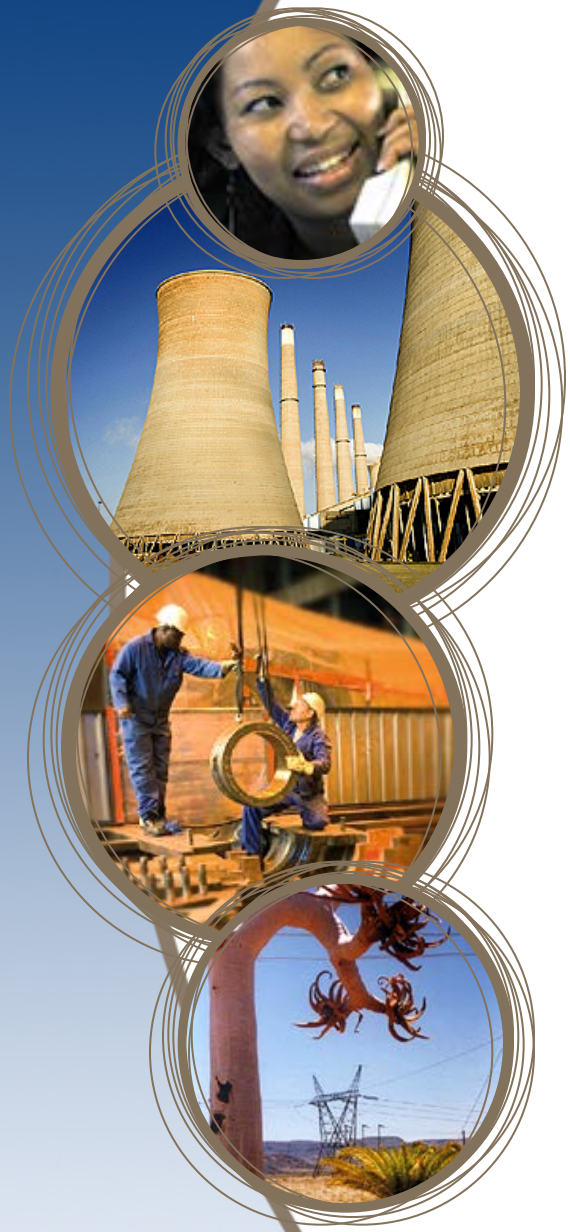


Eskom's Integrated Demand Management (IDM) Programme and Funding Options

Wayne Fortuin - IDM Implementation Manager
Western and Northern Cape
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0823740733

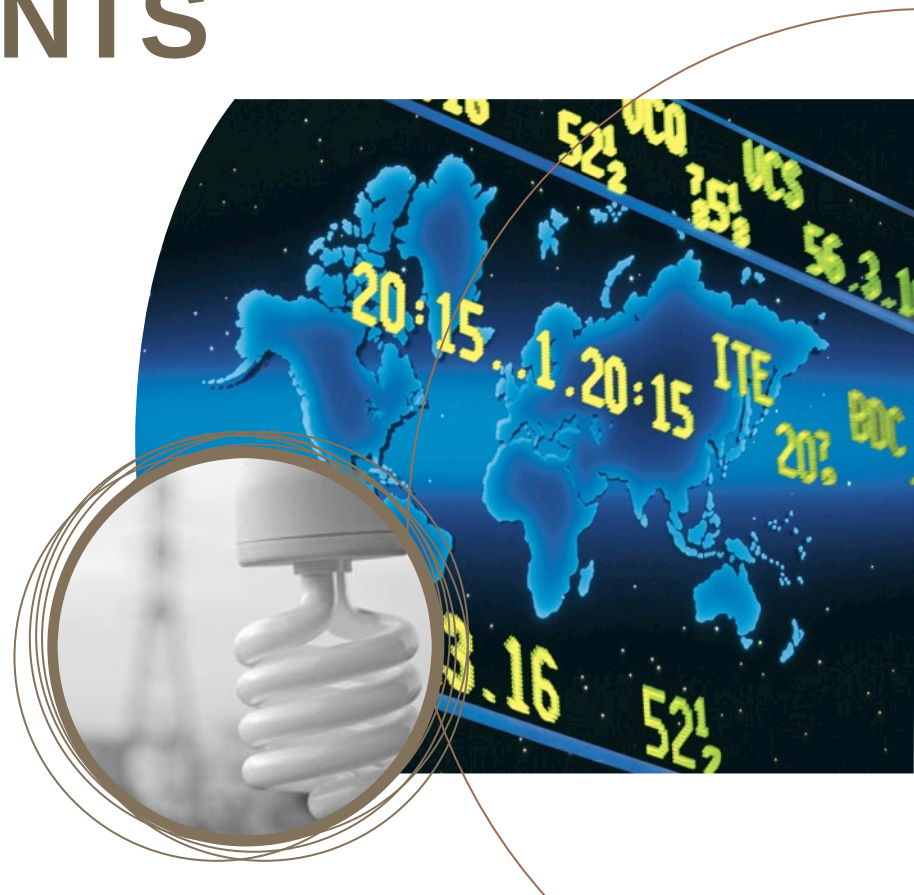
Energy Efficient Buildings Forum April 2013

