



## **Demand side management - IRP 2010 Input Parameter information sheet (Demand 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

<b>Parameter</b>	<b>Demand side management (DSM)</b>
<b>Purpose</b>	<p>The load profile in South Africa is characterized by an evening peak, when consumers get back from the office, school etc. and start cooking, watching television etc., and to a lesser extent by a morning peak, when electricity users get ready for their daily activities by bathing, making tea etc., The peaks last for a relatively short period (2 to 3 hours)</p> <p>There are two approaches for managing demand:</p> <ol style="list-style-type: none"><li>1 Load shifting. Large base load plant cannot be economically stopped and started in response to system peaks which have to be satisfied either by expensive peaking plant or Demand Side Management to smooth the peaks into the off peak periods. These DSM activities are managed on a “project funded basis” in preference to funding more expensive peaking plant - the more expensive way to satisfy system peak load requirements.</li><li>2 Accelerated Energy Efficiency Historically the cost of specific and focused energy efficiency incentives was significantly cheaper than refurbishing and operating return to service stations hence the DSM program has extended beyond shifting load to decreasing the overall load profile as an alternate to building/refurbishing power stations. This too has been done on a DSM project funded basis for specific focused high impact projects i.e. the municipal high efficiency street lighting programme and the Compact</li></ol>



	Fluorescent Lamp (CFL) change out programme.
Impact on the IRP	Reduced supply side expenses (generation growth) can be achieved through focused DSM initiatives, by shifting the demand peaks and reducing the overall demand profile. As an example, a DSM initiative to switch off all electric geysers in peak periods will reduce the need to build peaking plant, but not base load plant as the overall energy demand will remain the same, whereas to replace the electric geyser with a solar geyser will reduce base load demand as well as peak load demand if the solar /electric geyser is correctly configured.
Assumptions included in establishing the parameter values in this sheet	
Parameter Value	<p>Two DSM values need to be used for purposes of the IRP:</p> <ul style="list-style-type: none"><li>• Peak load shifting DSM project costs:<ul style="list-style-type: none"><li>○ These are DSM projects which relate to the cost premium of peak load plant relative to base load plant</li></ul></li><li>• DSM based energy efficiency projects:<ul style="list-style-type: none"><li>○ These relate to focused projects providing more financial return than base load generation.</li></ul></li></ul> <p>Note that the total cost of DSM project including administration, measurement and verification and cost of capital need to be included in these parameters</p>
Range of Parameter Value	<p>The load shifting funded DSM parameter is directly related to the life cycle cost of new peaking plant less the life cycle cost of new base load plant.</p> <p>The energy efficiency funded DSM project cost is related to the life cycle cost of new build generation</p>
Preconditions necessary to make	



energy

Department:  
Energy  
REPUBLIC OF SOUTH AFRICA

possible for this parameter to be included in the IRP	
Parameter Owner	Department of Energy