

IRP INPUT PARAMETERS

O1: Base Scenarios - IRP 2010 Input Parameter

Parameter	Base Scenarios
Parameter Value	<p>The proposed scenarios are:</p> <ul style="list-style-type: none"> i) Base Case <ul style="list-style-type: none"> - Least direct cost - No learning curves - Eskom build programme, DSM programme and IPP programmes as committed capacity - No externalities or climate change targets - Limited regional development options <p>The Base Case will include a number of sensitivities, amongst them:</p> <ul style="list-style-type: none"> o Delays in Eskom programme: Delay of 12 months for Medupi and 24 months for Kusile o "No Kusile" Case: Exclusion of Kusile from the committed capacity ii) Emissions Limit 1 <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Inclusion of learning curves o Annual limit imposed on CO₂ emissions from electricity industry of 275MT CO₂-eq iii) Emissions Limit 2 <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Inclusion of learning curves o Annual limit imposed on CO₂ emissions from electricity industry of 275MT CO₂-eq, imposed only from 2025 iv) Emissions Limit 3 <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Inclusion of learning curves o Annual limit imposed on CO₂ emissions from electricity industry: <ul style="list-style-type: none"> ▪ 220MT CO₂-eq, imposed from 2020 ▪ 210MT CO₂-eq, imposed from 2025 v) Carbon tax <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Inclusion of learning curves o Imposing carbon tax as per LTMS values (escalated to 2010 ZAR) vi) Regional Development <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Inclusion of additional regional projects as options vii) Enhanced DSM <ul style="list-style-type: none"> - As with Base Case except for: <ul style="list-style-type: none"> o Additional DSM committed to extent of 6TWh energy equivalent in 2015 viii) Policy-adjusted IRP <ul style="list-style-type: none"> - The policy-adjusted IRP will be determined once the criteria have been applied to the above scenarios and a preferred scenario selected. The preferred scenario will then be modified based on the discussion informed by all the scenarios.
Rationale	

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Responses to Public Inputs	Summary of specific comments	Response
	A least cost-plan should include least cost DSM and EE options compared on an equal basis with supply options (not as a separate 'risk adjusted' afterthought) (90x2030, CJN!-WC)	Noted. This was the preferred methodology, but in the absence of appropriate costing the DSM and EE programmes the existing Eskom programme was included in the base case, with a scenario to test the benefits of additional DSM over and above the Eskom programme.
	Note that the R100/tCO ₂ figure quoted in the Carbon Tax section is incorrect, this was a 2003 figure and should be escalated to 2010 (90x2030, CJN!-WC)	Noted. This has been done for the carbon tax scenario.
	The main externalities, positive and negative, should be included in all the scenarios because they are unavoidable and a fact of life (90x2030, CJN!-WC, Coega Development Corporation, Private-WB, Windlab Developments SA)	Noted. There is little information on the monetisation of these externalities, but the criteria will attempt to either monetise the externalities or include the risks in the risk analysis and economic benefits under the economic assessment.
	It is suggested to add a max renewable scenario as a seventh scenario. (ACMP)	Noted. The expectation is that the emissions target scenarios will provide this analysis.
	Due consideration should be given to developing a more detailed set of criteria to guide what developers need to focus on in terms of a regional project being potentially acceptable to South Africa as an import option under a long-term PPA. (CIC)	Noted.
	Coega CCGT is not included (Coega Development Corporation)	All future generation requirements will be met by generic options based on costs and other issues covered by the scenarios and criteria (except for regional projects which are not generic). If a CCGT is a preferred option to meet future demand it will be included as generic capacity in the IRP
	The validity of any so-called least cost base scenario should be tested rigorously. Levelised costs of the different generation types should be subject to different funding models and low discount rates. Proper allowances for decommissioning should be put in place and accounted for. These are not externalities, but quantifiable future costs. (CSP Developers)	Noted. Discount rates are not being differentiated by technology – as indicated in S3. Decommissioning costs are not being included – over long project life these costs are discounted to a trivial value regardless.
	The cost impacts of conducting the same base scenario in say 5 years time should be considered, to take into account the decreasing costs associated with renewables as technologies improve, and economies of scale kick in properly. (CSP Developers)	Maturity or learning curves will be developed for the scenarios, although the base case excludes these.
	It does not look like renewable energy and diversity of energy resources is going to be included because this is not specifically mentioned in the scenarios or impact on IRP (Kuhumelela)	See above scenario descriptions.
	Further clean energy must be emphasized in the IRP2010, the technology is available to supply all our energy requirements, and we owe it to the future generations of our country and the world. (Mbani Wesizwe)	Noted.
	Given the international debate around financing the Medupi and Kusile coal-fired power stations and the timing of rollout of Kusile, it should not be assumed under the base case scenario and sensitivities should be modelled covering the delay or cancellation of Kusile. (SAWEA)	Noted. A test case for this has been included.
	In order to fully meet government's energy policy objectives, further research needs to be conducted in order to understand the costs and benefits of a large-scale wind programme during the period from 2010-2030	Noted.