



Integrated Resource Plan for Electricity

Energy Water Nexus Analysis workshop 29-30 April 2015

IRP 2010 Consultation process and policy considerations



First round of consultation process (30 days for comments, hearings in Jun)

Before second round of consultation process (October 2010)

Second round of consultation process (90 days for comments, hearings in Nov, Dec)

After consultation process (February 2011)

Parameters

- Inputs on demand-side (forecasts, energy efficiency)
- Inputs on supply side (generation options, committed programmes)
- Economic variables

Scenarios tested

- "Base Case"
- "Emission Limit"
- "Carbon Tax"
- "Regional Development"
- "Enhanced DSM"
- → Emission Limit 2.0 to be pursued further

Multi-criteria decision making

Revised
Balanced
Scenario (RBS)

Main changes

- Increased nuclear costs by 40%
- Included learning rates (mainly affects PV, CSP, wind)
- Disaggregated solar technologies

Scenarios tested

- "Adjusted Emission" (based on Emission Limit 2.0)
- "High Efficiency"
- "Low Growth"
- "Risk Averse"
- "Peak Oil"
- "Earlier Coal"

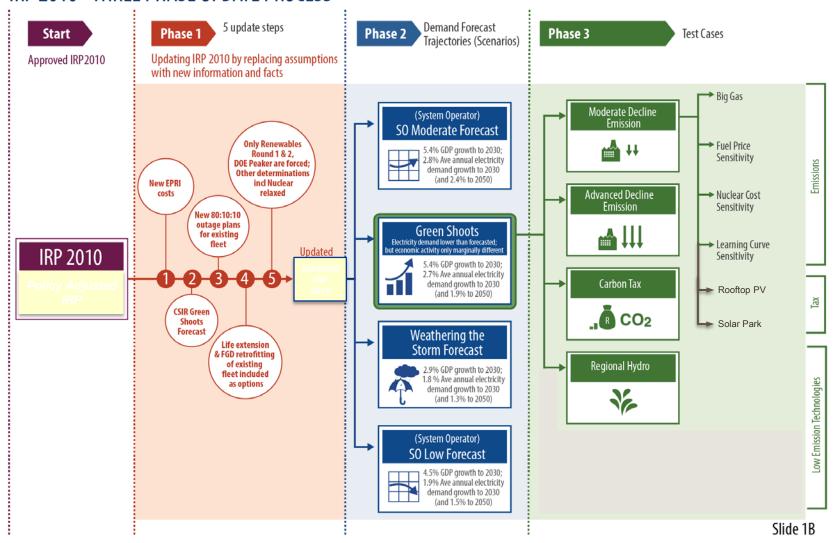
Policy choices

Policy-Adjusted IRP

The Update process

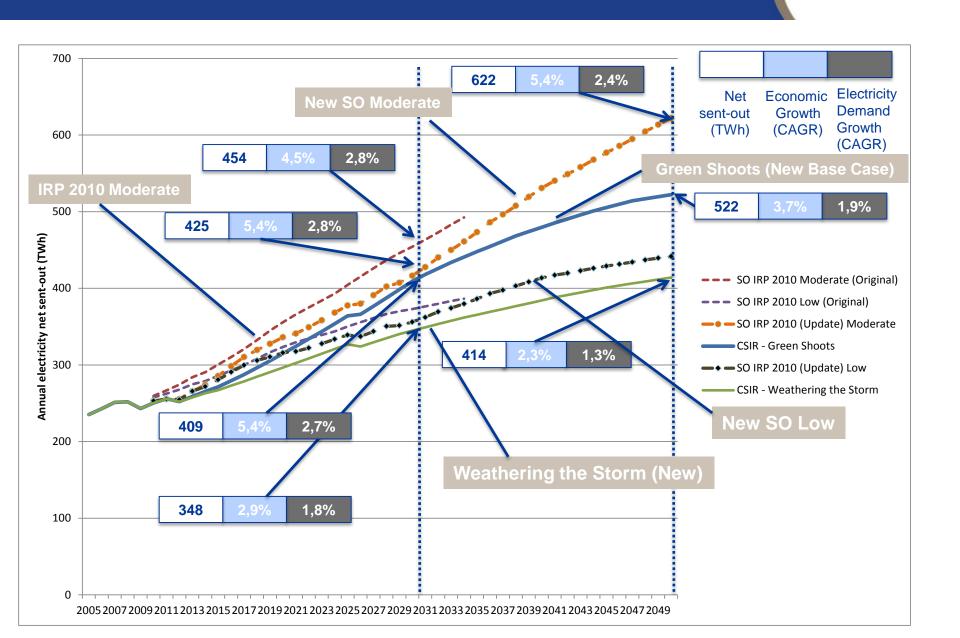


IRP 2010 - THREE PHASE UPDATE PROCESS



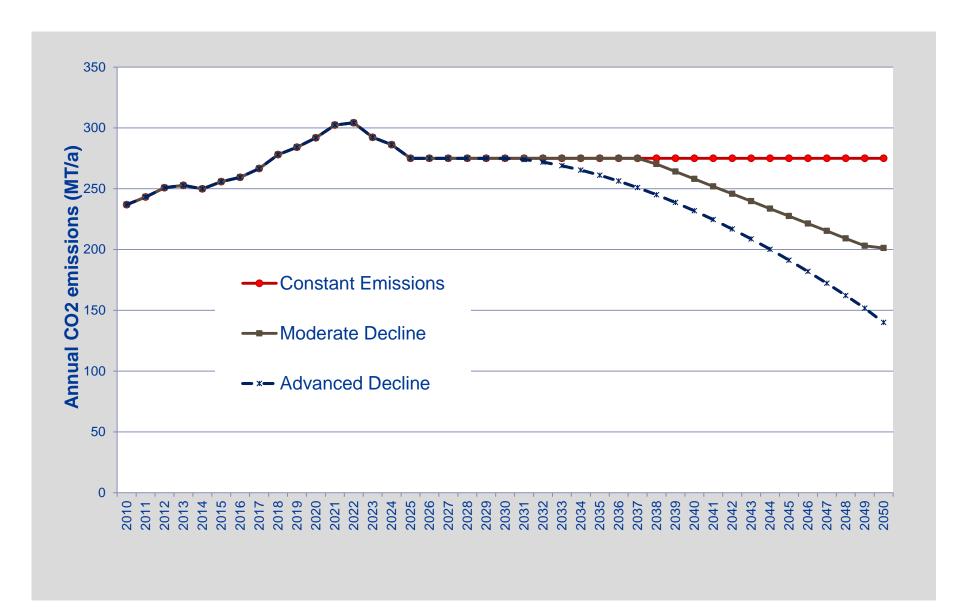
IRP Update Demand Projections





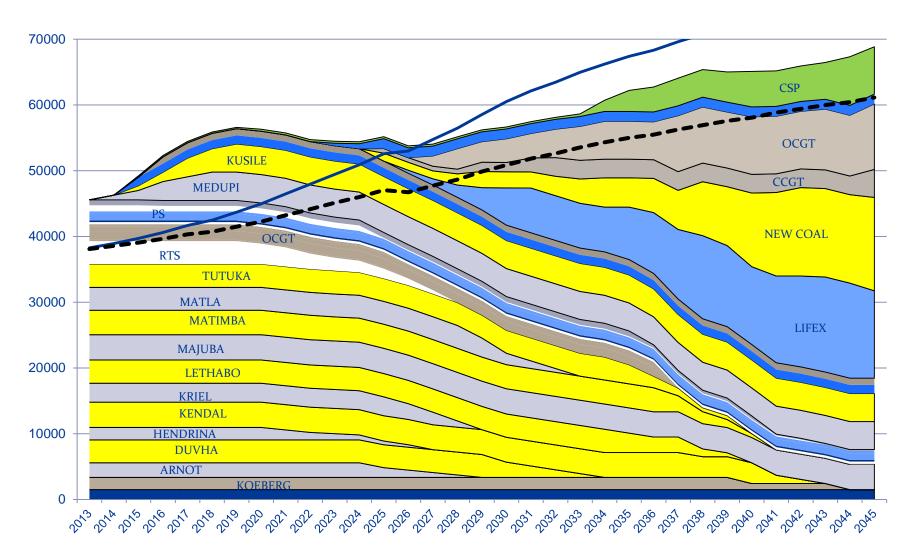
Constraints: Carbon mitigation





Capacity (Weathering the Storm)

