



## **Eskom – Looking Ahead**

Eskom Holdings Limited  
South Africa

**19 October 2010**



# Disclaimer



Certain statements in the this presentation regarding Eskom’s business operations may constitute “forward looking statements.” All statements other than statements of historical fact included in this presentation, including, without limitation, those regarding the financial position, business strategy, management plans and objectives for future operations of Eskom are forward looking statements.

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# Overview of this presentation



**1. Brief overview of Eskom**

2. The results for 2010

**3. Preparing for sustainable growth**

4. Capacity expansion programme

**5. Focus on funding**

6. Response to climate change and renewable energy

**7. Role of independent power producers and opportunities for investors**

8. Opportunities in Southern African Development Community

# The global challenge: To sustain growth and prosperity

## South Africa 1994-2008 growth

64%

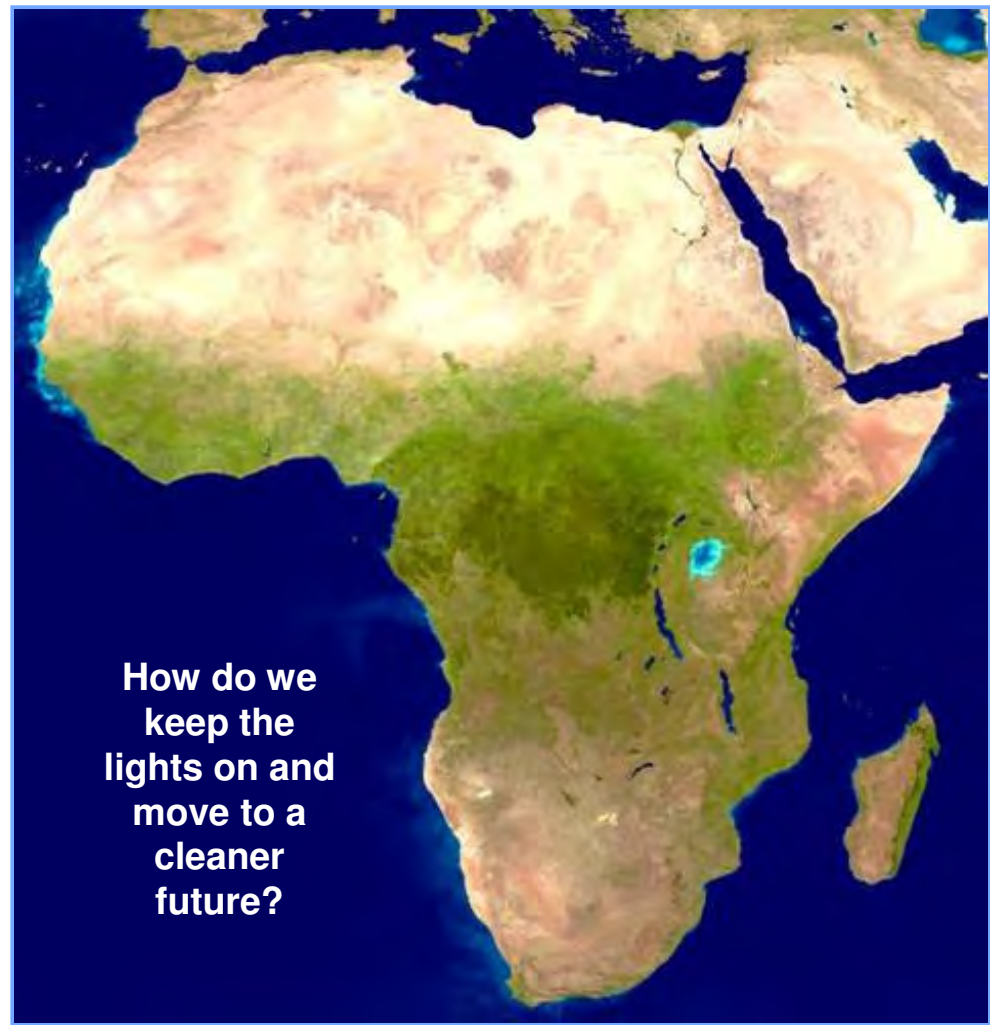


**Real GDP**

14%



**Power capacity**  
(~5 000 MW)



This requires vast investments in power generation capacity; affordable and universal access to electricity; move to a cleaner future

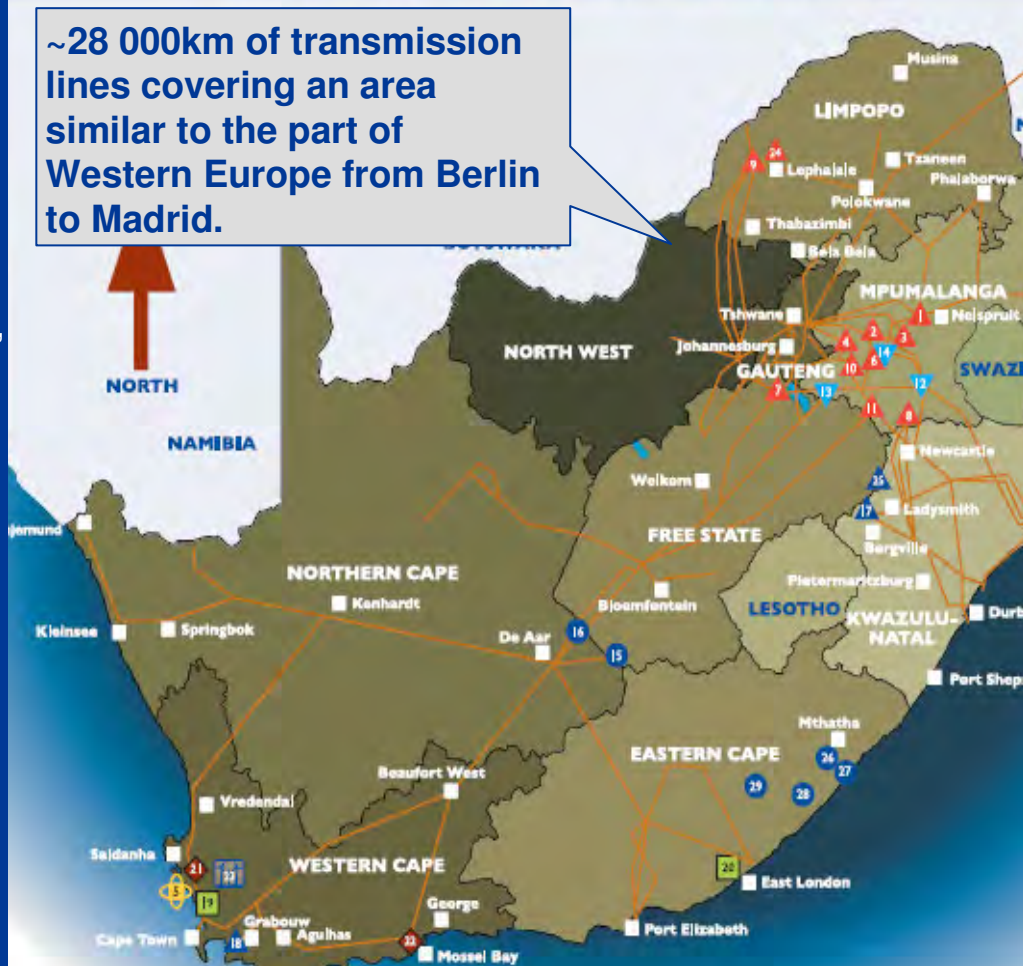
# Eskom Generation resources: balance demand with supply



