

# Why no coal-fired IPP power until 2027?

IRP 2010 Public Participation Process

2<sup>nd</sup> December 2010



## Presentation Overview

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1. Will Eskom and the REFIT Programme suffice until 2027?
2. Why IPP coal-fired FBC power is what South Africa needs.
  - a) Clean coal combustion technology
  - b) Rural development
3. Provincial government, DMs and LMs need to be ENGAGED.
4. The Eastern Cape Coalfields – an existing Case Study.
5. Conclusions & Way Forward



## Will Eskom and the REFIT Programme suffice until 2027? Public Participation

- Current IRP relies on Eskom and Refit until 2027.
- Need to **benchmark** the cost of Eskom versus private IPP power generation costs.
- Refit relies on **renewable power, achieves only circa 30% of its installed capacity**
  - unreliable in terms of meeting the base load power requirement of predicted growth.
- **Fossil fuel power generation delivers circa +90% availability** of power.
- The **current IRP 2010 is driving away major IPP investment** in the form of base load fossil fuel power.



## Why FBC Fossil Fuel IPP is what South Africa needs?

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1. **New Fluidised Bed Combustion (FBC) technology**
  - **is clean**
  - **efficient and cost effective** in comparison with existing PF boiler installations.
2. IPP developers can deliver more **COST-EFFECTIVE** and more **QUICKLY** than predicted by the IRP2010.
3. IPP development using fossil fuel, extraction of which is **labour dependent**,
  - **Creates thousands of Decent and Sustainable Jobs.**
  - **SA needs jobs and needs job creation**, fossil fuel IPPs will deliver this.
4. Facilitates labour absorbing **Growth** and creates **Sustainable Livelihoods**, fossil fuel IPPs can deliver this.
  - **Eradicate Poverty, Hunger, Unemployment and Disease.**
5. South Africa **needs rural development**, fossil fuel IPPs can deliver this.



## Why fossil fuel FBC gets a clean bill of health

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- Formation of NO<sub>x</sub> occurs in large quantities only at temperatures > 1500°C: FBC boilers combust the coal at 800-900°C, therefore **almost zero NO<sub>x</sub> formation**.
- The **FBC chamber is an ideal environment for sorbents** like limestone to **absorb all SO<sub>x</sub> emissions**.
- Additionally, can use coals with extremely low sulphur contents, not needing limestone sorbent , e.g. **Eastern Cape Coalfields with 0.2% sulphur in the coal** results in no SO<sub>x</sub>.
- With Electro Static Precipitators (ESP) or Bag Filter Houses, reduce **particulate emissions to below 70ppm**.
- **No SO<sub>x</sub>, no NO<sub>x</sub>, practically no emissions**, yet +90% availability and at half the price of current IRP 2010 new generation installations.



## Why coal-fired IPPs will facilitate Rural Development?

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1. Rural areas contain the majority of mineral resources, especially coal.
2. **Mining is naturally labour intensive.**
3. **In rural areas, 1 job creates as many as 10, 1 job feeds as many as 10 people.**
  - 1 million tonnes of coal requires up to 700 Direct Jobs
  - 1000MW requires 4 M/tpa which creates some 2800 Direct Jobs
  - **28 000** with a multiplier of 1-10 vs an almost **zero** creation through a renewables programme
4. Facilitates **Agrarian Transformation** and **Food Security.**
  - Non-Farm Rural Economy
5. Create **vibrant, equitable** and **sustainable** rural communities include:
  - a) creation of business opportunities in a range of sectors
  - b) Expands opportunities for **women, youth**, people with **disabilities** and **older persons** who stay in rural areas.



## Provincial government needs to be ENGAGED

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1. **Provincial, DMs and LMs are best positioned** to have direct knowledge of:
  - a) Poverty and hardships experienced in relevant areas;
  - b) Infrastructure availability and requirements;
  - c) Resources available to integrate with provisions of IRP;
  - d) Availability of scarce resources such as water.
  
2. **Provincial government input is critical in considering proposed IPP** sites, scarce resource and mineral utilisation, Rural Development considerations.
  
3. Provinces have Strategic Priorities
  - a) **Speeding up growth and creating decent work and sustainable livelihoods**
  - b) Building social and economic infrastructure
  - c) **Rural development, land, agrarian reform, and food security**
  - d) Building a developmental state, improving the public services, and strengthening democratic institutions
  - e) **Building a cohesive, caring and sustainable communities**



# The Eastern Cape Coalfields – an existing Case Study

- Region receives no mention in IRP considerations but **can deliver Rural Development and Regional Integration** through a coal-fired IPP.
- An **abundance of coal** - proven resources **over 150 million tonnes**, estimated well over 1 billion tonnes.
- All of the **coal is suitable for combustion in clean coal FBC boilers**.
- **Abundance of dams** in and around coalfields, circa 450 million m<sup>3</sup> of water, > 75% full.
- **Considerable power lost in transmission to coastal cities** (circa 10-21%).
- Coalfields could currently support 1000-3000MW of IPP power generation;
  - To create **TENS OF THOUSANDS** of jobs.
- The Eastern Cape Coal Development Corridor, ticks all the ff boxes;
 

● <b>Finance</b>	-	<b>10-21% Losses</b>
● Environmental	-	no NOx, no Sox & Clean Coal Technology
● <b>Social</b>	-	<b>Decent Work Creation</b>
● Economic	-	Rural Development, Mining value chain
● <b>Political</b>	-	<b>NGP, CRDF, IRP Planning Assumptions disconnects with Modelling</b>



## Where to from here?

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1. Consider the **national imperatives** of the country.
  - a) Employment Creation – NGP plans for 5 million jobs by 2020
  - b) Labour Absorbing Growth – Mining and Mining value chain
  - c) Competition vs Cooperation – A Social Compact
2. **Contribution of IPPs to IRP through FBC technology must be reconsidered**
3. **Leveraging of IRP to stimulate rural development** must be highlighted.
4. **Consider “Perfect” sites** which offer major social, economic and environmental advantages.
5. A specific **checklist** to be drawn for every potential IPP project to ensure that it will meet strategic national imperatives for this country.



# Q; Why no coal-fired IPP until 2027?

# A; We Need a coal-fired IPP NOW!

- For more information please visit us at:
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