

Industrial Development Corporation

Driving Industrial Capacity Development

November 2017

FINANCING BIOGAS PROJECTS

3rd NATIONAL BIOGAS CONFERENCE

Raoul Goosen – Industrial Infrastructure SBU, IDC



- Overview of IDC
- Industrial Infrastructure Unit - Energy
- IDC Funding Criteria
- IDC Processes in Assessing Clean Energy Projects for Investment
- Funding Structures
- **Due Diligence Checklist**
- Green Funding
- Biogas project specific issues

Overview of IDC

- **Established:** 1940
- **Type of organisation:** Development Finance Institution (DFI)
- **Ownership:** State owned company, 100% owned by the SA government
- **Total assets:** R129.8 billion (31 March 2017 - group)
- **Total liabilities:** R41.5 billion (31 March 2017 - group)
- **Main business area:** Providing funding for entrepreneurs and projects contributing to industrialisation
- **Geographic activities:** South Africa and the rest of Africa
- **Products:** Custom financial products above R1m to suit project's needs including debt, equity, guarantees or a combination of these
- **Stage of investment:** Project identification and development, feasibility, commercialisation, expansion, modernisation
- **Number of employees:** 816 (December 2016)



- **Operational Footprint:**
- Head Office - Johannesburg
- 20 Regional and Satellite offices

Overview of IDC (continued)

The funding model of IDC is based on it being self-sustainable

IDC IS FUNDED THROUGH:

Internal profits

Divestment of mature investments

Borrowing in domestic and international markets

We use these to provide funding to business in the form of loans and equity investments



Interest repayments



Capital repayments



Dividend receipts



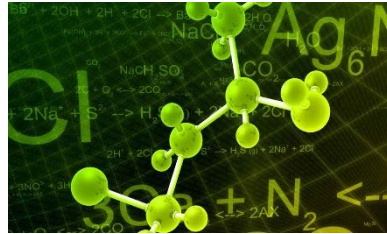
Capital growth and realisation

Proceeds from this funding are used to repay borrowings, cover our costs and grow our balance sheet to re-invest in future business



Metals Value Chain

- Basic Metals and Mining
- Machinery and Equipment
- Automotive and Transport Equipment



Chemicals Value Chain

- Basic and Specialty Chemicals
- Chemical Products and Pharmaceuticals
- Clothing and Textiles



Agricultural Value Chain

- Agro-processing and Agriculture
- New Industries
- **Industrial Infrastructure**



High Impact Sectors

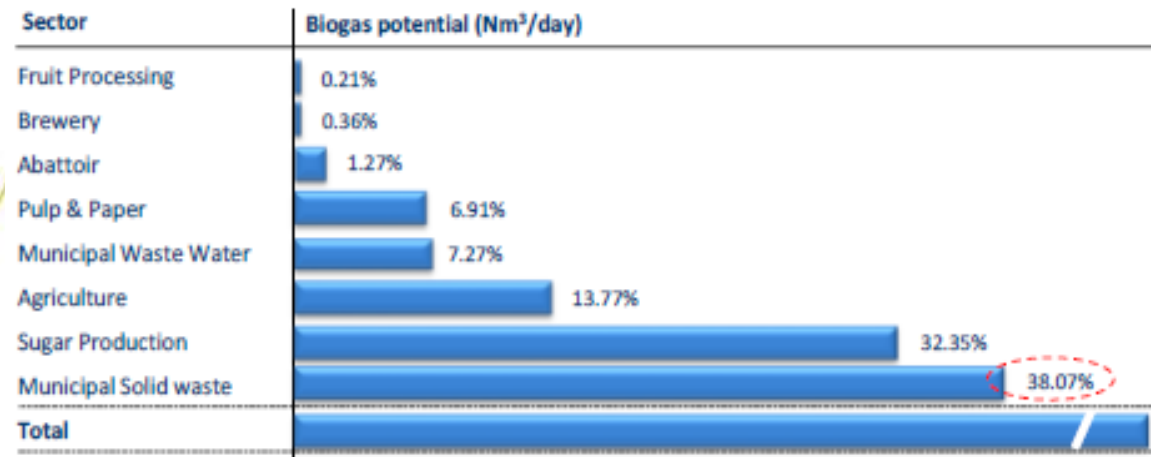
- Heavy Manufacturing
- Light Manufacturing
- Tourism
- Media and Motion Pictures
- Rest of Africa

Value Chains are earmarked for special attention including proactive project development, whilst High Impact Sectors are exclusively reactive

DEA/SANEDI Study : Facilitation of Large Scale Uptake of Alternative Transport Fuels

Analysis of the Biogas Feedstock Database shows a total captured potential of 2,985,150 Nm³/day. The majority of the sources is located in and around South Africa's urbanised areas. With a share of 38% the Municipal Solid Waste Sector is the largest contributor.