## Supply Side overview

- 27 operational power stations
- ~40,7GW of operational capacity
- Just over 80% coal-fired. Mix of nuclear, open cycle gas turbines, hydro and pumped storage plant in remaining 20%
- Imports of about 1500MW
- Returning 2 mothballed coal-fired stations, building 2 coal-fired and a pump storage station
- Country capacity of ~43,5GW

## Eskom Power Stations



## Demand Side overview

- 29% of South Africa's energy demand provided by electricity
- Forecast of about 37GW peak demand in 2010 and over 240TWhrs of energy demand in 2010/11
- Largest 138 customers consume nearly 40% of the energy
- Largest 40 000 customers consume nearly 75% of the energy
- Approximately 8 million customers consume about 20 to 25% of the energy

**Consistent tight supply-demand balance with a very extended electricity transport system**

- **One of the 10 largest electricity utilities in the world by generation capacity**
- **Supplies ~ 95% of electricity used in South Africa**
- **Supplies ~ 45% of electricity used in Africa**
- **Permanent employees: ~ 39 200**
- **Electricity customers: ~ 4 463 000**
- **Electricity sales: ~ 218 000 GWh pa**
- **Net maximum capacity: 40 867 MW**
- **Power lines: ~ 380 000 km (all voltages)**
- **Eskom has 27 power stations, 13 coal-fired, one nuclear, one wind, two pumped storage, six hydro and four gas**



# Shareholder compact



Performance area	Company level performance indicator	2009 /2010 Actual	2009 /2010 Target	Goal achieved
Provision of electricity	Generation capacity	452MW	420MW	✓
	Transmission lines	600km	428km	✓
	Transmission MVA	1 630MVA	1 365MVA	✓
Reliability of supply	Load shedding	None	None	✓
	Internal energy efficiency <sup>(1)</sup>	46,7GWh	15%	✓
	New capacity capital expenditure	R33 713m	R50 454m	✗
Business sustainability	Cost / kWh <sup>(2)</sup>	R0,25	R0,27	✓
	Debt: equity	1,68	1,75	✓
	Interest cover	0,45	0,23	✓
Skills development, procurement	Local content	73,9%	50,0%	✓
	Eskom trainees	5 255	4 500	✓
	Engineering trainees	3 780	3 500	✓
	Non-Eskom learners	236	450	✗

1.Target to be set at end of August 2010 at 15% of base case

2. Cost excludes depreciation, fair value, forward exchange cost, embedded derivatives and other income

# The results for 2010

# On the path to recovery

- Return to profitability
- We are keeping the lights on...
- While making significant investments in a brighter future
- A clear recovery strategy in place with a realistic timeline
  - First results are encouraging, but the next few years pose tough challenges
- In a long-term industry, our timetable, efficiency targets and renewable energy commitments are ambitious
- Board and Executive team fully in place
- Successful FIFA 2010 World Cup™

# On the path to recovery



## Securing energy supply

- **No load shedding** since end-April 2008
- Reserve margin at **16,4%**
- **Successful 2010 FIFA World Cup™**

## Driving generating capacity

- **452MW** of additional capacity commissioned
- **600km** of high-voltage transmission lines added
- **12 300MW** of additional capacity by 2017
- Significant funding secured to finance the capacity expansion program:
  - **\$ 3 billion** loan from the African Development Bank (Medupi)
  - **\$3 billion** COFACE & HERMES covered ECA facilities (Medupi & Kusile)
  - **\$3,75 billion** loan from the World Bank (Medupi and renewable energy)

## Improving financial health

- Return to profitability: **net profit of \$0,5 billion** (2009: loss of \$1,3 billion)
- Renegotiated commodity-linked power agreement with key customer
- Funding solution well advanced with shareholder support

## Strategic focus

- New leadership thrust, Eskom board, management and shareholder aligned around the turnaround plan

## A supportive shareholder

- Strong Government support to provide financial resources needed to deliver on the build program:
  - **\$8 billion** subordinated shareholder loan (\$5,3 billion advanced)
  - **\$23,5 billion** South Africa government guarantee (\$15,6 billion committed)

# Key performance ratios



		2010	2009
Current ratio <sup>(1)</sup>	ratio	0,99	1,02
Debt: equity including long-term provisions	ratio	1,55	1,22
Interest cover	ratio	0,57	(0,80)
Free funds from operations (FFO) <sup>(3)</sup>	\$m	1 404	373,7
Return on total assets	%	2,2	(1,2)
Return on average equity	%	5,6	(16,0)
Revenue per kWh (total electricity sales) <sup>(3)</sup>	US cents per kWh	4,2	3,3
Operating costs per kWh <sup>(2)</sup> (electricity business) <sup>(3)</sup>	US cents per kWh	3,7	3,4
Bad debt as % of revenue	%	0,82	1,54
Average days debtors	days	22	21
Average days coal stock	days	37	41

(1) Current ratio is calculated as: current assets / current liabilities

(2) Operating costs including depreciation and amortisation

(3) Conversion exchange rate used \$1:R7.50

# Preparing for Sustainable Growth

As part of a comprehensive strategic review, the Eskom purpose was confirmed...

To provide sustainable  
electricity solutions to grow  
the economy and improve the  
quality of life of people in  
South Africa and in the region

# The Eskom we want to create is ...



## **A low-cost good investment**

- the global benchmark for investment analysts.

## **A trusted company globally**

- ethical, well governed and build a trusted relationship with stakeholders and we are a trusted advisor.

## **A green energy company**

- lower emissions, higher efficiency

## **The best company to work for**

- rated as the employer of choice in SA and SADC by employees and prospective employees.

## **A top 5 power utility**

- in the top 5 peer benchmarking

## **Customer centric**

- consistently rated by our customers in the top quartile

## **Caring and providing electricity for all**

- it is in our interest and that of South Africa to make sure there is electricity for all.

## **A zero harm company**

- zero harm to people and the environment.

## **A significant regional player**

- driving Investment in Generation, Transmission and Distribution and growing customer base.

While it will take substantial effort from many stakeholders to overcome the current electricity challenges in South Africa, Eskom will play a leading role and actively partner to prevent load shedding

In the next seven years this means that Eskom will:

- maintain and maximise the efficiency of our existing assets, as well as ensuring delivery of our new build programme, our demand management programmes, and our internal energy efficiency targets.
- support private players coming into the sector to provide renewable, co-generation and other energy projects. To facilitate this, Eskom will create an internally ring-fenced single buyer to facilitate the introduction of independent power producers.
- partner with Government and other stakeholders to unlock additional demand-side management commitments.
- collaborate with Government, business and other stakeholders to implement safety nets such as the Energy Conservation Scheme, demand response programmes and increased use of the open cycle gas turbine stations

