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Ummbila Emoyeni set to be South Africa's largest wind farm

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ERMELO - An abnormal load, a wind turbine blade, recently made its way from Richards Bay to the Ummbila Emoyeni 900MW hybrid renewable energy facility located between Morgenzenon and Bethal.

The massive wind turbine blade was transported by specialised vehicles. The convoy passed through Ermelo on January 30 and overnigheted at Cassim Park. At about 07:40 on January 31, the vehicle left Ermelo on its last stretch to the facility.

The 91m-long turbine blade had to be carefully navigated through the town, a daunting task entrusted to Themba Mjila, the truck driver who had set off from Richards Bay on January 28.

The Ummbila Emoyeni 900MW hybrid renewable energy facility is set to become the largest of its kind in South Africa.

Seriti Green's Ummbila Emoyeni Wind Energy Facility will take a major step forward this week when an additional nine turbines, including 27 blades and other components, will be transported from Richards Bay Port along the N2. These will be moved starting February 3. The convoy, managed by Vanguard, will be 335m long and will take three days to complete.

Each turbine consists of 12 components, and special trucks are used to move a single turbine blade from the port to the Ummbila Emoyeni Wind Energy Facility. Road modifications along the N2 have been implemented to ensure that the turbine blades can be transported safely.

Speaking on behalf of Vanguard, Ryan Hosking said: "Our South African team has been planning and preparing for the port handling and transportation of these wind turbines for over a year. This is a complex engineering and logistical operation, and our experience over the past 15 years in the wind energy sector has placed us in good stead to execute this project safely and efficiently."

The initial turbines will arrive in Bethal later this week and convoys will continue until all turbine components have been

delivered.

Once operational, the Ummbila Emoyeni Wind Energy Facility's first phase is expected to offset 500 000 tonnes of CO2 emissions annually.

Mike Teke, group CEO of Seriti Resources and chairperson of Seriti Green, said: "This future contribution to South Africa's climate commitments will powerfully demonstrate our leadership in building a more diversified and sustainable energy landscape. The project will also bolster the nation's energy security by increasing generation capacity, contributing to a more stable and secure electricity supply."



The 155MW marks the first phase of a larger 900MW project that Seriti Green aims to build over the next three years

In addition to energy generation, the project has begun to create jobs in the community. Over the past two years, just over 1 000 people have been employed by Seriti Green and onsite contractors.

With the heads of terms signed between Seriti Green and Seriti Resources for the power purchase agreement, construction on the R4.8b project is currently under way.

The 155MW marks the first phase of a larger 900MW project that Seriti Green aims to build over the next three years, at an estimated cost of R25b. The project, part of a broader effort to transition the region towards renewable energy, has been designated as a strategic integrated project by the Department of Public Works

and Infrastructure, and has received the necessary environmental authorisation to proceed from the Department of Forestry, Fisheries and the Environment.

The first phase of the Ummbila Emoyeni project is expected to begin commercial operations this year. This phase will provide 75% of the power required for Seriti's coal mining operations through a wheeling agreement with Eskom. The full 900MW facility is expected to be fully commissioned by 2027, supplying electricity to the equivalent of approximately 500 000 South African households.

In addition to the Ummbila Emoyeni project, Seriti Green is also developing a 1.3GW project, Phefumula Emoyeni, adjacent to the wind farm. According to Seriti Green, this expansion falls under a broader strategy to diversify energy generation in Mpumalanga, historically a hub for coal-based power production.

The site for the Ummbila Emoyeni project was chosen based on favourable wind conditions. The region's topography and climate offer consistent wind flow, which is essential for the efficient operation of wind turbines. These conditions are expected to ensure the effective generation of renewable energy throughout the project's lifespan. The location also allows for potential coexistence with existing coal power plants in the area. By operating alongside these plants, the wind farm can supplement energy production, particularly during periods of high wind output. This balance is expected to reduce reliance on coal and contribute to lower greenhouse gas emissions, playing a role in the gradual transition toward a cleaner energy mix.

The Ummbila Emoyeni hybrid renewable energy facility is a significant step towards South Africa's energy transition.

Alongside Seriti Green's other renewable energy initiatives, the project supports the region's ongoing shift away from coal and toward a more diversified and sustainable energy future.

The project will be built in multiple phases, with Ummbila Emoyeni One being the first phase:

- This 155MW wind energy facility is the first phase of the larger, 900MW renewable energy cluster called Ummbila Emoyeni, located between Bethal and Morgenzenon in Mpumalanga.
- Ummbila Emoyeni One will supply Seriti's coal mining operations with power via wheeling through the Eskom grid, and is expected to commence commercial operation in 2025.
- A significant portion of the shared grid infrastructure necessary for subsequent Ummbila Emoyeni phases will be constructed during this stage, which will aid in expediting construction timelines.
- The project will supply Seriti Resources' coal mines with 500 GWh of electricity per annum. This represents 75% of the group's energy needs and is a significant step in its decarbonisation journey.
- The remainder of the project is expected to be fully commissioned by 2027, by which time it will provide electricity for the equivalent of 500 000 South African households.

Details on the nine turbines and their components:

- Each individual turbine consists of 13 components to be transported, totalling 117 loads
- The convoy transporting the tower sections will be 335m long
- When the tower is erected on site it will be 130m tall, adding the blade of 91m, totals 221m

Main components of the turbine's dimensions and weight:

- 3x wind turbine blades: dimensions 91m x 4.9m x 3.7m, weight 33 tonnes each
- 1x hub assembly: dimensions 4.9m x 4.5m x 4.1m, weight 59.2 tonnes
- 1x nacelle: dimensions 10.7m x 4.9m x 4.2 m, weight 39.6 tonnes
- 1x drivetrain: dimensions 7.9m x 3.6m x 3.4m, weight 93 tonnes
- 6x tower pieces: Length ranging from 14m to 25m and weight ranging from 48 to 83 tonnes for the bottom piece, a total 130m.