Biogas sources per sector



Geographic distribution of biogas sources



Local governments in South Africa control and/or operate a large share of the country's potential biogas for transport sources, making it ideally positioned to drive the large scale uptake of biogas as a transport fuel.

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Industrial Infrastructure Strategic Priorities

ENERGY

CONVENTIONAL:

Coal, gas, nuclear

RENEWABLES:

Solar, wind, hydro, biomass, biogas

NON-CONVENTIONAL:

Co-generation, waste-to-energy, geothermal, wave, hydrogen/fuel cells

FUELS:

Liquid petroleum fuels, biofuels, natural gas

INFRASTRUCTURE:

Power transmission & distribution lines, energy storage, oil & gas

EXCLUSIONS

Electrification: Household

LOGISTICS

LAND:

Road, rail, rope-ways, shared storage (cold, silos), terminals, industrial hubs

MARINE:

Ports/terminals, shipping/cargo, waterways, offshore facilities, port facilities, marine storage

AIR:

Ports/terminals, cargo

EXCLUSIONS

PUBLIC TRANSPORT

Cars, taxis, trucks, trains

COMMERCIAL AIRLINES

COMMERCIAL SHIPS

Yachts, cruise-liners, boats

WATER

STORAGE:

Reservoirs, dams

TRANSPORTATION:

Pipelines

TREATMENT:

Desalination, waste water, fresh water

BULK SERVICES:

Irrigation systems, pump stations.

EXCLUSIONS

SANITATION: end-user infrastructure

TELECOMS

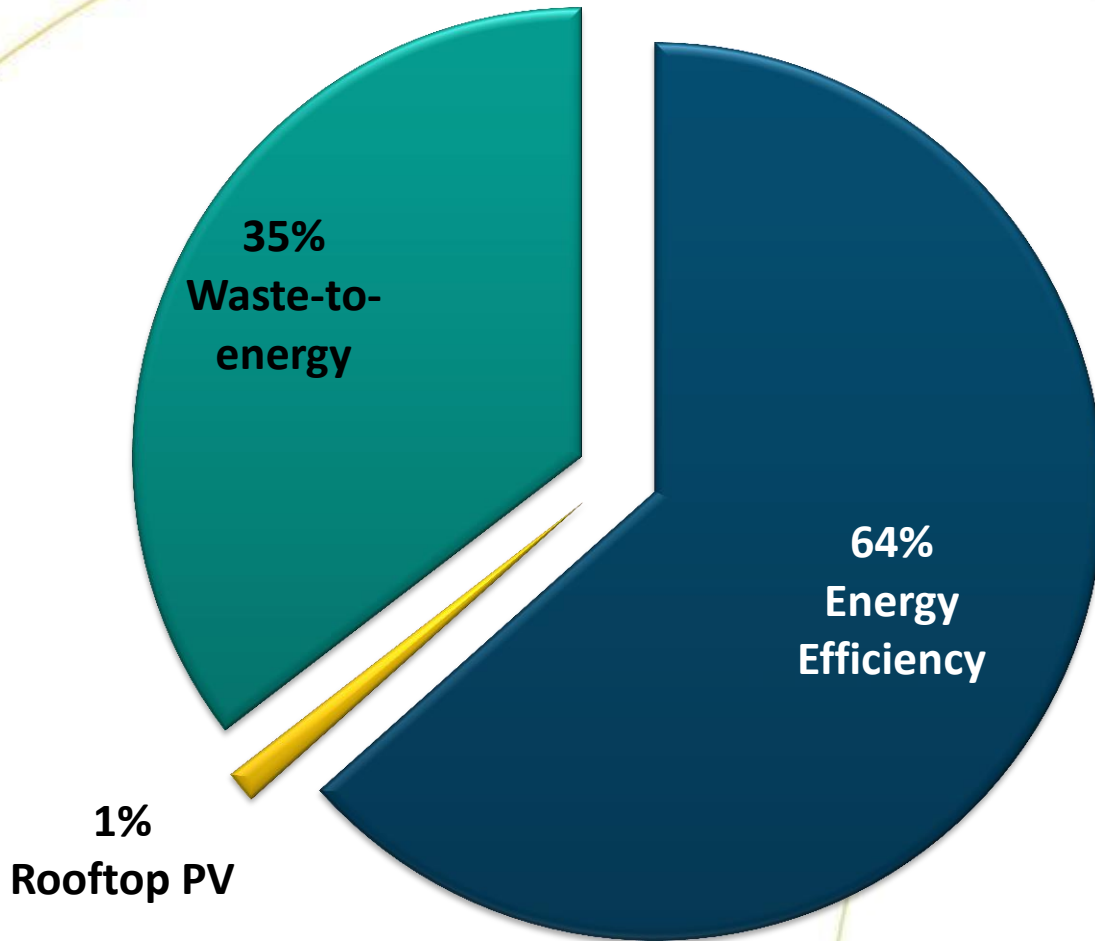
BROADBAND:

