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Johnson Crane Hire Completes Challenging Heavy Lifts For Two Wind Farm Projects

The Vestas wind farm projects at Grahamstown, Saldanha, Great Kei Municipality, Tsitsikamma and Grassridge will see a substantial amount of renewable energy filtered into the national grid, with a subsequent reduction in carbon emissions. Johnson Crane Hire has completed heavy lifts for three of these wind farm projects and is currently busy with the Tsitsikamma wind farm heavy lift.

The wind farms are located in areas that experience high winds, and this poses a challenge when performing the lifts. Leveraging many years of experience on a wide variety of projects across a number of industries, the Johnson Crane Hire's team of skilled engineers and operators has overcome the inclement weather conditions and difficult logistics.

There are seven 3 MW V-112 turbines on the Chaba Wind Farm which will feed 21 MW of power back into the grid once energised and commissioned. This will power 14 000 South African homes. Waainek Wind Farm will have eight turbines capable of producing 3 MW of power each and a combined installed capacity of 24.6 MW. This represents 1.3% of the national target for onshore wind energy and is sufficient energy to power 16 000 South African households.

Johnson Crane Hire was responsible for the lifting of all the turbines and associated componentry for both wind farms. The lifts at Chaba took a month, while those at Waainek took six weeks.

Prior to the erection of the Liebherr 750 ton LG 1750 lattice boom truck mount on the hard stand on site, all the wind turbine components were preplaced on a laydown area. The placement of the components is a critical element of the lift itself as it is necessary that they be located within the crane's safe working load area. Brandon Grange, project manager at Johnson Crane Hire, says that the design of the Liebherr LG 1750 allows for easy relocation between sites with increased mobility on sites with varying terrain.

Each turbine comprises a base tower, a mid tower and a top tower section as well as a nacelle, the drive train, the hub and three rotor blades. With the exception of the base tower section which is pre-installed, all other components needed to be lifted into position for final installation and commissioning. Each turbine has an 84 metre hub height and a 112 metre rotor diameter.

The second tower has a length of 28.8 metres, a 3.9 metre diameter and weighs 58 tons. The top tower has a length of 30 metres, 3.3 metre diameter and a 42 ton weight. The nacelle, excluding the drive train, weighs 70 tons and is 12 metres in length with a 4 metre width and a height of 3.1 metres. The drive train is 7 metres long, 3.5 metres wide and 3.2 metres high with a weight of 58 tons. The three blades, which were individually lifted into position, each have a length of 55 metres, a width of 3.9 metres and a height of 2.6 metres, with a weight of 12.3 tons.

The LG 1750 was stripped after completion of the Waainek project and was immediately relocated to the next wind farm project at Tsitsikamma Wind Farm, which is 40 km outside Jeffreys Bay.

CHABA AND WAAINEK WIND FARMS PIC 01 : The ability to overcome inclement weather and difficult logistics are testament to Johnson Crane Hire's vast experience and expertise.

CHABA AND WAAINEK WIND FARMS PIC 02 : Johnson Crane Hire was responsible for lifting all turbines and associated componentry for Chaba and Waainek wind farms.

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