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Fact Sheet

SERE WIND FARM

South Africa's Western Cape is blessed with abundant wind energy resources. It is here, on approximately 3 700 hectares within the Matzikama Local Municipality and West Coast District Municipality, that Eskom has developed its first commercial scale wind energy project: the Sere Wind Farm. The Sere Wind Farm is situated on the Atlantic coast, near the towns of Koekenaap, Lutzville and Vredendal.

Background

The Sere wind farm takes its name from the Nama word meaning 'cool breeze'. The project involved the development of a wind farm, with a delivered generating capacity of 100 MW. It comprises of 46 turbines of 2.3 MW each. Full commercial operation of the project was achieved at the end of March 2015. Sere is Eskom's first large-scale renewable energy project and demonstrates the utility's commitment to reducing its carbon footprint and to investing in a sustainable energy future.

Eskom expects that this project will be able to produce 298 000 MWh/year which will be fed into the national grid. The wind farm is connected to the grid through the Skaapvlei substation at a voltage of 132 kV and transmitted to the Juno substation through a new distribution line.

The project which was executed by Eskom's Renewable Energy Business Unit, through which it is hoped that similar projects will be undertaken by the utility, created over 500 direct jobs during its

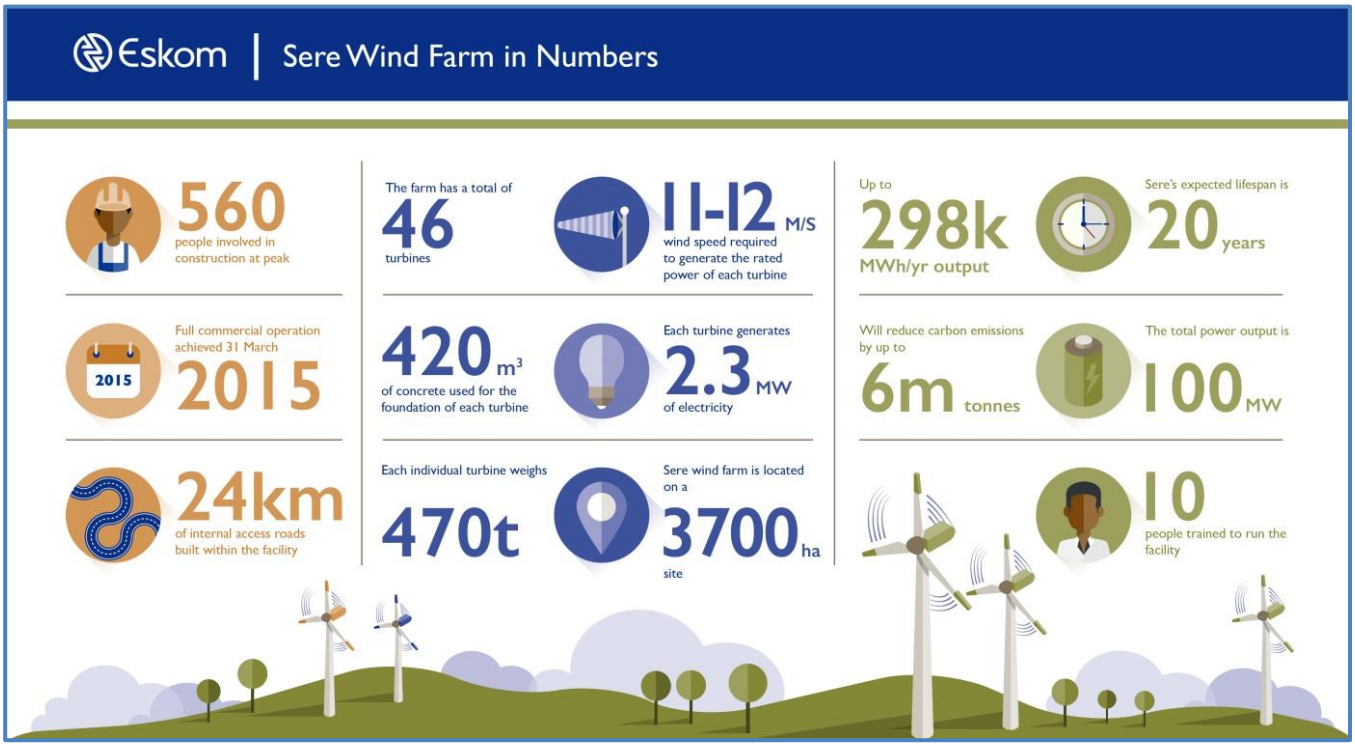
construction and brought significant economic activity to the Matzikama community. Eskom Renewables has trained and employed fulltime skilled technicians from the local community to operate and maintain the facility over its life.

The project is forecast to reduce carbon dioxide emissions by up to 6 million tonnes over the projected 20-year life of the plant. The project's costs compared favourably with the market in terms of both capital and levelised cost of energy. The project was funded by a number of Developing Finance Institutions (DFIs) and formed part of a broader country program whereby funds were accessed through the Clean Technology Fund and supported by the South African Government. The DFIs that collaborated with Eskom on this project were Agence Française de Développement, African Development Bank and the International Bank for Reconstruction and Development (IBRD).

Key contracts and suppliers

The first wind turbine was erected at the Sere project on 2 December 2013. Blades for wind turbines and other components for the project arrived at the Saldanha Bay harbour in October 2013 and were transported to site.

The Sere Wind Farm project was constructed in partnership with the international energy technology conglomerate, Siemens Wind Power A/S. It consists of forty six type SWT-2.3-108 wind turbines, each with a capacity to produce 2.3 megawatts of clean electricity. According to the turnkey contract awarded to Siemens, the company will supply, construct, commission, operate and service the wind farm for a five-year period following completion of its commissioning. Raubex undertook the civil work, and the electric interconnection facilities were constructed by Steffanutti and Powertech.



Wind Energy

Advantages of wind power include:

- Wind is a sustainable resource and, as a primary energy source, is free
- Battery technology currently being developed may in future allow for the energy to be stored for use when required, for example at peak periods
- Wind is a clean form of energy without emissions or waste products
- There are growing numbers of energy users prepared to pay for the more expensive electricity generated from renewable sources.

Disadvantages of wind power include:

- Units are of small capacity (25 to 2 000kW) and it would take hundreds of wind turbines to replace a single thermal unit (currently ranging between 200-600MW)
- Wind resources are erratic and can be used only at certain speeds
- Wind energy is generated when the wind blows within a certain range – which makes it difficult to predict when the wind energy will come onto the power grid. This makes it difficult for Eskom National Control who constantly needs to balance the amount of power on the national grid.
- While it is a clean source of energy, the environmental impacts of wind energy can include noise, visual pollution and negative impacts of birdlife.

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