Fibre, wireless, transmission equipment, open access/shared

EXCLUSIONS

Internet services
Data centres

IDC in Green Energy (excl. REIPP) : R1.7 bn



Biogas has made up 75 % of “waste” to energy projects

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- Funding is provided to projects & Pte Sector (**NOT para-statals or sovereigns**)
- Finance is available for the establishment of **new businesses**, and for the **expansion or rehabilitation** of existing businesses
- Business case must exhibit **economic merit** (*i.e. in addition to development impact, it must be profitable/ sustainable and capable of repaying its debt*)
- **Credible operator/ technical partner**
- Adequate financial structure / **debt-to-equity ratio** (*with reasonable contribution by promoters*)
- Strict **environmental compliance**
- Minimum **project size, ca R 5 mil** (*higher for SADC, RoA*)



Other key factors:

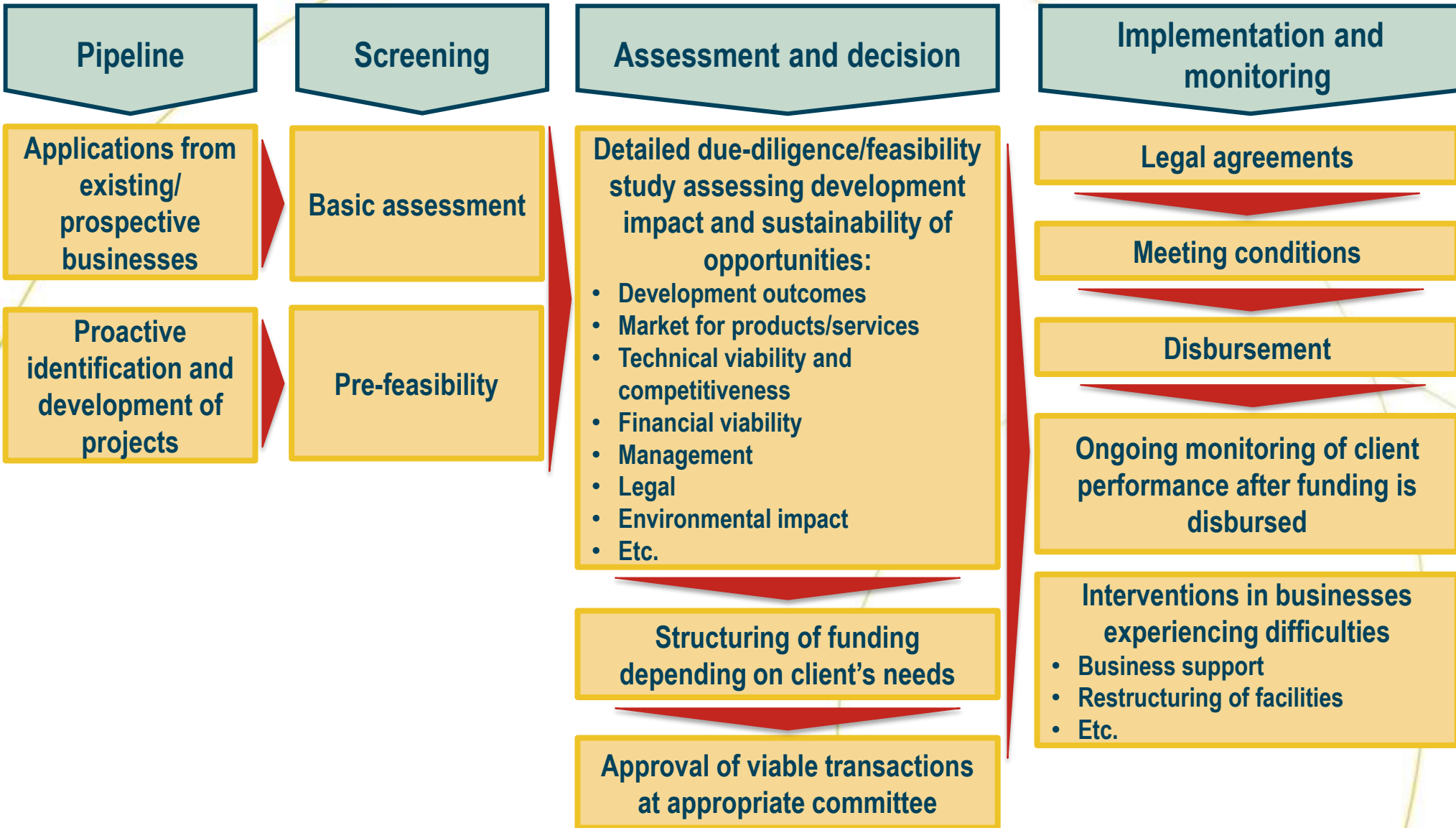
- Assist Black Industrialists, Youth, Women, BEE and broad based/community/workers equity
- Localisation of equipment
- Jobs focus
- Regional development
- Rural development
- **Green**
- **Water saving**

