Cogeneration - IRP 2010 Input Parameter information sheet (Supply input)

This sheet is to be used as the primary stakeholder engagement tool. This document provides the information that will allow the stakeholders to make a meaningful contribution to the IRP Input parameters

Parameter	Cogeneration
Purpose	Industrial cogeneration is a low cost and energy efficient supply side option that normally connects behind the customer's meters onto the grid, and therefore can be off the radar screen of the IRP. The purpose of this parameter is to ensure that the aggregated effect of investment in cogeneration is taken into account for planning purposes, and that it is treated as a supply side option, even though the net effect of investment in cogeneration will manifest from a System Operator perspective as a reduction in demand.
Impact on the IRP	Cogeneration differs from conventional generation in that it is coupled to the industrial process of the host plant, and therefore non-dispatchable by the System Operator. Types of cogeneration: • **Waste Heat Recovery Systems:** Projects utilizing process energy which would otherwise be underutilized or wasted, such as waste heat or waste flue gas from industrial processes • **Combined Heat and Power Systems:** Projects where in addition to electricity the project produces consumable heat such as process steam **Benefits of cogeneration:**

	Investment in industrial cogeneration in South Africa will, in addition to benefits associated with distributed generation, also deliver energy efficiency, environmental and social benefits. More specifically: • Energy efficiency gains through improvements in fuel conversion efficiency and the use of waste resources such as waste heat or waste gas • Reductions in GHG emissions, as conversion of waste resources or better fuel conversion allows for the backing out of electricity imports without additional emissions from the industrial host • Provision of effective additions to the electricity generation base and diversification of resources • Transmission and distribution benefits from distributed generation at the point of consumption • Opportunities for creating employment and BEE in the industrial sector While the SO has no control over cogeneration and only sees the net effect of host plant consumption minus cogeneration, the IRP process has to keep track of cogeneration investments and models it as a supply side option. For practical reasons cogeneration is aggregated in the modeling and assumptions on availabilities are made.
Parameter Value	Cogeneration that can be brought into production within 3 years after financial close in South Africa is estimated at 1150 MW, from more than 10 industrial power users.
Range of Parameter Value	It is estimated, that up to 2000MW of cogenerating potential can be realized in South Africa over the period 2012 to 2020.

Preconditions necessary to make possible for this parameter to be included in the IRP	Cogeneration is not seen as a separate generation technology category, but will form part of the non-utility generation portfolios in the IRP. Since investment in cogeneration will not increase emissions it is from an environmental perspective preferable to fossil fuel fired options. The allocation for non-utility generation in the IRP should be sufficient to allow for the development of all cogeneration potential. Cogeneration feed-in tariffs (COFIT), to be promulgated by NERSA, is not a precondition for inclusion in the IRP, but is expected to improve the uptake significantly.
Parameter Owner	DOE