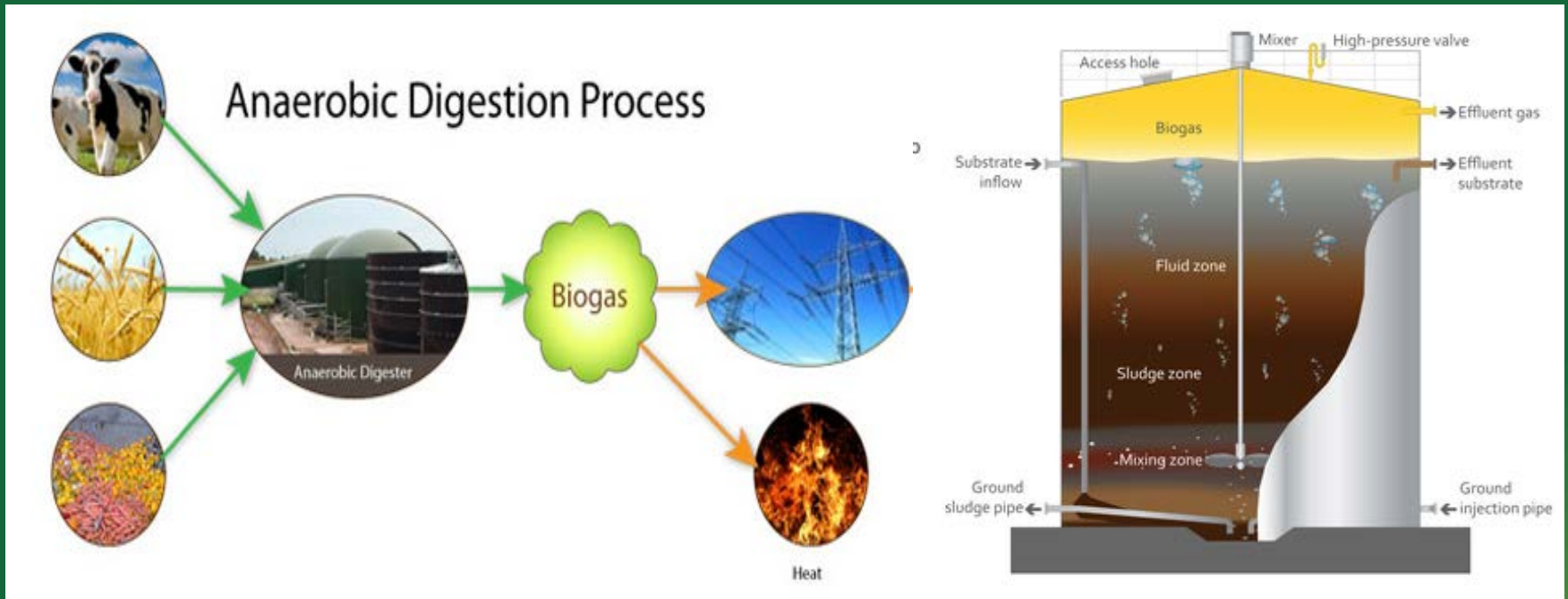
MORE  
RENEWABLE  
ENERGY

DEVELOPING  
LOCAL EXPERTISE

# 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

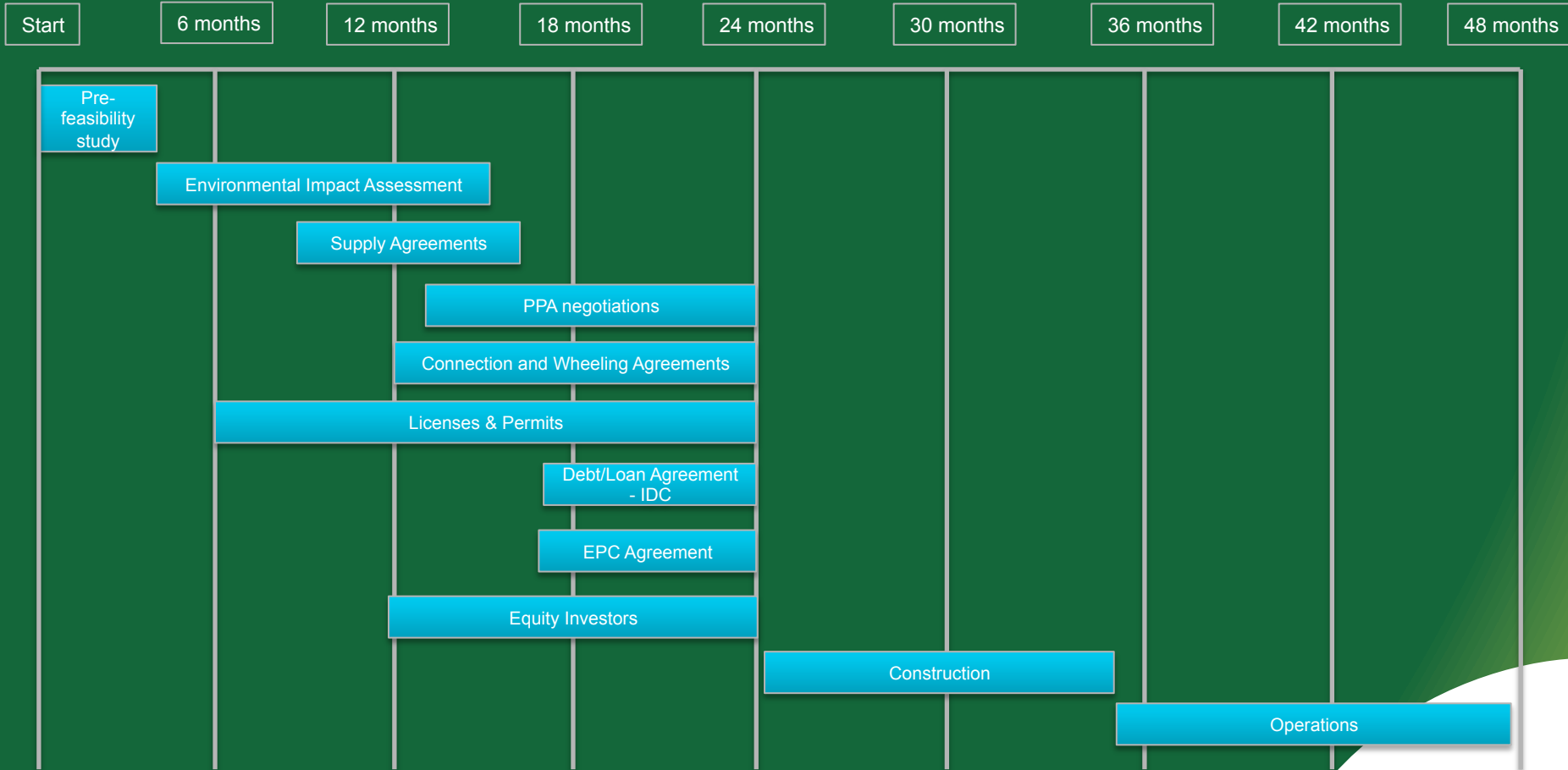
# BRONKHORSTSPRUIT BIOGAS PROJECT



15/03/06

Confidential

# PROJECT TIMELINE





# 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