BIOGAS CAN TICK A NUMBER OF THESE BOXES



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Deal origination, assessment and post-investment



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Ownership Structure – the Lender?

Ownership	Advantages	Disadvantages
<p><u>No SPV</u> <i>Host-owned</i> <i>On-balance Sheet</i></p>	<p>Low transaction complexity Owns the upside Cost of debt could be lower</p>	<p>Cost of feasibility study Balance sheet burden Project execution burden (can outsource) Technical risks O&M responsibility & risks</p>
<p><u>SPV</u> <i>Project Finance</i> <i>Limited recourse</i> 1. 100% IPP – owned</p>	<p>Off-balance sheet funding SPV pays feasibility study cost IDC could share in FS cost Shifts technical and O&M risk</p>	<p>Project Finance documentation Cost of Debt Service Reserve Buyer default obligations Could disqualify Tax benefits</p>
<p>2. Partly Host-owned</p>	<p>Share in upside Knowledge of IPP developer</p>	<p>Requires all the PF structures</p>
<p>3. 100% Host-owned</p>	<p>Owns the upside Can sell-down or re-finance Can structure good balance of</p>	<p>Requires all the PF structures No IPP knowledge</p>

Balance Sheet vs Limited Recourse (project finance)

Salient Terms	Balance Sheet	Limited Recourse
Debt Tenure	3- 8 Years Capital and interest moratorium during construction	Depending on PPA tenure, also 5-15 years and moratorium
Debt Pricing	IDC risk pricing model Expect to be lower	IDC risk pricing model Expect to be higher
Percentage Contribution	Up to 100% of Project cost if balance sheet retains 40% own funds as % of total funds.	Debt: Equity 70:30 IDC: 26 - 49% of equity ca.50% of debt
Covenants	Balance sheet borrowing Dividends and shareholder loan repayments to retain 40% ownership structure	Strict cash waterfall with lock-up debt service cover ratio (DSCR) and loan life cover ratio (LLCR)
Security	Suspensive sale and collateral: GNB, SNB, Mortgage and parent company guarantee	Complete step-in rights and cession over all project agreements DSRA

Biogas projects are generally too small for full limited recourse, so are often a hybrid

Project Finance (Limited Recourse)

Terms	Consideration
Debt Tenure and repayment profile	<ul style="list-style-type: none">• Tenure and repayment profile has a direct influence on the tariff• Generation projects require long term debt, typically 10-15 years (Current norm for biogas projects)• Host remains the obligor and banks may limit to shorter if not AAA-rated• IDC inclined to provide longer term debt based on underlying development
Buyer Default Termination	<ul style="list-style-type: none">• Financiers require that Buyer (Host) repays the loan if it defaults on the PPA<ul style="list-style-type: none">• amount or formula to calculate is usually written into the agreement• Needs a note on their balance sheet
DSRA (Debt service reserve account)	<ul style="list-style-type: none">• An account is funded that equates to one semi-annual debt repayment• For cyclical industries, this may be increased to two payments• This adds to capital cost of implementation and thus reflects in tariff
Project Finance Agreements	<ul style="list-style-type: none">• Power/Energy Purchase agreement• Fuel/Waste supply agreement• Site lease and access agreement• Facilities agreement – water and power• Financier direct agreement

Contracting Methodology (Key Factors)

