

Projects May 29 2019

Kangnas Wind Farm

Kangnas wind farm is a 140MW project being developed in the Province of Northern Cape, South Africa.

Project Type

Onshore wind farm

Location

Northern Cape, South Africa

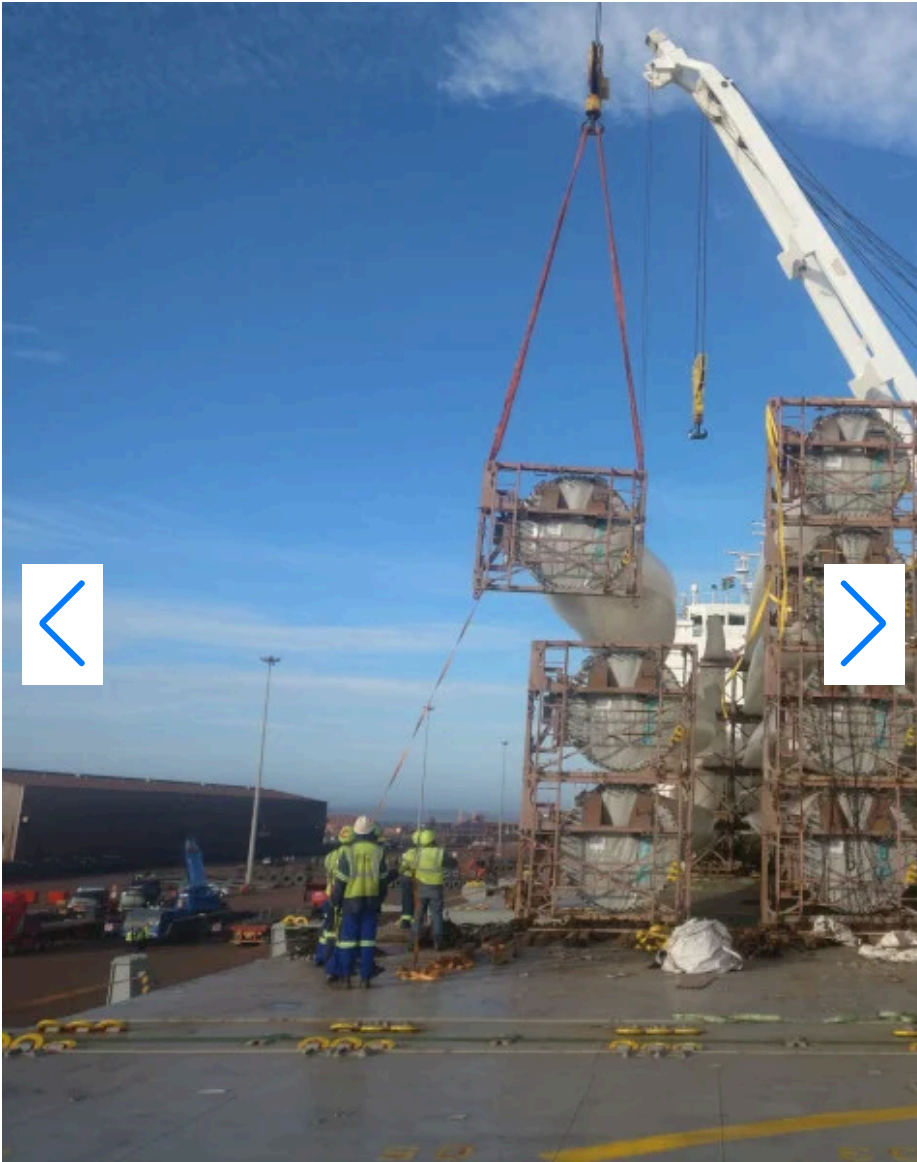
Installed Capacity

140MW

Owners

Mainstream Renewable Power, Actis (Lekela), Old Mutual Life Assurance Company (South Africa), H1 Holdings, AREP, Kangnas Renewable Energy Community Trust

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Kangnas wind farm is a 140MW project being developed in the Province of Northern Cape, South Africa.

The wind farm is owned by a consortium led by Mainstream Renewable Power and including Actis (Lekela), Old Mutual Life Assurance Company (South Africa), H1 Holdings, African Rainbow Energy and Power (AREP), and Kangnas Renewable Energy Community Trust. Mainstream Asset Management South Africa is the project operator.

Kangnas [wind farm](#) is one of the two projects that were awarded preferred bidder status in June 2015, under Round 4 of Renewable Energy Industry Power Producer Procurement Programme (REIPPPP) initiated by the Government of South Africa.

Financial closure of the project was achieved in June 2018, along with that of the Perdekraal East 110MW wind farm. The two wind farms are estimated to require a combined investment of Rand 6.6bn (\$0.52bn).

Construction of the project was commenced in June 2018 and the first turbine foundation was laid in January 2019. The project is expected to begin commercial operations in 2020 and is anticipated to create more than 400 local jobs.

It will generate approximately 563,500MWh of clean renewable energy a year, sufficient to supply for approximately 120,000 homes. It will also be expected to offset approximately 550,000t of carbon emissions a year.

Kangnas wind farm location

Located 52km east of Springbok in the Nama Khoi municipal area of Northern Cape, Kangnas wind farm can be reached via National Highway 7.

Kangnas wind farm make-up

The Kangnas wind farm will be equipped with 61 Siemens Gamesa SWT-2.3-108 turbines, which a capacity of 2.3MW each.

The 168m-tall turbine will feature a three-blade rotor with a diameter of 108m each. Each turbine will be mounted on a 115m-tall tubular steel tower and will

spin at an average rate of 15 rotations per minute (RPM).

The rotor will have a swept area of 9,144m² and a power density of 251.53W/m². It will be connected to a generator, which generates AC power converted at 50Hz- 60Hz by a converter.

Each blade will measure 52.6m-long and will be made up of fiberglass reinforced with epoxy.

Transmission of power generated by the Kangnas wind farm

The electricity generated by the Kangnas wind farm will be transmitted to the Eskom grid via a 12.8km-long 132kV double-circuit overhead transmission line.

The energy generated by the wind turbines will be first evacuated to an on-site substation through a network of medium-voltage array cables. The voltage will be increased at the substation before evacuating the power to the grid connection point.

The project will also include a linking substation (Groeipunt) to step the voltage up from 132kV to 220kV.

Project financing and off-take agreements

Debt financing for the Kangnas wind power project was arranged and led by ABSA Bank.

The power generated by the project will be purchased by Eskom, under a 20-year power purchase agreement. An implementation agreement was also entered with the Department of Energy.

Contractors involved