WINDSPOT by SONKYO ENERGY

report SEPEN

After more than seven months of trials in NARBONNE, an area of France with exacting wind conditions, SEPEN (Site Expérimental pour le Petit Eolien de Narbonne) issued their report on the trials run on the WINDSPOT 3.5 wind turbine prototype for grid connection. SEPEN is an independent center in the Languedoc-Roussillon region whose main mission is to test 1 Kw to 10Kw output wind generators. SEPEN has already tested the wind generators of some of the leading manufacturers in the world. The test results are published on their web page and are accessible to everyone, with the manufacturer's permission. The main points tested are: safety, reliability, productivity and noise. We highlight the most relevant aspects of the final report as follows:

SAFETY

Various exceptional situations were tested, such as a network meltdown or emergency braking. Both the speed control systems in the first case, and the response systems to sudden braking in the second, were satisfactory.

Similarly the machine's operation at speeds above 21.6 m/s was considered satisfactory, i.e., above 1.8 times the rated speed (the reference value in accordance with the standard IEC 61400-2).

RELIABILITY

The objective is to test the structural integrity of the machine during the test period, and the degradation of the system after a prolonged period of operation.

Similarly the efficiency of the gaskets was tested to guarantee the leak tightness of the equipment and protection against corrosion.

After SEPEN technicians examined the machine, there was no mention of excessive wear and tear or corrosion problems.

The report outlines that over the more than seven months of testing no incident was recorded.

WINDSPOT by SONKYO ENERGY

report SEPEN

PRODUCTIVITY

A power curve was published in accordance with standard IEC61400-12 to measure productivity. As this was a prototype and due to the number of changes in the wind turbine's configuration during the test, the mean data shown on the power curve masks the data of the worst configurations, while detracting from the data of the best configurations, which are those which have been incorporated in the models for sale.

For the power curve of the final configuration of the WINDSPOT 3.5 click here.

We sincerely thank SEPEN for their collaboration which enabled us to achieve the best configuration for WINDSPOT 3.5; its commercial version shall be tested again on their premises for the certification of production data.

Despite that which has been mentioned above with regard to configuration changes, it should be noted that the power coefficient measured in our prototype is the highest measured to date in this test centre: above 30% in the environs of 6 m/s, reaching a peak of 33.8% at 6.5 m/s. The wind generator demonstrates its greatest efficiency when the wind is not excessive, and in the range of more normal wind speeds in the environments where this type of wind turbine will be installed.

NOISE

The report highlights the silent performance of the wind turbine in the wind speed ranges tested. The graphs showing the difference between ambient noise (measured with the wind turbine in operation) and residual noise (measured with the wind turbine shut down) may be seen in the complete report.

To access the complete report and find out more about SEPEN click here.