

MEDIA STATEMENT

Eskom to study electric vehicles' impact on the grid

Wednesday, 29 May 2013: Eskom has commenced a research project to study the charging requirements and characteristics of electric vehicles in order to prepare for their entry in the South African market and for the effect they may have on the national grid.

Eskom took delivery of 10 Nissan Leaf all-electric cars yesterday to study their charging requirements and characteristics over a period of three years. The study will focus on elements such as electricity use per kilometre, commuting costs and vehicle range.

Electric vehicles are increasingly being produced by car makers and appear to be gaining popularity globally as a more environment-friendly and fuel-cost efficient alternative, and Eskom wants to make sure it is strategically placed to manage their uptake in the market.

“We support the principle of electric cars, in line with Eskom’s aim of finding and enabling technology solutions for a cleaner future,” said Dr. Steve Lennon, Eskom Group Executive for Sustainability.

Eskom has several clear research goals to achieve over the next three years:

- Understanding the energy required to charge the electric vehicles and the charging characteristics
- To identify customer usage patterns that will determine how the vehicles are used and when they are charged
- Exploring the use of the electric car as a demand management device through remote control of charge and discharge cycles
- To decide on the possibility of electric vehicle tariffs that could be incorporated in future schemes
- To examine whether electric cars have a future in the fleet requirements of Eskom
- To research customer perceptions, infrastructure requirements and the carbon value chain.

Eskom will also need to understand what electricity infrastructure is required and how such infrastructure is likely to be used before electric cars become widely-used in South Africa. This is not expected to happen immediately, but Eskom anticipates a gradual increase in adoption of the technology by the public over the next few years.

Charging stations have been installed at Eskom's head office, Megawatt Park, in Sunninghill and at its research facility in Rosherville in Germiston. Several portable charging stations will be moved with the vehicles to enable participants to charge vehicles at home.

Eskom will also explore the possibility of discharging energy from the vehicles' battery into the grid. Future financial compensation for the electric-vehicle owners who discharge into the grid will be considered as part of the studies.

The impact of electric vehicles on Eskom is not to be underestimated. While growth in this area is not expected to be rapid, the 'fast charge' facility of many vehicles, combined with rapidly increasing battery capacities, means distribution networks can be severely overloaded during certain periods of the day especially if this phenomenon is grouped in a particular geographical area.

Electric vehicles are either charged slowly (8 to 12 hours) or fast (less than 30 minutes) and each of these modes has implications for an electricity provider. Also, at the moment, no special tariffs or charging facilities are available in South Africa. It is important for Eskom to evaluate and determine what tariffs would be recommended and how a charging network would be established.



Photo Caption: Eskom Chief Executive Brian Dames in one of the all-electric Nissan Leaf cars.

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NOTES TO THE EDITORS

Nissan Leaf Specifications:

- 80 kW AC synchronous electric motor
- Zero Emissions Vehicle (ZEV) – 0g/km CO₂ mass emission
- Maximum speed 145 km/h
- Acceleration 0-100km/h 11.9 sec
- 3.3 kW on-board charger
- 50kW quick charger
- Max torque 280Nm/min⁻¹
- 24 kWh lithium-ion (Li-ion) battery 360V

Accolades for Nissan LEAF

1. 2011 European Car of the Year
2. 2011 World Car of the Year
3. 2011-2012 Japanese Car of the Year
4. 2011 EV of the year by EV.com
5. 2011 Eco-Friendly car of the year by Cars.com
6. 2010 Green Car Vision Award by Green Car Journal
7. 2010 Breakthrough Award by Popular Mechanics
8. 50 Best inventions of 2009 by Time magazine