

Exploring barriers and benefits of demand side management measures: utility, environment, energy system, and consumers

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Abstract: During the past decade, South Africa as a whole has been experiencing a serious electricity supply crisis. Consequently, the electricity utility has been dealing with a rapid diminishing reserve margin throughout the load profile. Due to the surplus capacity under which the utility operated during the past decades has been mainly exhausted and it is expected that the utility's power system stays restricted whilst new capacity is being built. In addition, the South African national power grid is operating under strain. The reason of the current power shortage is due to insufficient generation capacity as well as a high increase demand for electricity from consumers. In order to mitigate this crisis, the state owned electricity utility Eskom introduced Demand Side Management (DSM) measures into the electricity market, which have demonstrated their worth in being capable of significantly save energy throughout the national power grid. Despite this, the total implementation of DSM measures countrywide still a major concern especially in rural area. In light of this, the present paper aimed at exploring the challenges and benefits regarding the implementation of DSM initiatives. The paper focused more on challenges and benefits to energy system, utility, environment, and end-users.