Overview of presentation

- Energy sectors and activities
- Capabilities, successes and funding
- EEDSM funding mechanisms and programs
- Future focus areas

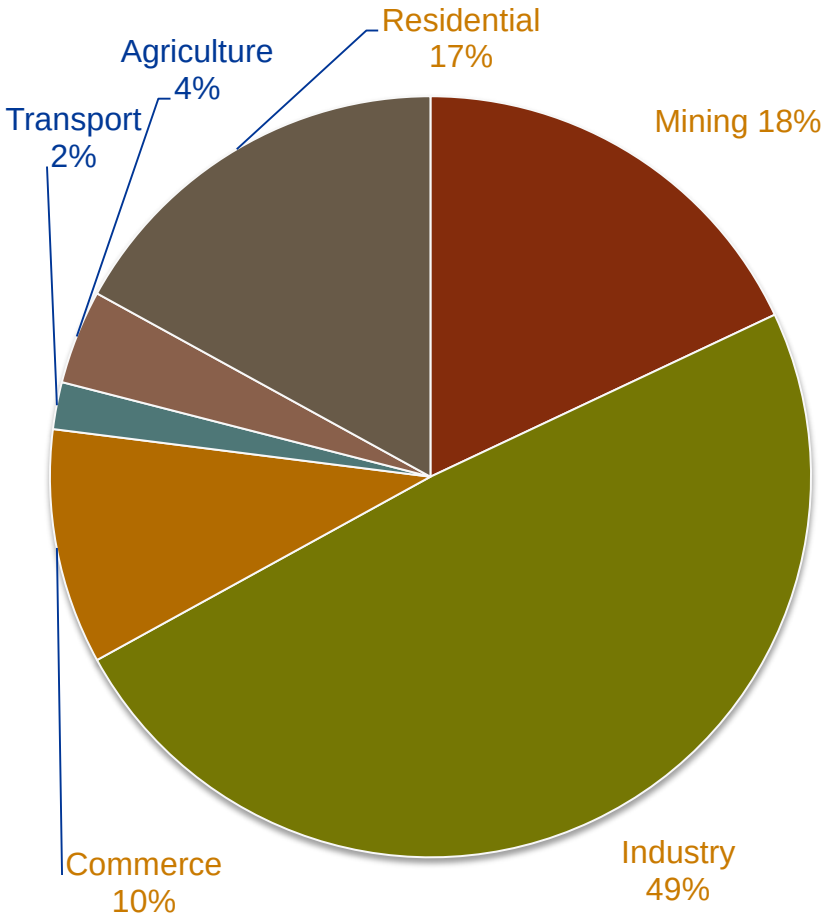
MARKET SEGMENTS

Energy Sectors and Activities

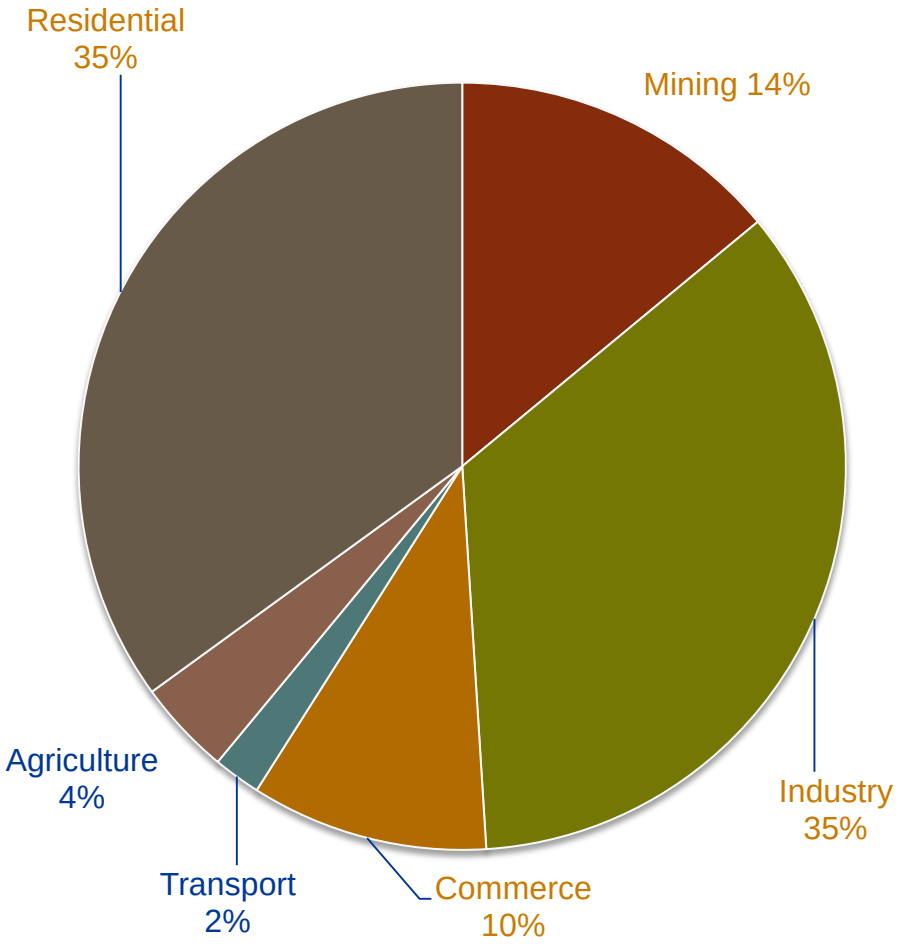


Electricity consumption per sector

Energy Consumption



Demand



Source: as reported in the Eskom 2011 Integrated report)

