

ENERCON Success stories

E-160 EP5: Award-winning Milestone in the ENERCON Portfolio

ENERCON's new type of wind energy converter, the E-160 EP5, is an important cornerstone of the new product and marketing strategy pursued by the company with the goal of strengthening their international market position even further. A large portion of the projects that are currently in the planning or negotiation stages worldwide is based on this new wind energy converter. It is ENERCON's new top model with the largest rotor diameter in the product portfolio; it is the low-wind model of the EP5 platform, which also includes the E-147 EP5 for medium wind sites as well as the E-136 EP5 for strong wind sites. The installation of the first prototype in the summer of 2020 in the Netherlands was therefore closely monitored by the development engineers and the installation coordinators at ENERCON project management. The ENERCON team was able to accomplish the installation for the first E-160 EP5 during the coronavirus pandemic. The construction site was largely unaffected by the lockdown and there were only some minor restrictions and delays due to the effects of the pandemic on the global supply chain.

The E-160 EP5 has been judged as the 'turbine of the year 2020' by the international specialist journal Windpower Monthly. ENERCON's new flagship won first place in the 'large onshore turbine' (4.5 MW+) category. The key aspects influencing the expert committee's vote were the rapid development and the substantial advances in the wind energy converter technology that ENERCON has achieved in a relatively short space of time with its new top model. The E-160 EP5 therefore represents how much ENERCON has achieved in its reorientation in such a short space of time.

Longest rotor blades in the portfolio

A particular challenge during the installation of the first E-160 EP5 was the transport and handling of the rotor blades. These components manufactured by rotor blade maker LM are 78.3 metres long. This makes them the longest rotor blades in the ENERCON portfolio at this time. The logistics concept included loading tests and test trips using the intended transport equipment and involving a detailed route inspection in order to optimally prepare the direct transport of the prototype components from the factory in Poland to the construction site. The single-blade installation was performed using some tools that were new to ENERCON: the blade hoisting device for rotor blade installation, where the device is attached to the crane hook together with the fitted rotor blade; and the hub rotating tool, specially adapted to the EP5 type for turning the rotor head during blade installation.

Further improvements ahead

The prototype built in the Netherlands corresponds to the E1 version. The E1 with 4.6 MW of nominal power is ENERCON's first step into the large rotor class using permanent magnet generator technology. This version is used in order to validate the engineering concept and to measure and observe the wind energy converter under real-life conditions. At the same time, the E1 is the basis for developing more types with greater nominal power and yield potential. This product strategy reflects ENERCON's push for lowering the cost of energy (CoE). The next concrete step is the prototype installation of the E-160 EP5 E2 which represents the next evolutionary stage of the E-160 EP5 including a marked performance increase: Its nominal power is 5.5 MW. The story continues.

