

BACKGROUND

Eskom has been experiencing challenges in balancing the supply and demand of electricity. Various interventions have been put in place on both the supply and demand side to address these challenges.

On the supply side, every effort is being made to reduce plant breakdowns (unplanned maintenance) on Eskom's generation fleet to allow for planned maintenance. Furthermore, the effective management of diesel and water resources to run the peaking generation stations is being undertaken to ensure loadshedding can be negated.

The system operator (SO) is responsible for the reliability and security of the South African national electricity grid by monitoring, controlling and operating it in a safe, economical and reliable manner.

The Demand Response Programme provides the SO with flexibility and reliability to maintain adequate daily operating reserve margins to cater for unforeseen circumstances that could affect the stability of the supply.

Factors that could affect the stability of the electricity supply include:

- System constraints caused by severe weather and/or power line issues
- Generator malfunctions (unexpected trips – loss of multiple GX units)

Demand response (DR) is catered for in the daily operating reserves of the SO (even during times of surplus capacity) as part of normal system operations, and is dispatched only when needed, similar to other modern utilities around the world.

The SO is able to manage daily system challenges through the current **Supplemental DR (SDR) Programme**. The SO can call on current participating load providers to reduce load when required. Load providers have relatively short notification times, and the load reduced can be sustained for several hours per event.

Eskom is piloting a national Demand Response Programme in the small commercial and residential sector in response to the electricity crisis facing South Africa at present. This programme is an expansion of the successful industrial SDR Programme, which has been operational for over 10 years.

The objective of the pilot is to test, among others, the appropriateness of technologies, market uptake, and the implementation and participation in this sector. The pilot will enable Eskom to evaluate projects on an ongoing basis up to a threshold of 50 MW.

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Aggregated load providers (ALPs) could play a fundamental role in tapping into the end-consumer market via the pilot by creating customised, automated controls for consumer loads and appliances that enable remote access, while taking preferences and behavioural patterns into consideration.

An ALP could be referred to as an Eskom customer, a non-Eskom customer, a municipality or metro, a project developer or service provider, an energy services company (ESCO) or any other entity that is able to aggregate, control and measure electrical load from multiple sources, and provide this bulk load to the SO to be dispatched.

An ALP needs to be the facilitator of the load to be controlled, measured and dispatched.

PILOT OBJECTIVES

The following aspects, among others, will be tested, tracked and reported:

	Test objective	Suggested reporting output
1.	Test appropriateness of technologies	Report which technologies provided the best response.
2.	Test the market uptake	Report the uptake per sector, the number of projects per sector and the associated savings delivered.
3.	Implementation challenges or glitches	Note and report all implementation challenges and glitches, including recommended or successful mitigation strategies.
4.	Participation challenges	Note and report all challenges reported or raised by participants, including recommendations and successful mitigation strategies.
5.	Test constitution of participants of aggregators	Note and report who participates, i.e. end users, ESCOs, municipalities, Eskom, non-Eskom customers, etc. Note and report any noted impact on the size and activity.
6.	Test administration resource , business support requirements and required timelines	Note and report resource requirements for the processing of submissions and administering the programme.
7.	Appropriate measurement and verification (M&V) methodology	Recommendation on the appropriate M&V methodology to be applied.

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CRITERIA

Sector	Commercial or residential
Qualifying criteria	Minimum 1 MW up to 5 MW per submission – aggregated
Contracting mechanism	Legal contract with ALP
Contract duration	Up to three years' fixed contract (performance based)
Metering	ALP needs to provide 30-minute interval metering
Bidding	ALP to submit day-ahead bid at 09:00
Scheduling	Submitted a day ahead at 15:00
Dispatching	On the day via Eskom's demand response aggregator system. This is done by telephone (robocall) and email confirmation to the ALP.
Measurement and verification (M&V)	Independent
Performance measurement	Via Eskom's demand response aggregator system
Settlements	At month end via Eskom's demand response aggregator system
Invoicing	ALP provides Eskom with a valid tax invoice
Payment mechanism	Vendor registration required for payment purposes
Energy rate	R2 500/MWh
Contracting hours per annum	Up to 500 hours
Event duration	Minimum of one hour per event
Events per day	Up to two events per day
Typical dispatch time	System morning or evening peak (summer and winter)
Typical dispatch days	Weekdays
Dispatch notification	Minimum 30 minutes
Load curtailment protection	Not applicable (networks cannot be isolated at a granular level)

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GENERAL RULES

1. Eskom publishes the Demand Response Pilot Programme, including rules and criteria for the programme and/or written media, and invites ALPs to submit proposals. The ALP will need to submit a signed proposal to Eskom.
2. All proposals received will be handled on a first-come, first-serve basis.
3. Only one ALP is allowed to submit a proposal per facility to avoid double counting.
4. ALPs will be allowed to register as an Eskom vendor following the approval of the submission. Upon successful vendor registration, the ALP will be eligible to contract with Eskom.
5. Eskom may accept or reject any variation or deviation, and may cancel the pilot and reject all proposals at any time prior to the formation of a contract. Eskom or the Eskom representative will not accept or incur any liability for such cancellation and rejection, but will give written reasons for the action upon written request to do so. Eskom reserves the right to accept the whole of any part of the proposal.
6. Eskom will not compensate the ALP for any costs incurred in the preparation and submission of a proposal or negotiation of any contract, including the cost of any testing necessary to demonstrate that aspects of the proposal satisfy the evaluation criteria.
7. To be considered for participation in the pilot programme, all ALPs shall undertake to comply with the prevailing Occupational Health and Safety Act, Act 85 of 1993 requirements, the Mining Health and Safety Act, Act 29 of 1996 requirements as well as any other applicable safety, health or environmental laws and requirements of that jurisdiction.
8. The ALP that Eskom contracts with is the brand that the ALP must use to market the programme to end users. If Eskom's name is mentioned in media liaison initiatives, Eskom must be consulted, and Eskom must approve the article.
9. The ALP indemnifies Eskom against claims, proceedings, compensation and costs payable arising from an infringement by the ALP of the rights of others or its confidentiality obligations in terms of this pilot programme.
10. Eskom's liability to the ALP for the ALPs indirect or consequential loss is limited to R0.00 (zero rand)

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