IDM activities previously focused primarily on three areas

Industrial and mining process optimisation & efficiency upgrades



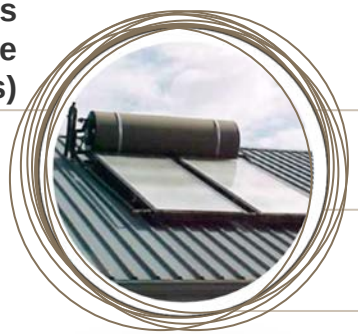
199	projects
596	megawatts
1,831	gigawatthours/annum

Mass rollouts (mainly of CFLs)



318	projects
2,128	megawatts
4,735	gigawatthours/annum``
52 m	CFLs rolled out 2004-2011

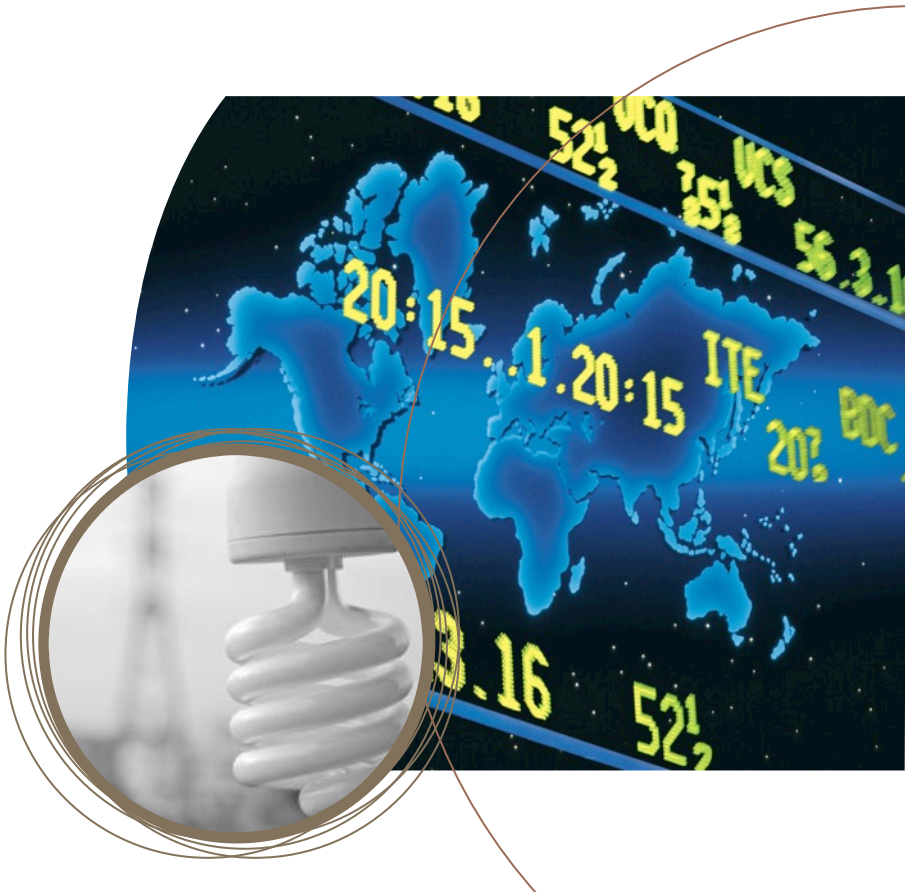
Solar Water Heaters (high and low pressure systems)