Attributes	EPC	EPCM
<i>Accountability</i>	Contractor fully accountability	Owner has multiple points of accountability
<i>Quality/Performance Guarantee</i>	Contractor guarantees performance of complete facility	Contractor does not provide guarantees. Direct exposure to all subcontractors
<i>Risk</i>	Contractor holds risk	Owner holds risk

Biogas projects under capital cost pressure opt for EPCM contracts exposing financiers to terms of all subcontractors

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- *Project Information Memorandum*
- *Project structure diagram (all key stakeholders: Lenders, Shareholders, Contractors, Concessionaire, etc) detailing project gearing*
- *Shareholder organogram*
- ***Sponsors background and experience***
- ***Technical partner background and experience***
- *Project timeline*
- ***Schedule of all project risks and mitigants***
- *BEE Entity (& BBBEE)*
 - *(i) ownership (%SH, % black S/H, Male or Female, Youth, SA/non-SA, etc.), (ii) management team, (iii) value add to project / operational involvement, (iv) ZAR value of own contribution to project*
- *Completed FICA checklist*
- *Acknowledgement letter for credit check*

DUE DILIGENCE CHECKLIST : TECHNICAL

- Detailed technology description
- **Key contractors (EPC, O&M, etc) detailed background and experience**
- **Lenders Technical Advisor fatal flaw analysis – IDC can do internally**
- **Feedstock analysis and quantity measurements**
- **EPC heads of terms for a fixed price and date certain construction of the facility**
 - security package (performance bond, parent guarantees, advance payment guarantees, etc)
 - penalties - delay, performance, aggregate liquidated damages thresholds
 - price
 - implementation schedule
 - defects period & testing regime
 - Spares, termination, etc
- **O&M heads of terms**
- **Equipment supplier profile and heads of terms (if applicable)**
- Structure of EPC and OM if JV with BEE party
- Management Services Agreement including fee
- **Construction and operations jobs - detailed breakdown (number and months)**
- **Local content % and breakdown of local components**

MARKETING – ALL REVENUES

- **Power//Heat/Gas/Digestate Purchase Agreement/s**
- **Demonstration of off-takers ability to fulfil offtake** – business case for power demand, affordability, sustainability etc
- **Waste Gate Fee and Supply Agreements – long term, guarantee**

LEGAL/REGULATORY

- Shareholders Agreement
- Company constitutional documents, including Memorandum of Incorporation
- **Land use agreement i.e. lease agreement**
- **Environmental Impact Assessment and accompanying Environmental Approval**
- **Permits, Licences (Waste Licence, WUL) and Authorizations**

- **Base case financial model (BCFM) with no expected material changes comprised of at least the following:**
 - Inputs sheet that contains **all financial, revenue and technical assumptions**;
 - Detailed capital cost estimates and proposed capital draw-down schedule;
 - Monthly construction and operations workings
 - Quarterly model forecasting **income statement & balance sheet for duration PPA**;
 - **Debt schedule** with monthly capital and interest repayments – **shorter than PPA**;
 - A quarterly cash flow statement
- Key financial covenants in BCFM per Lender term sheets – DSCR, LLCR, PLCR
- **Sensitivity analysis** – minimum prescribed sensitivities: COD delay (factoring penalties where applicable); changes in output, capex, opex, interest rates, inflation, foreign exchange, working capital assumptions, etc
- Financial summary including a source and application of funds, key ratios, project and equity returns
- Fully funded project supported by terms sheets
- **Full details of source of equity holders' funds (i.e. cash on hand, sale of asset, ultimate shareholder cash/borrowings etc.)**

- **Development cost breakdown – to be audited prior to Financial Close**
- **Development fee breakdown (if applicable)**
- *Proposed insurance package & quotation for contract, including key cover terms*
- **Off-takers audited Annual Financial Statements – 2 years**
- *Sponsors/shareholders Annual Financial Statements – 2years*
- **Technical Partner, EPC, O&M Annual Financial Statements – 2years**
- *Entity providing Parent Company guarantee AFS – 2 years*
- *Finance department walkthrough, including internal controls (For SPV, detail internal controls to be put in place)*
- *Details of company auditors [Applicant]*
- *Bank facility letter(s) (detailing all facilities available, security, interest rates/fees and other terms)*
- *All loan agreements [Applicant]*
- *Details of all off balance sheet funding/arrangements [Applicant]*

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Objective:

- To provide finance to renewable energy and energy efficiency projects of smaller scale and manufacturing of Green products in South Africa

Qualifying Criteria:

Renewable Energy (RE)

- Solar and biomass; and
- Other technologies are considered on a case by case basis.