# South Africa needs significant capacity expansion

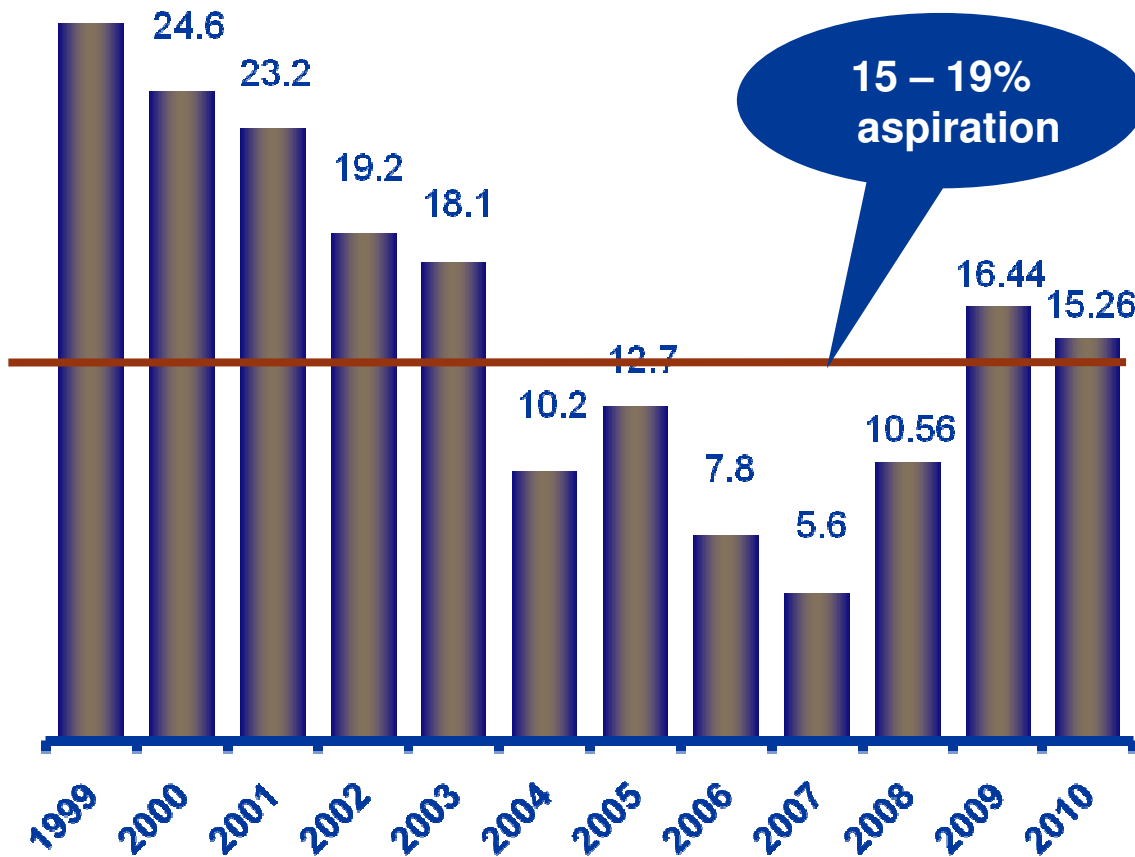


- South African economy is expanding rapidly
- South Africa needs to more than double existing capacity by 2028
- South African power supply supports neighbouring states
- Eskom power is essential for economic growth and job creation in southern Africa
- Current projects required to improve the reserve margin and to prepare South Africa for the economic upturn

# **Eskom's Capacity Expansion Programme**

# The declining reserve margin in South Africa

Net Reserve Margin (%)



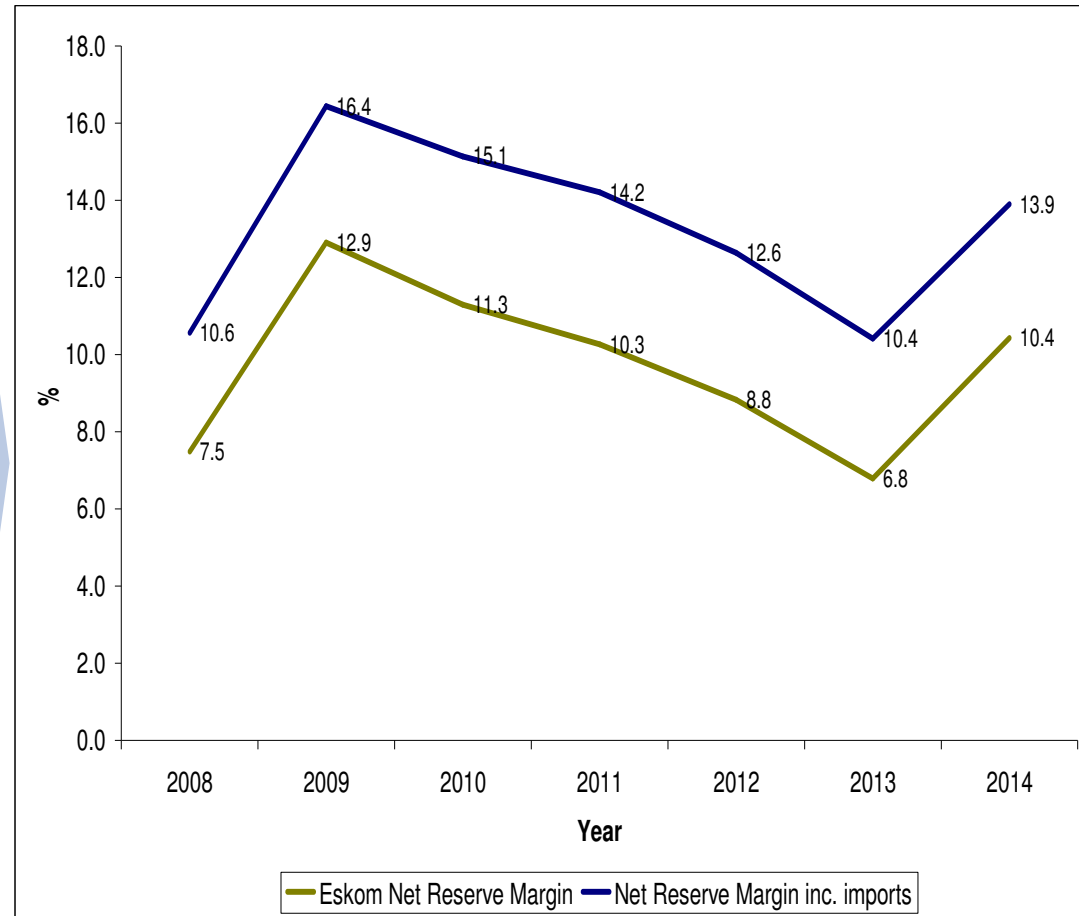
- In South Africa the aspiration has always been between 15-19%.
- Below 12% reserve margin the ability to operate the grid securely is compromised.
- Recent improvements on the reserve margin to around 16% was due to the drop in demand and new generating plant commissioned by Eskom
- A lead time to build a power station is 7 to 10 years.

# Prognosis for the Eskom Reserve Margin in the next 5 years



## Key assumptions

- **Growth:** Over a 10-year period a 3,2% energy growth and a peak capacity of around 3% is expected
- **Supply side assumptions:**
  - Eskom's new build programme as per original schedule (Medupi, Kusile, Ingula)
  - Does not include all the supply options as they are not yet firm projects. (DoE IPP OCGT, the renewables and some co-generation options)
- **Demand side assumptions:**
  - Intensive demand side management programmes or other demand management programmes will reduce the expected growth rates in energy and peak capacity.