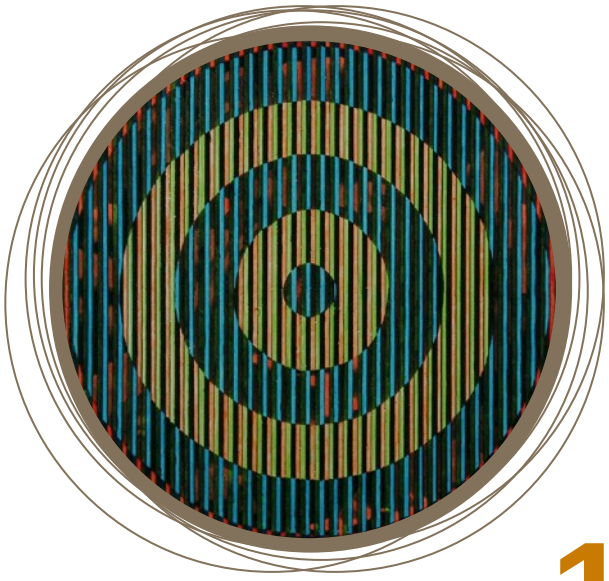
36,808	high pressure systems
151,028	low pressure systems
33	megawatts
219	gigawatthours/annum

CAPABILITIES

Past Successes



Available Funding and Targets



MYPD2 Allocation for EE and DSM

5.4 billion ZAR, over

3 years, to deliver

1 037 MW demand savings and

4 055 GWh energy savings.

EEDSM FUNDING

Mechanisms and Programmes



Key Considerations

- Target multiple economic sectors and technologies
- System Considerations:
  - Optimal balance between Energy and Demand savings
  - Focus on when the savings are required
  - Contracting for sustainability
- Customer Considerations
  - Short approval lead times and quick mobilisation
  - Payment structures to support cash-flows
  - Optimal Measurement & Verification requirements
- Pricing Considerations
  - Avoided cost
  - Technology cost
  - Market Uptake