Energy Efficiency (EE)

AFD funds are blended at a leverage level of at most 50% funding from IDC

No refinancing.

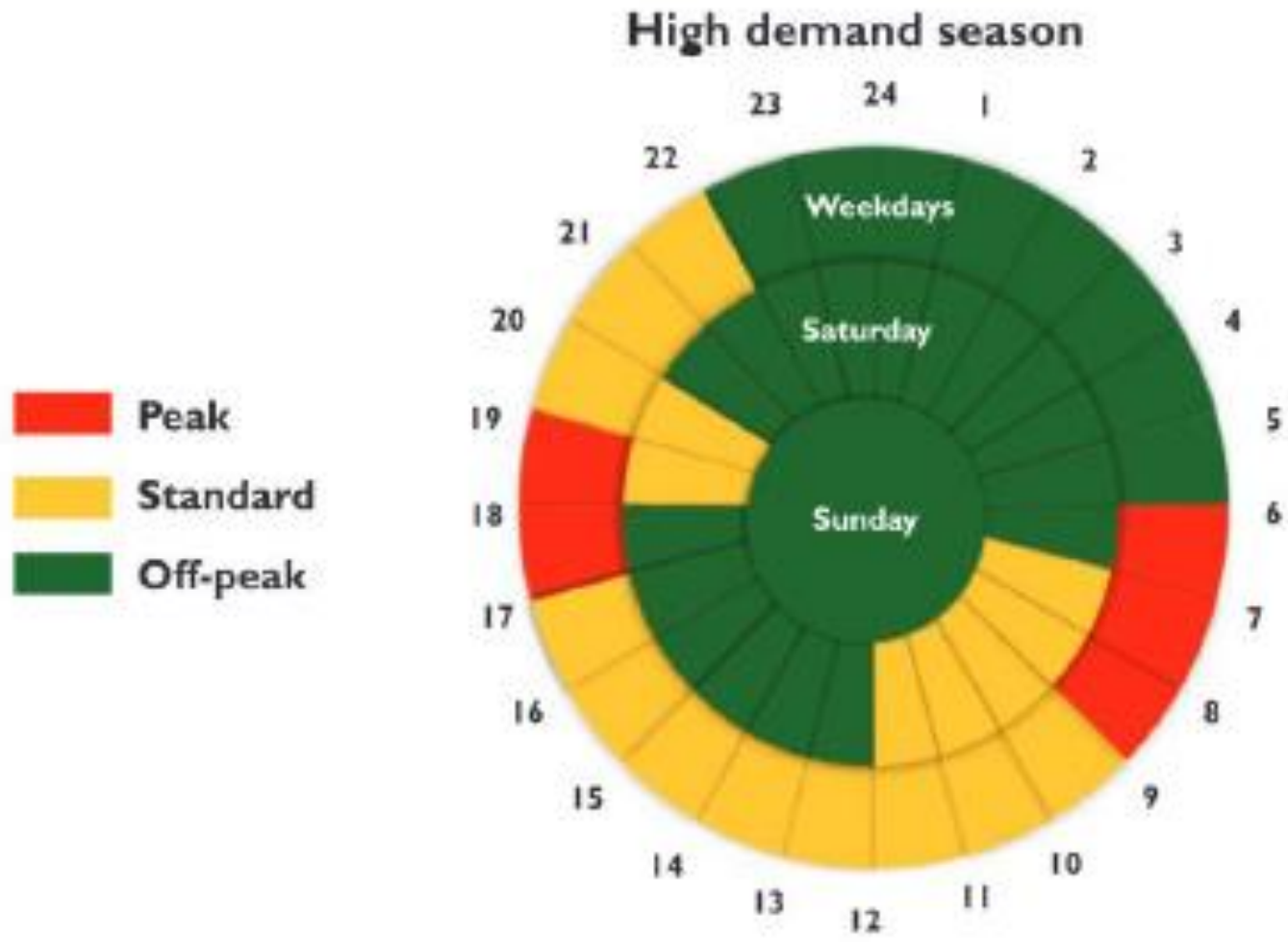
Instruments and Pricing

- Total investment cost not higher than R250 million per project;
- Normal risk pricing with a cap of Prime + 1.6% or an equivalent fixed rate;
- Minimum investment period of 3 years;
- Maximum payback based on energy savings of 8 years; and
- Standard IDC fees apply.

