

The Republic of South Africa
Department of Mineral Resources and Energy

REQUEST FOR INFORMATION
IN RESPECT OF THE DESIGN OF A
MEDIUM TERM POWER PROCUREMENT PROGRAMME 2019

CLARIFICATION RESPONSE 2 – ESKOM POWER GENERATION REQUIREMENTS

21 January 2020



Energy
Mineral Resources

1. Introduction

- 1.1. This Clarification Response (Number 2) is issued in terms of paragraph 7 of the Department of Mineral Resources and Energy's ("the Department") Request for Information in respect of the Design of Medium Term Power Purchase Programme issued on 13 December 2019 (the "RFI") and is subject to all the terms and conditions contained therein.
- 1.2. Unless otherwise expressly stated, or the context otherwise requires, words and expressions defined in the RFI shall bear the same meanings in this Clarification Response as ascribed to them in the RFI.

2. Purpose of the Clarification Response

- 2.1. This Clarification Response 2 seeks to provide clarity to Respondents on the following:
 - 2.1.1. the current high-level Eskom Power Generation Requirements in respect of the RFI;
 - 2.1.2. the different categories of Demand Side Management options as set out in Section C of Form 1.
- 2.2. Eskom has identified that there is a power generation gap of 4000MW in the short to medium term. Eskom proposes that 2000MW be supplied from dispatchable power generation plants and 2000MW be supplied from self-dispatch power generation plants.
- 2.3. The 2000MW of the dispatchable power generation capacity would need to meet the following requirements of the power system:
 - 2.3.1. It must be dispatchable from 05:00 until 21:30 and flexible to provide load following and "gap filling";

- 2.3.2. The plant must be flexible over time to be ramped up and down as circumstances change. The plant must be able to come online within a short period of time i.e. short ramp up and short ramp down rates;
 - 2.3.3. A portion of the power plant must be able to provide ancillary services such as reserves, specifically primary frequency control as well as providing automatic generation capacity (AGC);
 - 2.3.4. It must be cost effective in order to reduce usage of the emergency power generation; and
 - 2.3.5. Such new power plant should meet all environmental standards including the minimum emissions standards and comply with the South African Grid Code.
- 2.4. The 2000MW of self-dispatch power generation capacity would be allocated as follows:
- 2.4.1. 1000MW generation between 08h00 to 16h00.
 - 2.4.2. 1000MW–The power generation facilities are required to be installed in areas where the generation patterns predominately coincide with the morning peak of the power system between 05h00 to 08h00 and evening peak of the power system between 16h00 to 21h30.
 - 2.4.3. Furthermore, such power generation facilities would be required to provide voltage control in line with the requirements of the grid code.
- 2.5. In responding to **Section C: Demand Side Management (DSM)** of Form 1, the following are the categories and definitions of the different DSM options and Projects:
- 2.5.1. Category of DSM:
 - 2.5.1.1. Load Management: the process of balancing the supply of electricity on the network with the electrical load by adjusting or controlling the load rather than the power station output; or

2.5.1.2. Peak Clipping: the reduction of utility loads during peak demand periods. This can delay the need for additional generation capacity. The net effect is a reduction in both peak demand and total energy consumption. Peak clipping can be achieved by direct control of customers' appliances; or

2.5.1.3. Energy Efficiency: the goal to reduce the amount of energy required to provide products and services.

2.5.2. Technology details proposed:

2.5.2.1. Lighting systems: is an intelligent network based lighting control solution that incorporates communication between various system inputs and outputs related to lighting control with the use of one or more central computing devices.;

2.5.2.2. Appliance automation: is an intelligent control solution that incorporates communication between various system inputs and outputs of a specific appliance or specific group of appliances;

2.5.2.3. Automated integrated systems; also called process automation is an intelligent network based process control solution that incorporates communication between various system inputs and outputs related to process control with the use of one or more central computing devices; and

2.5.2.4. Heating, Ventilation and Air Conditioning (HVAC) system: Technology of indoor and vehicular environmental comfort. Its goal is to provide thermal comfort and acceptable indoor air quality.

2.5.3. Target Market that would be part of DSM project:

2.5.3.1. Residential users: customer who takes supply in a residential dwelling;

- 2.5.3.2. Industrial users: consumers that use electricity in the production of other products. Such industries include agriculture, manufacturing, construction, transportation, and communication, among others;
- 2.5.3.3. Commercial users: a customer that is a business, not-for-profit organization, or other institution that provides goods or services and that takes service for non-residential purposes; or
- 2.5.3.4. Mixed Use demand users: a group of different customers that are a combination of Residential, Commercial or Industrial users.

2.6. Respondents are to take onto account the above in responding to the RFI.

3. Deadline for Submission of Queries

- 3.1. The deadline for submission of queries to the RFI and any Clarification Response is 22 January 2020.
- 3.2. The Department may in its sole discretion consider queries received after 22 January 2020 and may in its sole discretion respond to such queries.