Existing Funding Mechanisms and Programmes

ESCo Model

Performance Contracting

Standard Offer

Standard Product

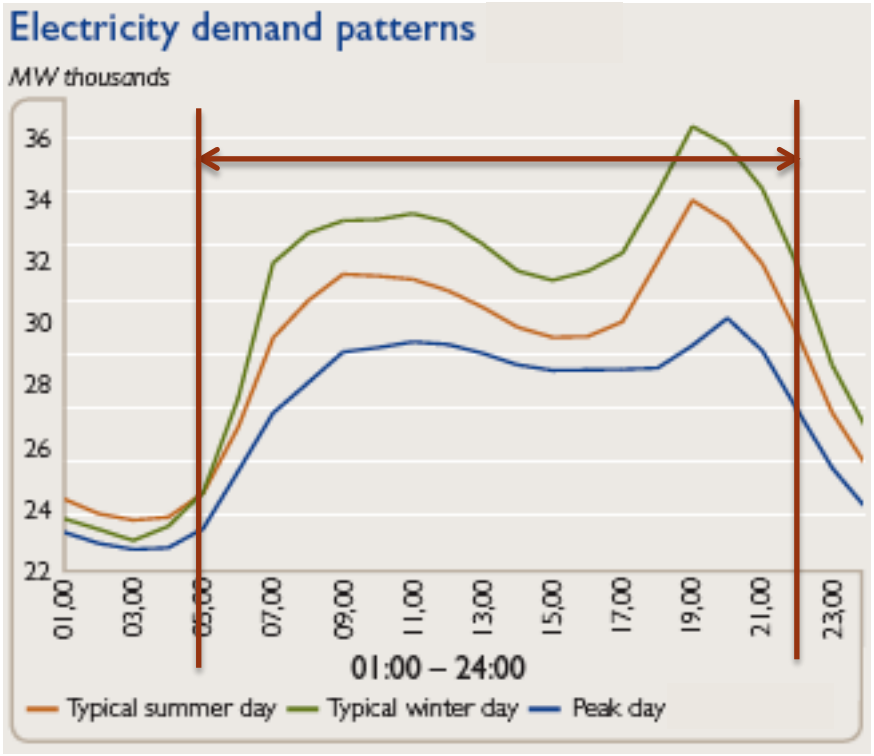
Mass Rollouts

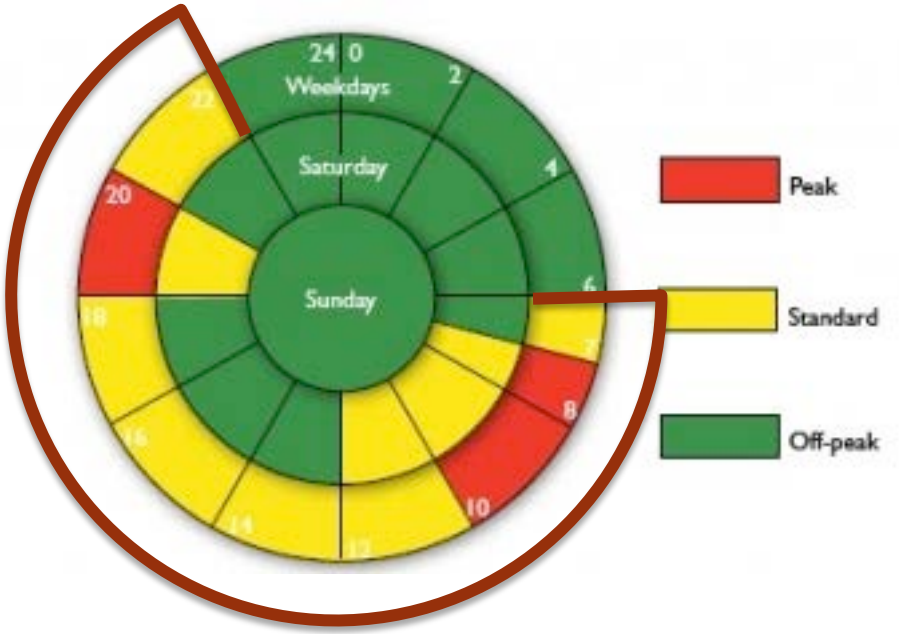
- Solar Water Heating
- Residential Mass Roll-out
- Shower heads

Standard Rebates

- Solar Water Heating & Heat Pumps

South African periods of peak consumption
priority target for energy efficiency interventions





ESCo Model

Demand-based payments for verified savings.

Process Optimisation, Lighting, Heat Pumps, HVAC, etc.

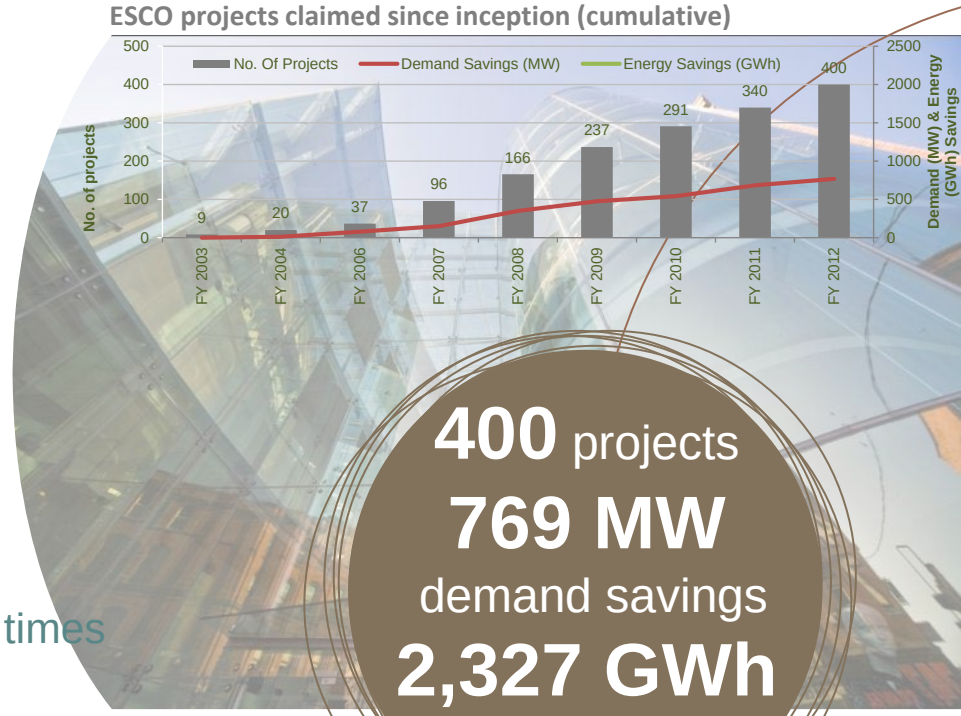
Individual Projects with unique requirements

Size: >1MW
Market focus: Industrial

Payments based on technology cost benchmarks averaging
R5.25m/MW

Issues with ESCo model:

1) Individual project approvals and long lead times
2) Not applicable to “mass market”
3) Inconsistent evaluation criteria
4) Cumbersome governance processes
5) Complex and onerous contracts