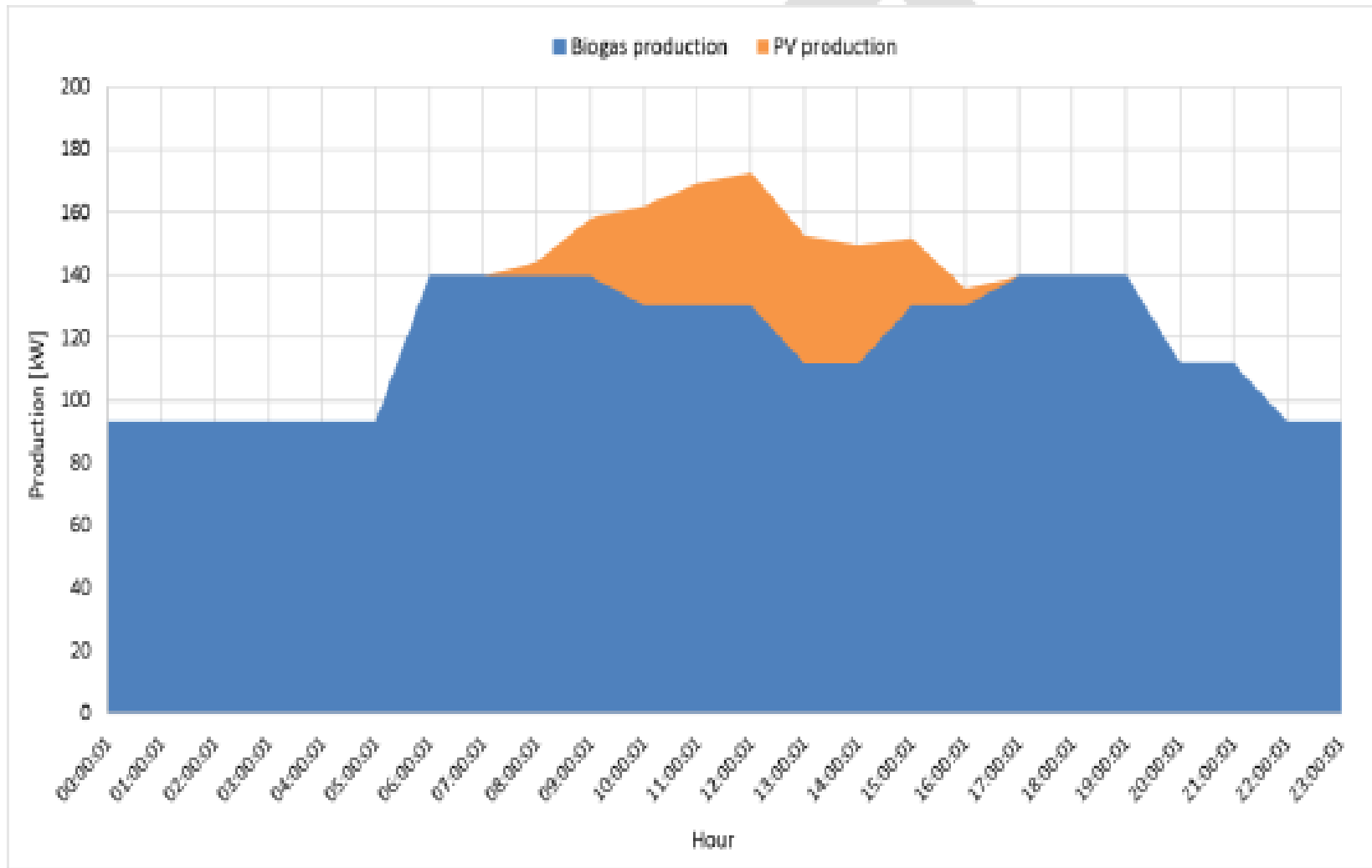
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- **Electricity Offtaker - No open electricity market with free market (competitive prices)**
 - A. Government programs (IPP's under REIPPP)
 - B. Embedded Generation etc for host
 - C. IPP's with willing buyers - wheeling
 - What else?
 - **MiniGrids** (Only 88% of households access to electricity) – **Not bankable**
 - Distributed Renewable Energy Technology (DRET)
 - **Gas for transportation fuel or commercial usage - Price Risk**
 - Other sources of revenue?
 - Gas
 - Heat
 - Digestate - fertiliser
 - Waste, Gate/Disposal Fee
- Lack of biogas specific market/investment incentives - there are Tax Incentives, such as accelerated depreciation (50:30:20) and 12L of 95c/kWh possible**