**The reserve margin information is updated regularly and is available on the Eskom website. The impact of the recent regulatory determination is being factored into the future reserve margin projections.**

# The build programme adds ~17,2 GW to the national grid



Portfolio					
	<b>Return-to-service (RTS)</b>	<b>New coal</b>	<b>Peaking &amp; wind</b>	<b>Mpumalanga refurbishment</b>	<b>Transmission</b>
	<ul style="list-style-type: none"> <li>▶ Komati</li> <li>▶ Camden</li> <li>▶ Grootvlei</li> </ul>	<ul style="list-style-type: none"> <li>▶ Medupi</li> <li>▶ Kusile</li> </ul>	<ul style="list-style-type: none"> <li>▶ Ankerlig</li> <li>▶ Gourikwa</li> <li>▶ Ingula</li> <li>▶ Sere</li> <li>▶ Concentrated solar power (CSP)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Duvha</li> <li>▶ Kriel</li> <li>▶ Matla</li> <li>▶ Arnot</li> <li>▶ Majuba rail</li> </ul>	<ul style="list-style-type: none"> <li>▶ 765 KV projects</li> <li>▶ Central projects</li> <li>▶ Northern projects</li> <li>▶ Cape projects</li> </ul>
Programmes / Projects					
MW/km	3 720MW	9 564MW	3 636,3MW	300MW	4 700km



Enhancement of the national grid through  
 ~17 220MW of new capacity plus  
 ~4 700km of required transmission network

# Progress to date

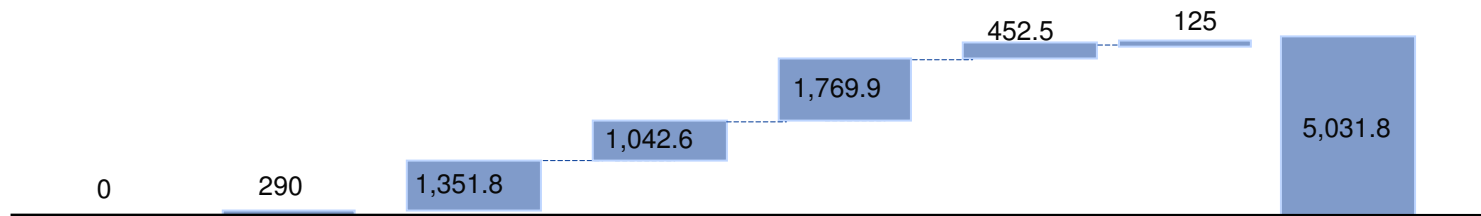


To date, a large amount of construction work has been completed, adding ~5,031,8MW, ~2 993,8km of transmission network, and ~12 255 sub-stations . . .

## Megawatts



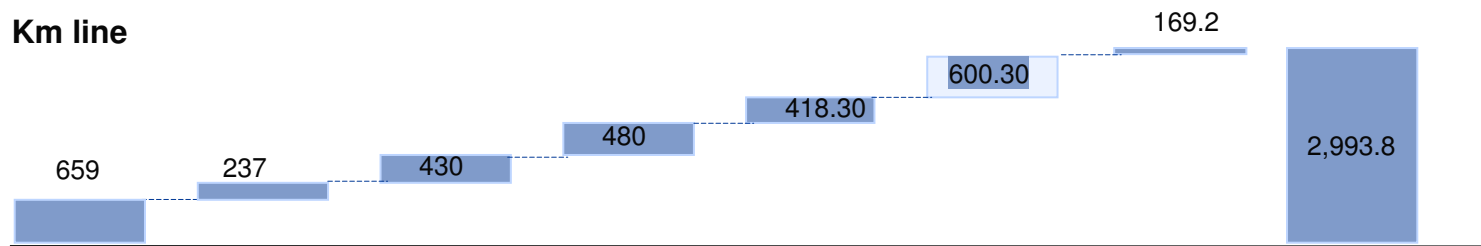
## MW of capacity



## Transmission



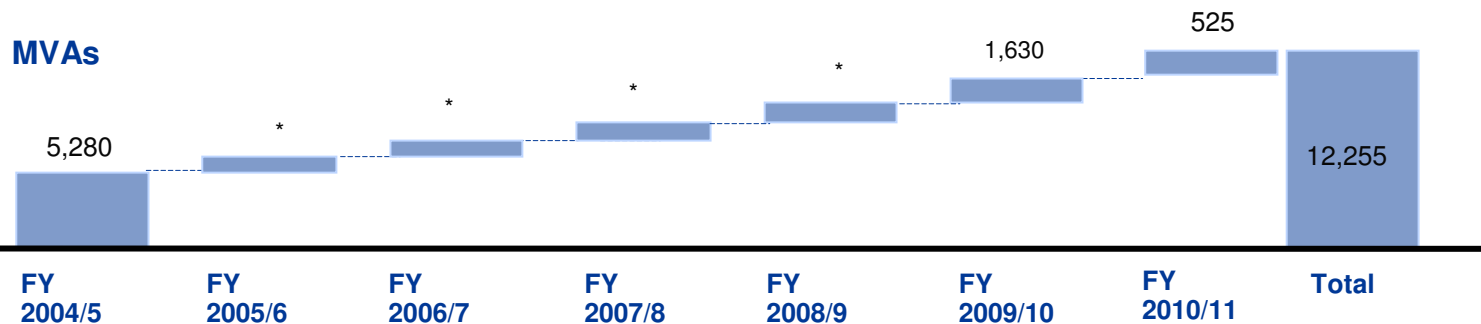
## Km line



## Substations



## MVAs



# Each project measurably impacts the local towns and SA through local spend and investment



## Impact on local town's GDP from each project

Lephalale (Medupi)

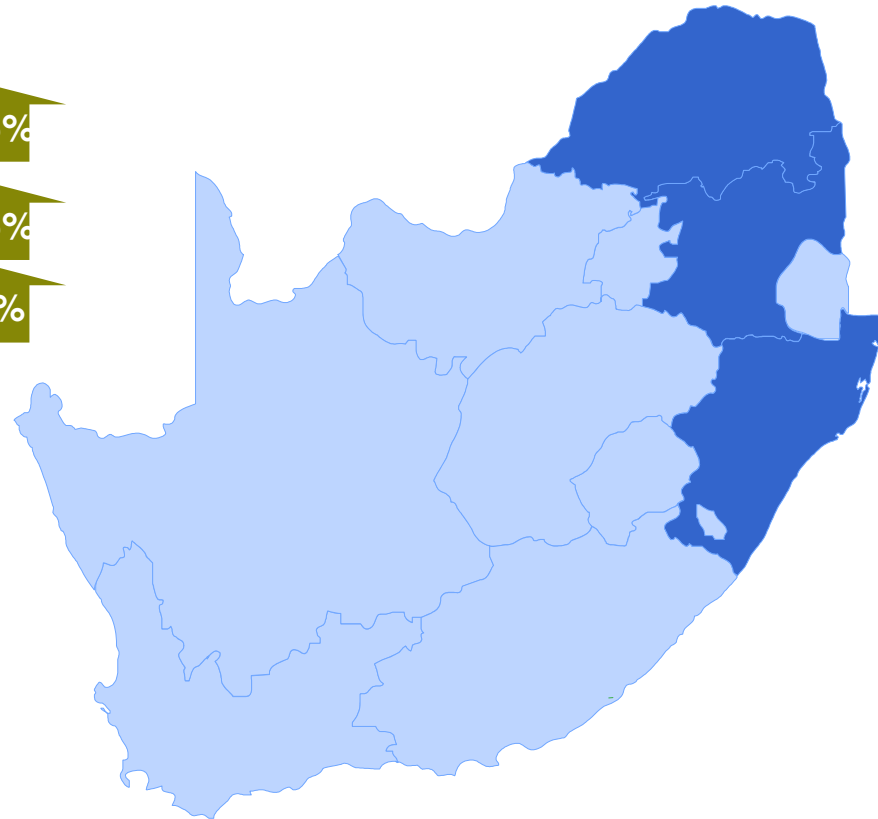
95%

Delmas (Kusile)