Standard Offer

Energy Efficiency payments at a fixed rate for a fixed period (16 hours)

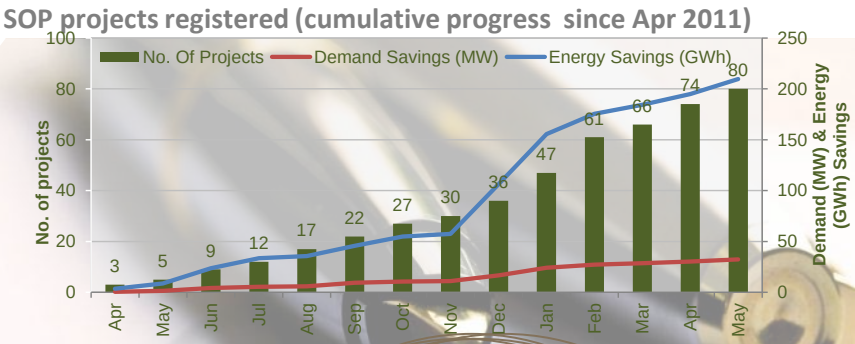
Lighting, LEDs, Hot Water Systems, Solar, Industrial Process Optimisation and Renewables

Replace inefficient technologies with a pre-approved suite of energy efficient products

Size: 10kW-5MW (Mon-Fri 6:00-22:00)
Market focus: Industrial / Commercial

Standard rate per kWh per technology
42 – 120 c/kWh (Peak Hours)

Sustainability ensured by procuring energy savings over a 3 year period (70% on completion and 10% pa thereafter)



80 projects
32.3 MW
demand savings
209.6 GWh
energy savings

Performance Contracting

Bulk buying of energy savings from project developers for multiple projects
Energy efficiency-based payments for verified savings (24/7).

Compressed air, Ventilation, Lighting, Shower heads, Heat pumps, SWH, etc

Large, Capital Intensive Industrial projects.

Size: >30GWh for 3 years
Market focus: Industrial

Multiple fixed rates per kWh based on time of savings
Peak 55 c/kWh
Other 10 c/kWh

Sustainability ensured by procuring energy savings over a 3 year period



Standard Product

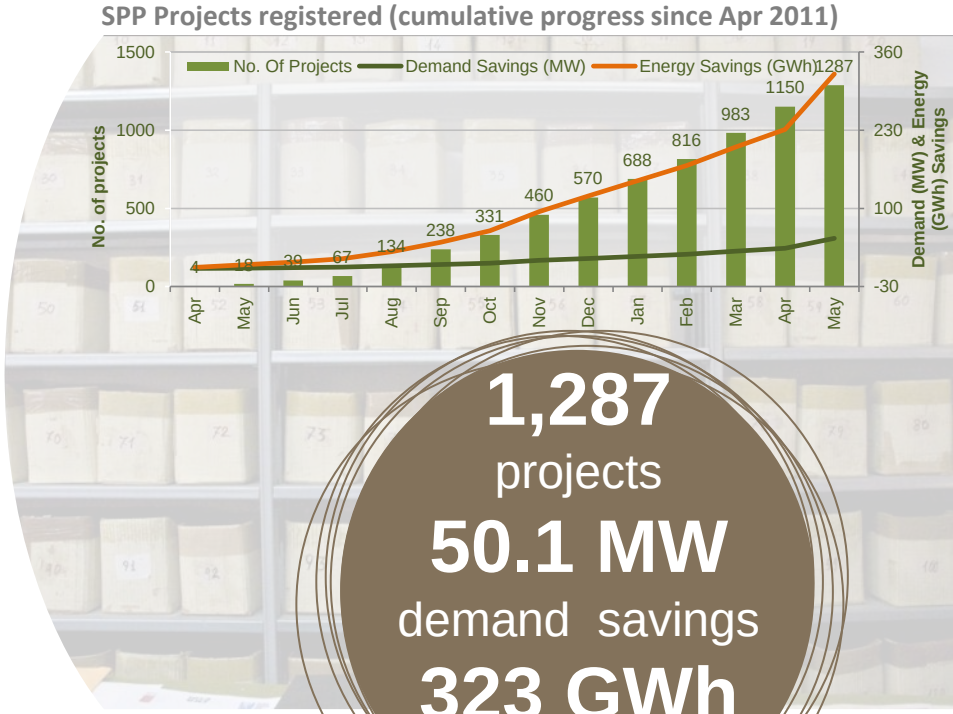
Pre-approved rebates for deemed energy savings (24/7) achieved through specified technologies – efficient replacements

Lighting, Shower heads, Industrial heat pumps

Small to medium projects

Size: <250kW savings
Market focus: Commercial

Standard value per rebated item, scaled to 85% of SOP
Rebate capped at R1,875,000

