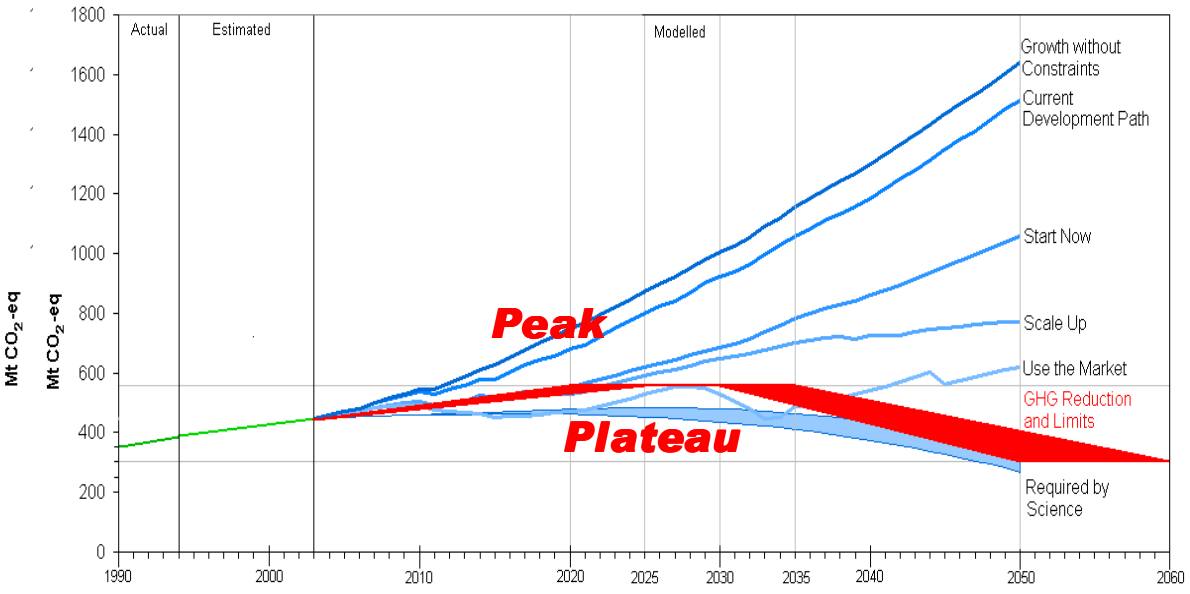
Ex1: Climate Change - IRP 2010 Input Parameter

Parameter	**Climate Change**
Parameter Value	For the base case, there is no allowance for climate change mitigation. Three scenarios will be run which provide mitigation targets for the IRP. The first scenario will attempt to limit the green house gas emissions to 275 $MtCO_2$ throughout the IRP period (based on the LTMS peak of 550 $MtCO_2$ in 2025, and assuming that the electricity sector is approximately 50% of South Africa's emissions). The second scenario will only limit the emissions after 2025 to the 275 $MtCO_2$, allowing emissions to exceed the cap beforehand and using decommissioning to bring the emissions below the limit. The third scenario will provide stricter targets of 220MT (in 2020-2024) and 210 MT (applicable in 2025 and thereafter).
Rationale	**Theme 1: GHG emission reductions and limits (Cont.)**  **Figure from DEAT presentation, "Government's Vision, Strategic Direction and Framework for Climate Policy", 29 July 2008** The target of 550MT/a applies for the economy as a whole. The contribution of the electricity sector to this target is assumed to be 50%.

Responses to Public Inputs

Summary of specific comments	Response
LTMS indicates what is required by science for emissions – translating to a peak of 235MT/a (90x2030, ELA, Mbani Wesizwe)	The LTMS will be considered in the IRP.
IRP should include cost calculations of co2 emissions saved in modelling of all generation options. Following Kyoto Protocol, nuclear should be excluded from carbon mitigation measures	Scenarios include a carbon tax as well as the impact of emission limits which indicate the shadow price of co2 emissions.

(90x2030, ELA)	
The IRP should meet the Cabinet endorsed LTMS carbon profile, inclusive of the Copenhagen commitments (34% by 2020, 42% by 2025), as a hard constraint rather than a scenario (90x2030, CJN!-WC)	The IRP is a decision-making process that needs to identify the impacts of policy options and raise these for debate. Enforcing the Copenhagen commitments as a hard constraint removes the opportunity for evaluating alternatives. The scenarios outlined above provide information for discussion purposes.
While the IRP should consider the Copenhagen stance this needs to be balanced against the need to ensure a reliable power supply, at an acceptable cost to the economy and consumers. (CIC)	Noted. The scenarios should provide information to inform this discussion.
The emissions relating to energy produced outside the SA borders (e.g. in Botswana) do not accrue to SA's targets (CIC)	There is some uncertainty regarding the policy stance on emissions outside the borders. For the sake of the IRP it has been suggested that emissions incurred for consumption in SA should count against SA.
Targets can be met (and better), requires an incentive mechanism from DEA-DTI-SARS to ensure compliance. (Coega Development Corporation)	Noted.
In order to meet targets all new build (post Medupi and Kusile) should be renewable energy, primarily dispatchable CSP with storage. (CSP Developers)	The IRP has the targets built in as scenarios with generic cost indicators for CSP with and without storage. The outcomes will be determined on the relative costs of options to meet the targets.
Industry needs to know what target it is chasing. What is the level of CO2 emissions that will be allowed by 2020 and 2025? (Exxaro)	The scenarios will use the different targets identified above. The outcome of the IRP process will provide guidance on the approved target by government.
Nuclear electricity generation is the only viable base load option to combat climate change through reduced CO2 emissions (NECSA)	The IRP has the targets built in as scenarios with generic cost indicators for nuclear. The outcomes will be determined on the relative costs of options to meet the targets.
Do not agree that energy efficiency initiatives will decrease emissions – maintaining 2007 generation levels may slow the need for new generation capacity, but there is no overall decrease in generation. This is not in line with Copenhagen announcements. (Private-WB)	Noted.
Long lifespan of power stations (and similar industrial facilities) will cause problems when absolute reductions in GHG emissions required post 2040. Possibility of early closure of these plant need to be considered (SASOL)	Noted. The IRP will consider the impact of the targets on existing and new capacity.
Given government commitments there is limited carbon space (post Medupi and Kusile) for SA to grow between now and 2020. IRP needs to prioritise low carbon and carbon free baseload generation (SASOL)	Noted.
Three uncertainties regarding climate change for SA: 1) What will science eventually require? Science around climate change evolving and deeper cuts may be required than previously expected 2) What will the international community expect of SA? 3) Will other countries comply, leaving others to do more? IRP must align with LTMS, and yield to LTMS in cases of conflict. LTMS should be in the base case – climate change cannot be finessed. A safety margin needs to be included to deal with uncertainties listed above – agreement must be reached on what an acceptable safety margin is – with LTMS as a minimum (SAWEA)	Noted. The LTMS will be considered in the IRP.
Renewable energy reduces carbon emissions – resulting in avoided costs to the SA economy in terms of international obligations and domestic social and economic impacts from emissions. (Windlab Developments SA)	Noted.