25%

Ladysmith (Ingula)

1%



## South Africa GDP impact:

Medupi	0,34% /yr
Kusile	0,34% /yr
Ingula	0,04% /yr

**Total 0,72% /yr**

## Other businesses and infrastructure :

- Catering
- Laundry
- Building companies
- House maintenance
- Hotels
- Entertainment
- Training facilities
- Security
- Schools / education
- Policing
- Churches
- Medical care
- Banks & financial services

# Eskom's Medupi, Kusile and Ingula power stations alone are projected to create ~40 000 direct and indirect jobs that will impact ~160 000 people in total (employment)



	Medupi	Kusile	Ingula
<b>DIRECT</b>			
On site construction	8 300	7 200	4 100
Supporting project staff	2 200	2 000	300
Coal mine expansion	2 100	2 000	
Transmission expansion	2 700	200	
Crocodile River expansion	3 000		
Ongoing operations	700	600	100
<b>Subtotal</b>	<b>~19 000</b>	<b>~12 000</b>	<b>~4 500</b>
<b>INDIRECT</b>			
Social services + local business	1 700	1 700	1 100
<b>Total employed</b>	<b>20 700</b>	<b>13 700</b>	<b>5 600</b>
x family multiplier (4/family)	<b>X 4</b>		

**People directly impacted by Medupi, Kusile & Ingula ~160 000**

Other projects such as 765kV and Return To Service (RTS) provide ~ 11 000 direct employment opportunities during construction and a further ~1 700 during operation



In addition to the jobs created, 6 130 individuals are undergoing, or have completed, formal training (skills development)



An integral part of an Eskom contract is a commitment by suppliers to invest in the training and development of the South African skills base

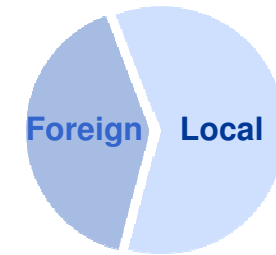
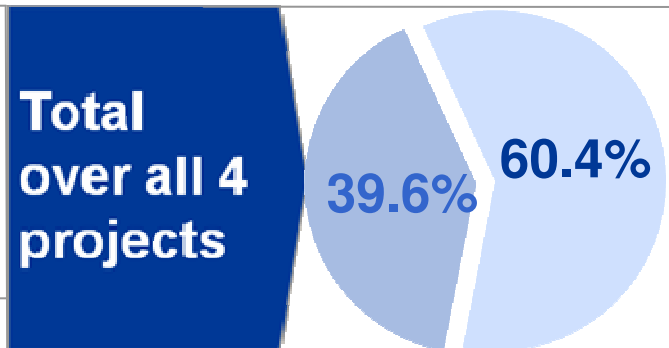
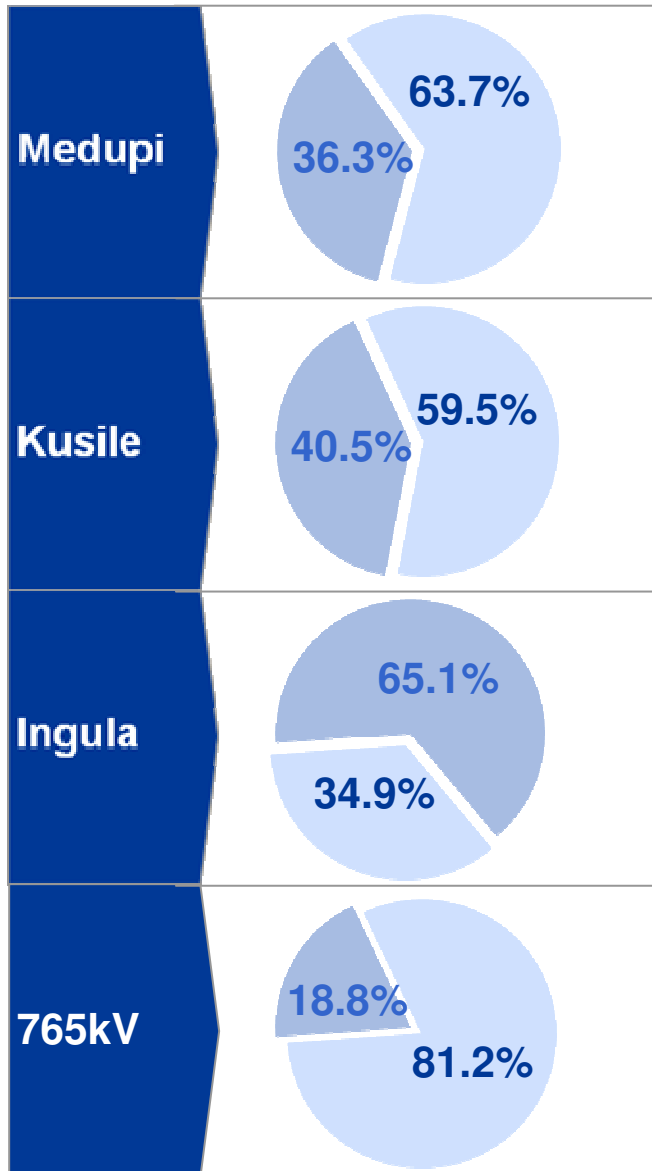
Area	Committed numbers	In training	Training completed
Medupi	2178	1299	284
Kusile	2234	792	626
Ingula	137	16	5
Power Delivery	1382		1002
Plant and Equipment	199	38	1137
<b>Total</b>	<b>6130</b>	<b>2145</b>	<b>3054</b>



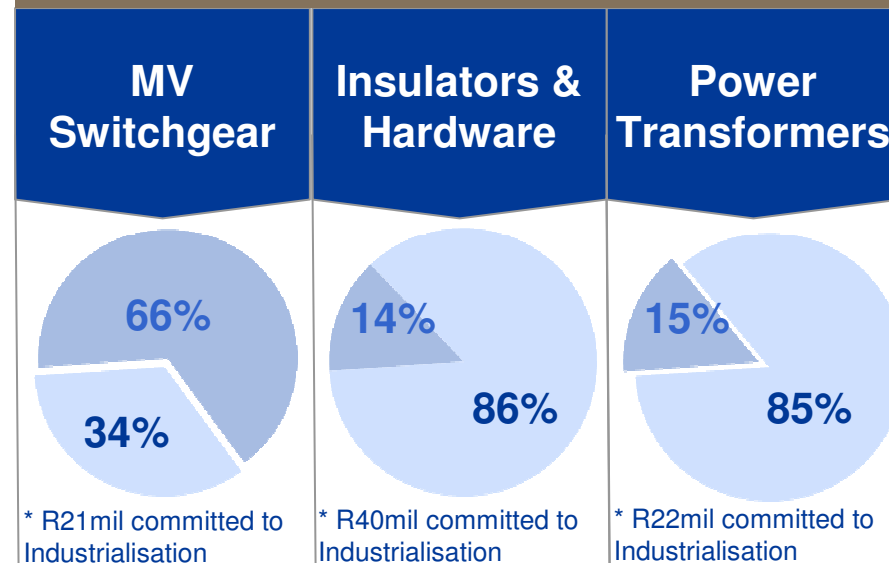
Majority of training takes place in the following disciplines: coded welders, boilermakers, riggers, fitters, technicians, laboratory technicians and quantity surveyors