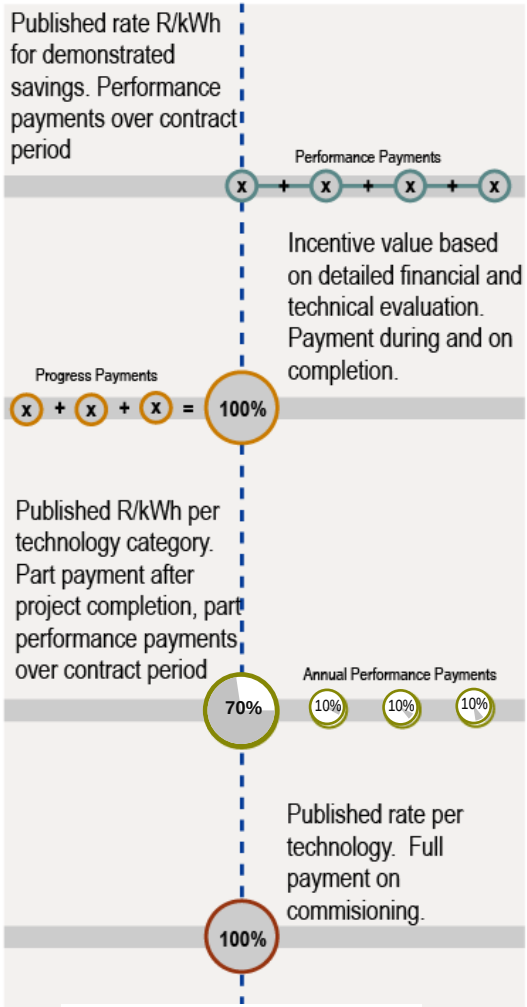


How can Eskom help you implement an energy efficient solution?

Funding Models (Who is it for?)	How much power will Your project save?	Which technologies will you implement?	How long is the approval process?
Performance Contracting* (Industrial)	>30 GWh in 3 years	Custom or hybrid solution	3-4 Months
Aggregated Standard Product (Industrial & Commercial)	5 MW	Limited to specific products on a published list	2-4 weeks
Residential Mass Rollout (Residentail)	1 MW; 1 MW Batches; 1 MW Batches	Limited to specific products on a published list	2-4 weeks
ESCO Model (Industrial & Commercial)		Custom or hybrid solution	6-18 Months
Standard Offer (Industrial & Commercial)	250 kW	Limited to categories of technology on a published list	Less than 2 months
Standard Product (Commercial)	50 kW; 0	Limited to specific products on a published list	Less than 2 weeks

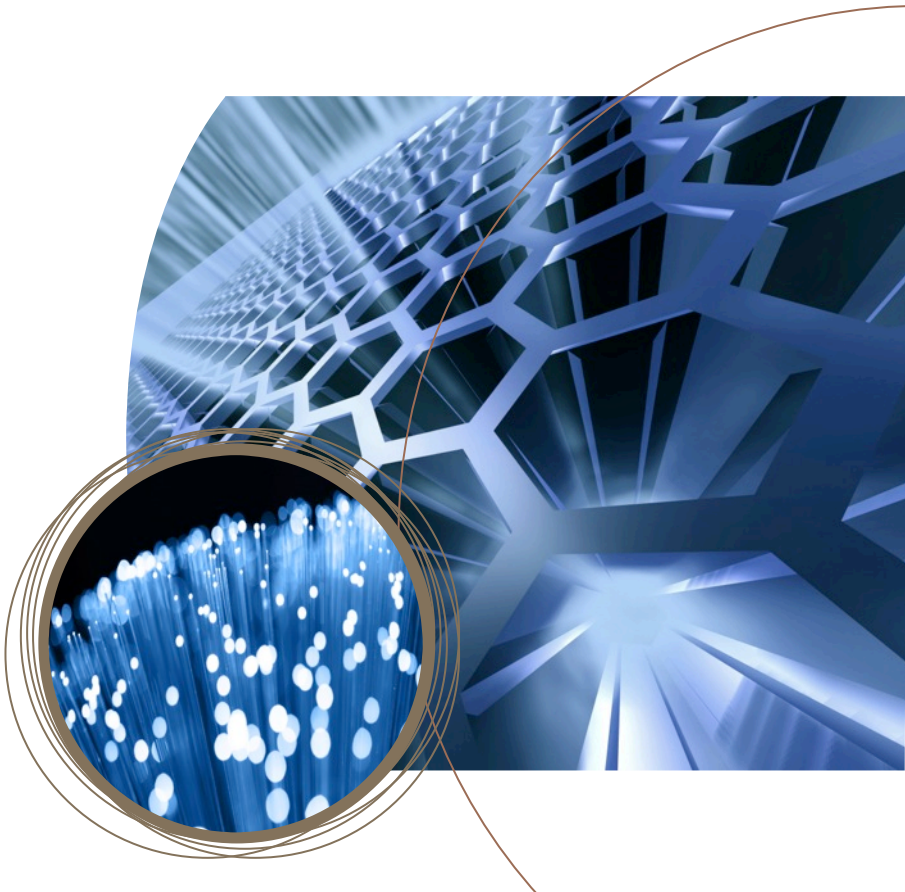
* Pending finalisation of offer

How and when are the rebates paid?