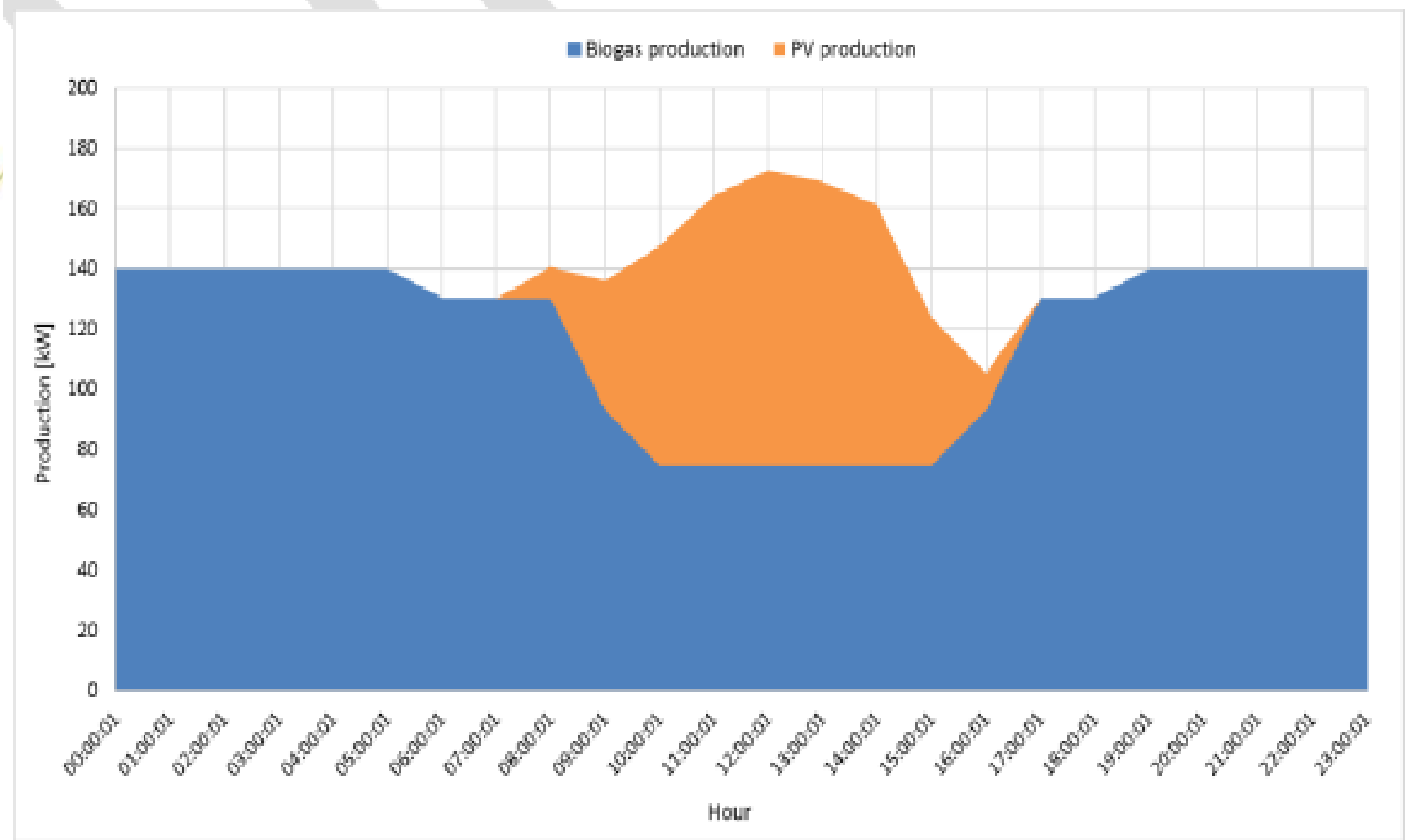
Biogas : Can it assist other renewables & grid?



Biogas and Solar PV Hybrid: Peak production



Biogas and Solar PV Hybrid: 24 hour balance



- **VIABILITY:** eg. reduced CapEx in SA due to lower revenues & gate fees
- **Small size makes full recourse project finance limited, so requires some form of balance sheet support or other guarantees**
- Recover capital cost during operations phase – longer tenure, sculpting
- Technology support and local skill development - **lack of Technology Suppliers with Balance Sheets**
- Project development expertise and funding - **limited developer equity balance sheet support to projects, so insurance schemes**

IDC requirements

- **Local content, Job creation**
- **BEE, BBEE & Corporate Social Invest requirements, eg. Black Industrialist policy**



Thank you

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