Across all major builds, Eskom's localisation content in most cases exceeds 50% as at the end of 2009/2010 (localisation)



Since inception of Competitive Supplier Development Programme (CSDP) some of the following fleet procurement and localisation was achieved



New local supply chains for parts have already been created, benefiting local businesses and addressing SA's industrialisation agenda (industrialisation)



**Hitachi is investing ~R900m in facilities and training in South Africa**

**Actom committed to an investment of R84m in local facilities**

**Sulzer SA, a local manufacturer of feed pumps, has grown significantly**



**Pfisterer investment of R25m in plant in KZN**

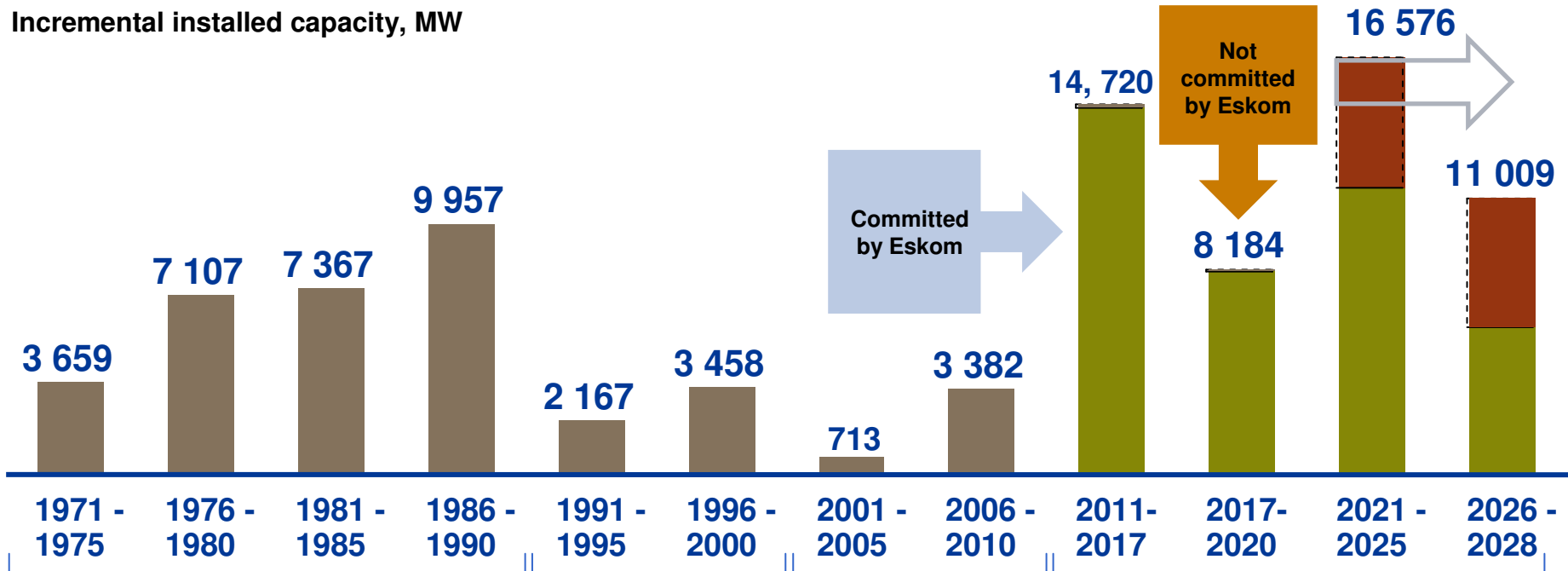
**Powertech committed an investment of R22m**

# Focus on Funding

# South Africa needs to create 50GW<sup>1</sup> of new electricity capacity by 2028, requiring a faster build rate than ever



Incremental installed capacity, MW



- Huge Eskom-driven investment, with clear objective to provide abundant cheap power

- Excess capacity - more than 10 GW mothballed

- Under-investment, despite warnings of looming crisis

- IPPs did not deliver as intended
- Significant capacity returned to service through de-mothballing

- Future capacity needs require a massive build programme

- Huge funding and skills requirements
- Complex context involving multiple objectives, technologies and stakeholders

- Actual installed<sup>2</sup>
- Planned net increment (incl. Demand Side Management)
- Planned to replace decommissioning

<sup>1</sup> Including 10GW needed to replace decommissioned capacity, and 5GW of DSM (embedded in planned)  
<sup>2</sup> Historical figures do not include capacity to replace decommissioning

- On 24 February 2010, the National Energy Regulator of South Africa announced that it had granted Eskom tariff increases of 24,8%, 25,8% and 25,9% respectively over the MYPD2 period
- The sustainability and viability of the Eskom business as well as national security of electricity supply over the next seven years is fundamentally dependent on effective management of the funding requirements for the current and future build program.
- To this end, we have developed a cash flow , income statement and balance sheet forecast that considers the implication of the build program and capacity additions to the business over the next seven years

# Overview of the financial model



- **The key outcome of the financial forecast is the quantification of Eskom's cash flow shortfall**
- The **“Funding Gap”** in the model is defined as the total cash shortfall resulting from capital expenditure that is not off-set by the profitability of Eskom and its current secured or highly probable funding agreements
  - The seven-year forecast is considered by Eskom to best reflect their current build plan with Kusile fully operational
- The model consists of :-
  - Revenue calculated in terms of the National Energy Regulator of South Africa MYPD2 price determination tariffs, namely 24,8%, 25,8% and 25,9%
  - All committed capital (Medupi, Ingula, Kusile) and uncommitted capital (nuclear, renewables)
  - Assumes the base operating expenditure as from 30 November 2009
  - Assumes a 25% increase in the average tariff in Years 4 and 5, with 6% increases assumed thereafter
- The model shows a cumulative funding gap (including uncommitted capital of \$21 bn) of \$28 bn over seven years

# Conclusions on funding



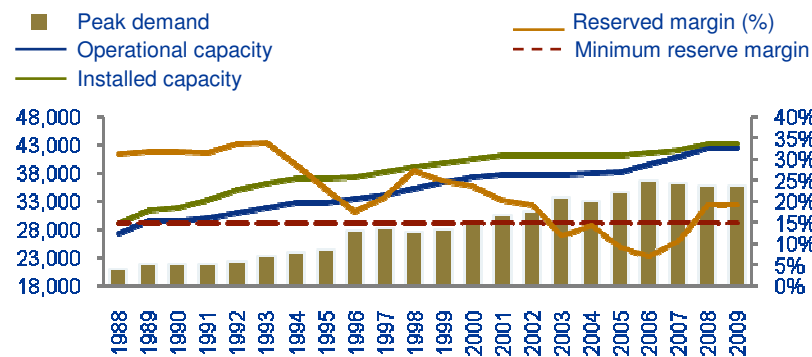
- Eskom realises the strategic importance of maintaining a strong investment grade rating
- Eskom is committed to achieving a financial profile that is commensurate with a “standalone” investment grade rating. In particular, Eskom is committed to targeting the following financial ratios:
  - FFO/Debt of 17,5%
  - Net Debt/EBITDA of 3.0–3.5x
  - Debt/Capital of 40–45%
  - Liquidity >1.0x debt and capex maturing in the following 12 months
- Eskom intends to pay dividends only once the company’s financial profile has recovered to a level consistent with the above ratios
- Over the past months, Eskom has vigorously analysed and deliberated various funding options in collaboration with key parties – Department of Public Enterprises, Department of Energy, and National Treasury
- **There is full acknowledgement with Government as shareholder on our financing plan, the need to complete Kusile, the debate is to what is the least risk for Government:**
  - 1: Need to finance only the committed capex
  - 2: Identification of cost savings
  - 3: Injection of new equity or Guarantees or a combination
- Eskom is confident that the above solutions will be adequate to close the projected funding gap and achieve the long-term objectives of its stakeholders