FUTURE

Emerging and Future Focus



Significant opportunities exist is the Residential Market

Market segment 1
(~21% of households)

LSM 1 – 3
(number of appliances)

6.8 m	1.8 m
0.2 m	-
0.9 m	-
3.2 m	0.1 m

Market segment 2
(~58% of households)

LSM 4 - 7
(number of appliances)

54.1 m	10.7 m
4.1 m	0.09 m
6.5 m	1.2 m
22.1 m	2.4 m

Market segment 3
(~21% of households)

LSM 8 – 10
(number of appliances)

44.4 m	5.5 m
3.2 m	0.8 m
5.0 m	2.4
11.2 m	2.4 m

(Source: Frost and Sullivan Market Analysis for Residential market 2012

lighting
televisions
Kitchen appliances
Motors
geysers
Pool pumps
Fans
HVAC (heating and cooling)

Energy efficiency and renewable energy are key components for optimal energy usage



Optimal energy usage requires a combination of energy efficiency and **small-scale renewable energy** interventions.

Accordingly several initiatives, including India's Ministry of Power and Canada's Clean Air Partnership, have broadened their **definitions of DSM** to incorporate **green/renewable energy.**

Eskom IDM, will be rolling out a small-scale renewable initiative as a **pilot** in consultation with NERSA.

LED technology is making strides and offer the next tier of energy improvements in lighting

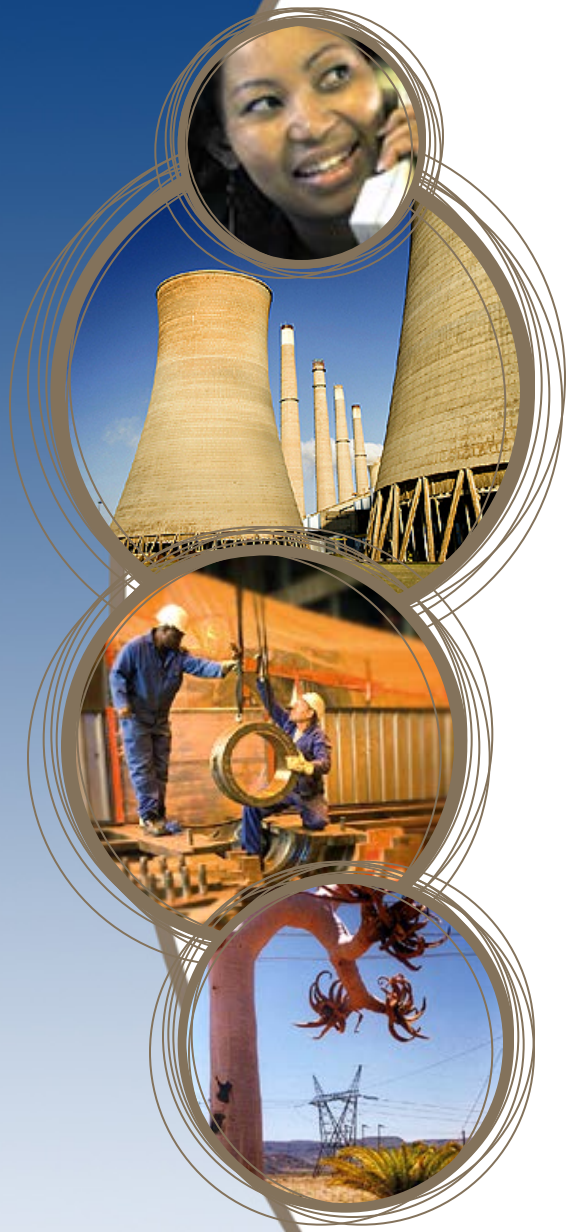


14 million downlighters installed

4.6 million in commercial/industrial market

420 MW peak demand savings potential

Source: http://www.blowzone.co.uk/contemporary-led-chandeliers.php



Please contact me to get your Energy Efficiency Project funded - wayne.fortuin@eskom.co.za 0215242000 0823740733

Thank you

www.eskom.co.za/idm