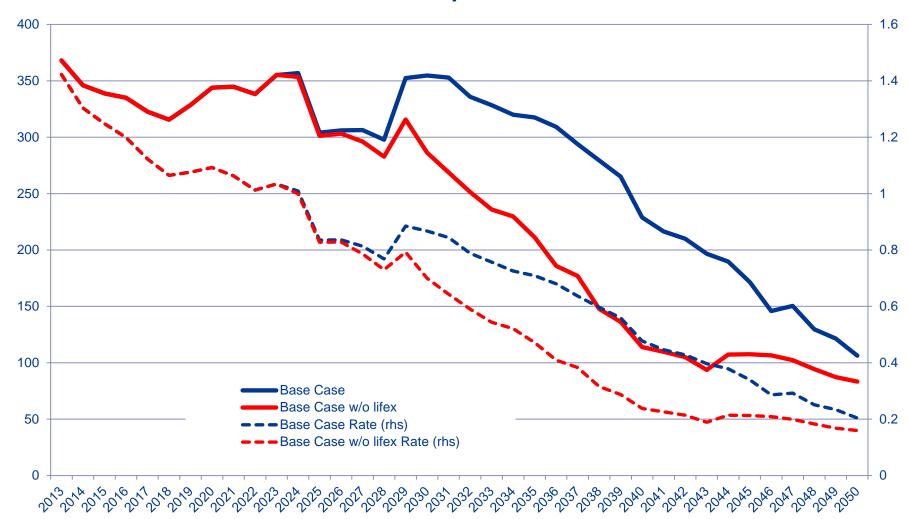




Water in the IRP



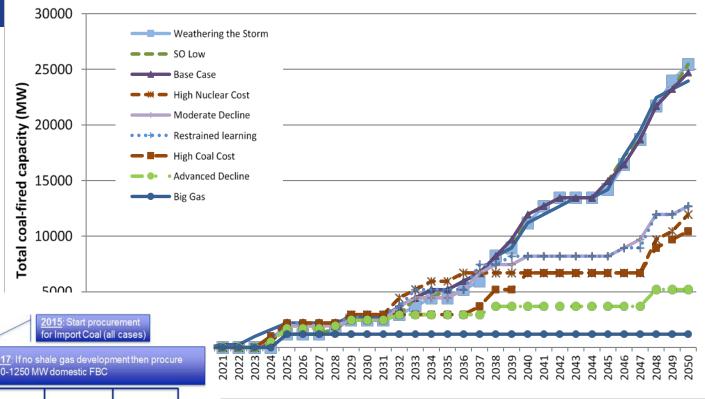
Water consumption and rates

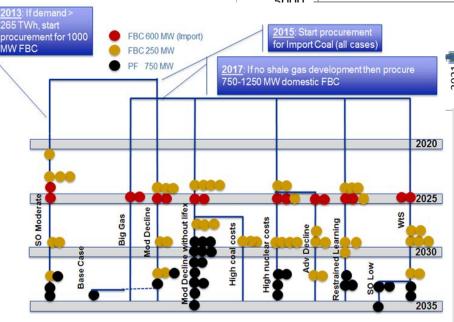


Total new coal-fired generation under each scenario



- Procurement for fluidised bed combustion coal generators should be launched for a total of 1000-1500 MW capacity
- This is the preferable implementation of the "Coal 3" programme.





- Additionally regional coal options are attractive due to the emissions not accruing to South Africa
- Where this is priced competitive with South African options it should be preferred
- Additional analysis on extending the life of Eskom's existing fleet should be undertaken to firm up on costs involved and the environmental impacts