# South Africa remains low cost producer



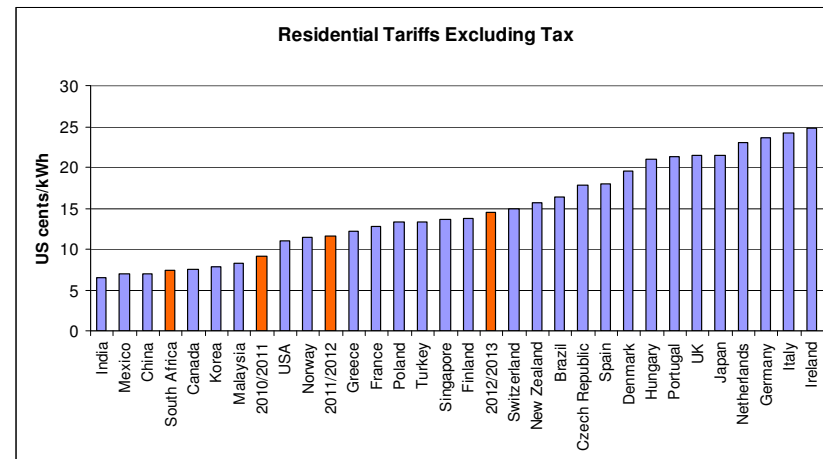
## Factors leading to tariff increases

- Strong economic growth caused electricity demand to outstrip supply
- Underinvestment in capacity resulted in low reserve margins
- Low reserve margins increased operating costs
- Tariffs were insufficient to build up reserves to fund necessary capital expansion
- The projected growth of the South African economy demands a secure supply of electricity



## Committed to low cost energy

- NERSA recognises it must set a cost-reflective tariff path that will support the capex program and the introduction of IPPs
- NERSA approved tariff increases to support country and Eskom objectives
  - 2010/2011 – 24,8%
  - 2011/2012 – 25,8%
  - 2012/2013 – 25,9%
- At the end of the MYPD2 period Eskom will remain a low cost energy producer



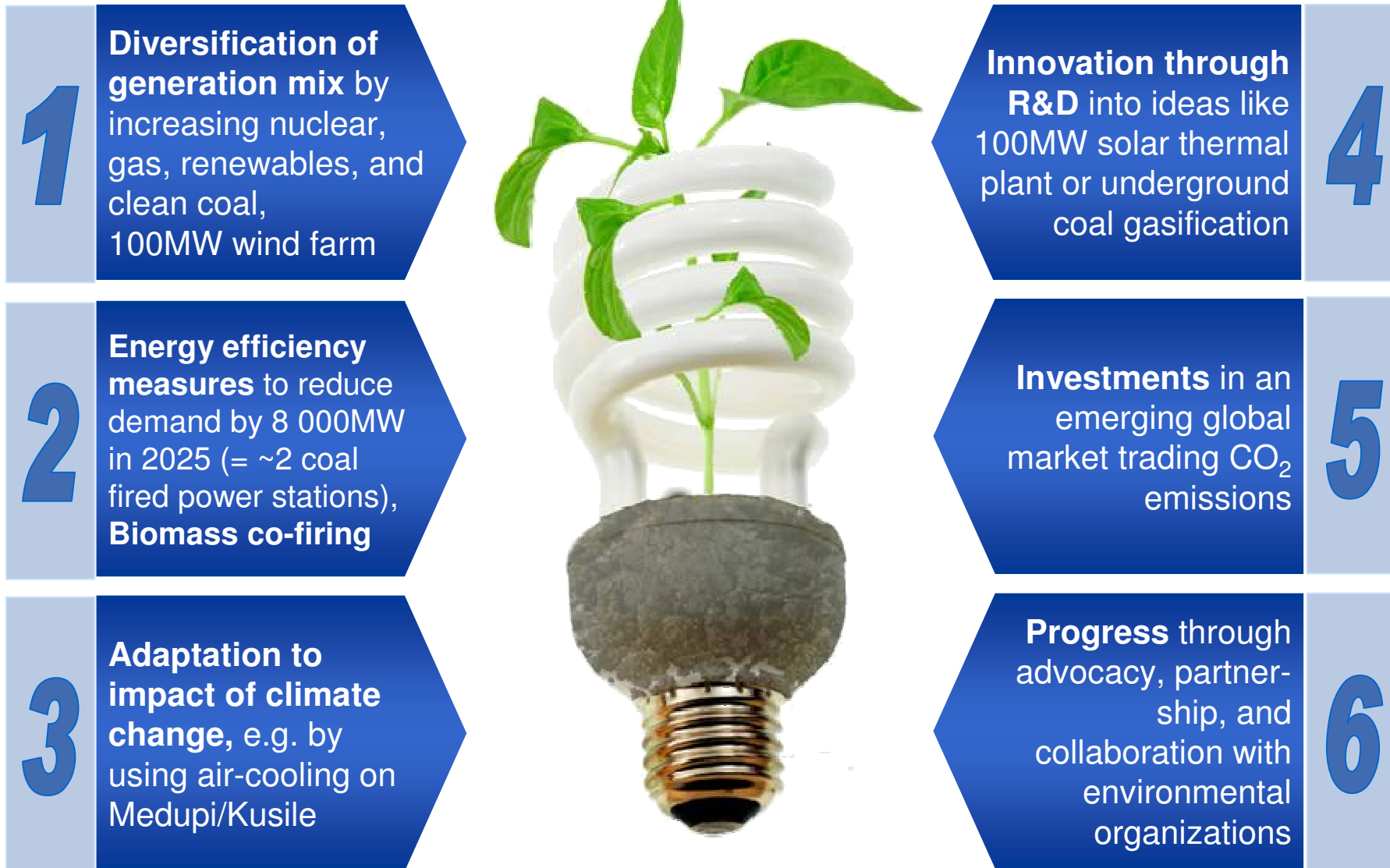
# Climate Change and Renewable Energy

## The Department of Energy has published a Draft Integrated Resource Plan that will guide the development of the future energy mix

- The draft integrated resource plan starts to set out a path for South Africa's long-term energy future, introducing new players and diversifying our sources of electricity
- The plan aims to balance affordability with the need to reduce carbon emissions and ensure security of supply
- The department of Energy is proposing that coal contributes 48% to the energy mix by 2030, renewable energy (16%), nuclear (14%), open cycle gas turbines (9%), pumped storage (6%), mid-merit gas (5%) and base-load imported hydro (2%).
- Demand-side management is hardwired in the first few years



# The Eskom climate change strategy seeks to lower CO2 emissions through a comprehensive 6-step approach



# Opportunities for diversification of energy mix

Eskom has made significant strides in ensuring that its planning takes into account a low carbon future and prioritising energy efficiency within and outside of Eskom. This included modelling a cap on emissions based on the Long-term Mitigation Strategy

## Making the existing and new coal capacity cleaner

- Development of a clean coal technology roadmap and involvement in the SA process
- Co-firing with Biomass
- Supercritical technology for Medupi and Kusile,
- Underground coal gasification pilot
- Development of a Carbon capture and storage strategy and involvement in developing an atlas for SA

## Renewables

- National Policy Interventions supporting renewables e.g. Renewable Energy Feed-In tariff (REFIT)
- Funding for 100MW wind and CSP via World Bank
- Solar Water Heater (SWH) programme established
- Off-grid options, grid connected Photovoltaic (PV)

## Nuclear

- Focusing on funding requirements and policy interventions

## Import options

- On-going assessment of potential



Existing energy mix

- Coal
- OCGT
- Nuclear
- Renewable Energy
- Imports
- Pumped Storage



2025 energy mix

# Demand-side Management is a key part of the low energy emissions solution



- **Increase efficiency of equipment and appliances in South Africa**

- R5,445m approved in Multi-Year Pricing Determination 2
- Energy efficient lighting – 43,5 million CFLs installed to date
- Solar Water Heating is next big opportunity being pursued
- Incentives for industry and households



- **Virtual Power Station**

- Flexible and non-essential loads will be controlled by System Operations
- RFI issued for 500 MW to be implemented before winter 2011
- Largest opportunity in smaller industrial facilities
- Crucial technology decisions to be made by end of year (eg. Smart metering)



- **Energy Conservation Scheme**

- Need a safety net to achieve 10% reduction against agreed baselines from (largest) 250 industrial customers
- Voluntary implementation at present
- Need mandatory implementation with zero penalties for now

**Each thrust has a very specific purpose. All are needed to address system adequacy and security**

# Eskom will reduce its carbon footprint



Eskom will target the following:

- Become the lead partner in the roll-out of South Africa's nuclear generation programme.
- In partnership, become the solar market leader in the region.
- In partnership, take a light role in wind power generation to ensure that IPPs play a significant role in this sector.
- Actively drive demand side management
- Making coal-based generation cleaner

# **Independent Power Producers and Opportunities for investors**

# Current Independent Producer Programme (IPP) status



- Introduction of private sector generation has multiple benefits:
  - Diversification of supply and nature of energy production
  - Introduction of new skills and capital
  - Reduction of funding burden
  - Benchmarking of performance and pricing
- Eskom is committed to facilitate the entry of independent power producers and will collaborate with Government, National Energy Regulator of South Africa and developers of projects to ensure this happens
- Government is working on the enabling environment for IPPs using the Inter-ministerial Committee on Energy process
- Eskom has already signed agreements with some IPPs in the last 6 months and will continue to do so within the framework of the Integrated Resources Plan (IRP) and the tariff determination for MYPD2 (multi-year pricing determination)

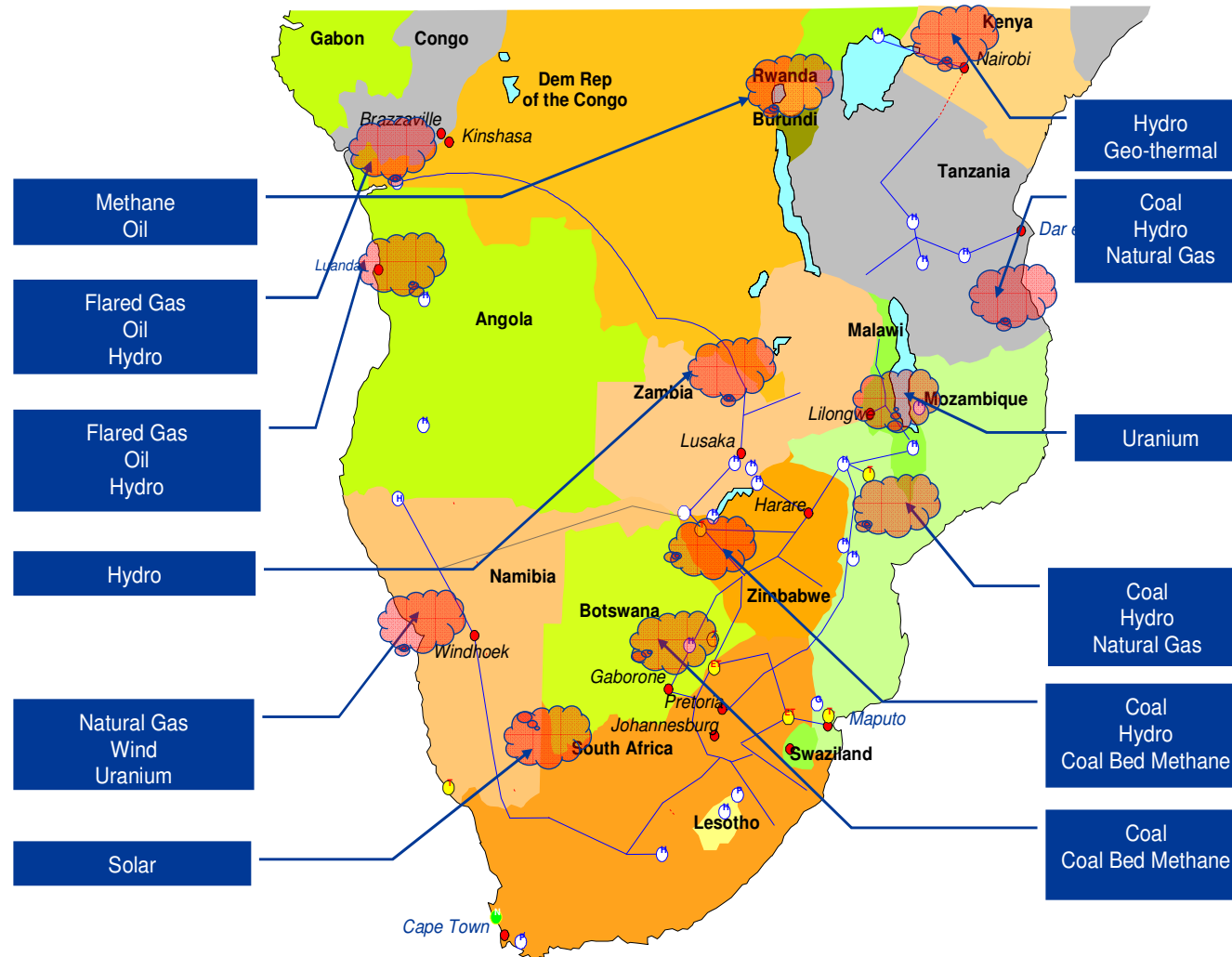
- Regional imports
- Municipal generation
- Multi-site base load IPP programme
- Co-generation
- Renewable Energy Feed-in Tariff
  - Wind, Concentrated Solar Power, Land-fills, Small Hydro as phase 1

# **Opportunities in the Southern African Development Community (SADC)**

# Southern African Development Community



- The SADC region offers significant avenues for growth and cleaner sources of power
- Significant demand growth and constrained capacity represent an investment opportunity



**Thank you**