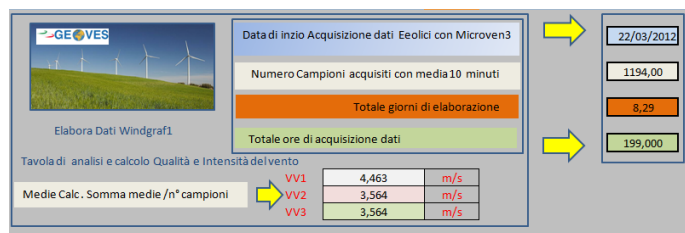


WINDGRAF1 – SOFTWARE FOR THE ANEMOMETRIC DATA ELABORATION FOR THE ENERGY ASSESMENT IN THE EOLIC SITES (Rev.1 010215)

WindGraf1 is a free software that allows the management of wind data coming from MicroVEN dataloggers to derive calculations aimed at performance assessment of wind turbines. With Windgraf1 it can put the power curve of the chosen wind turbine and then compare the turbine with the highest return for the chosen site.

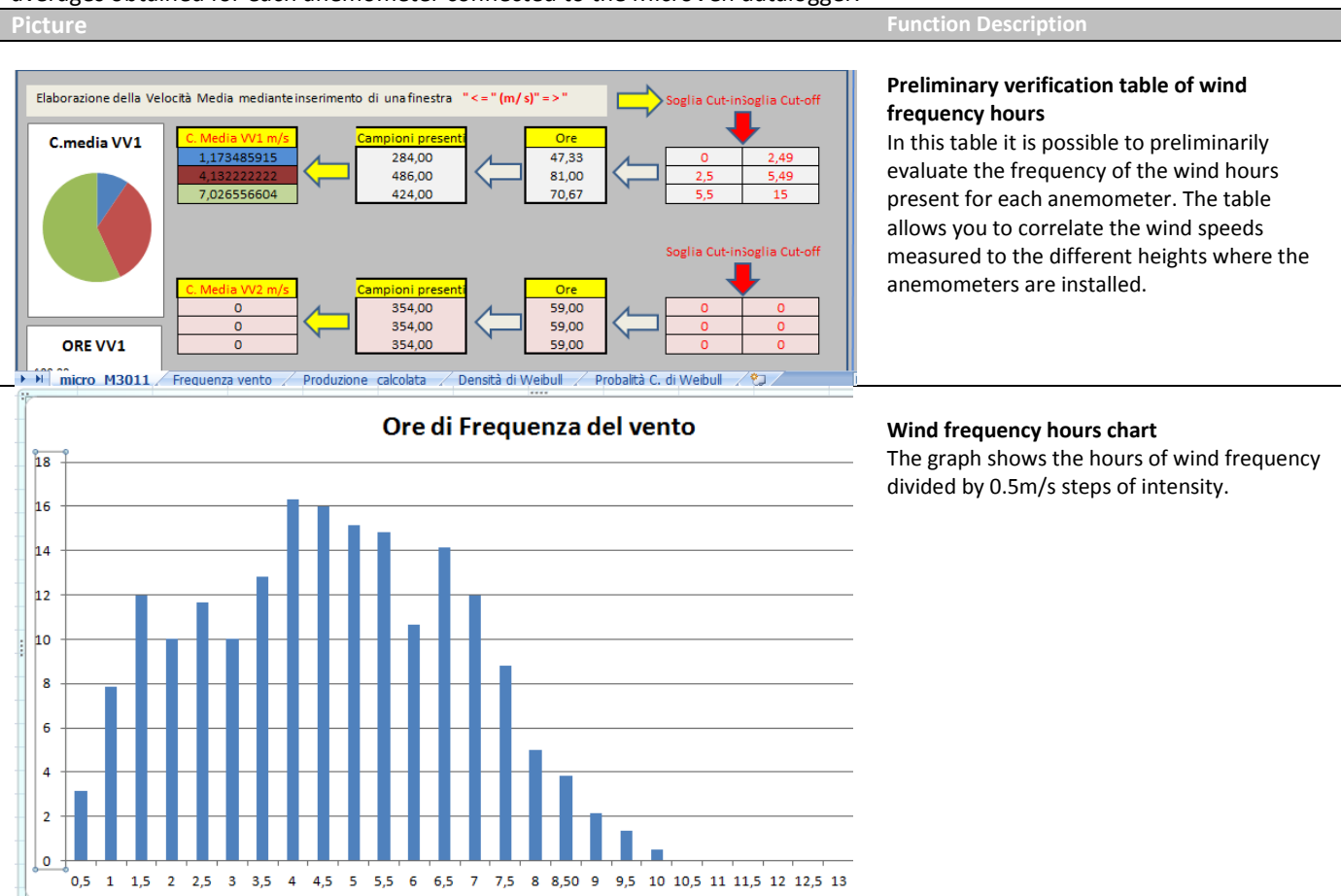


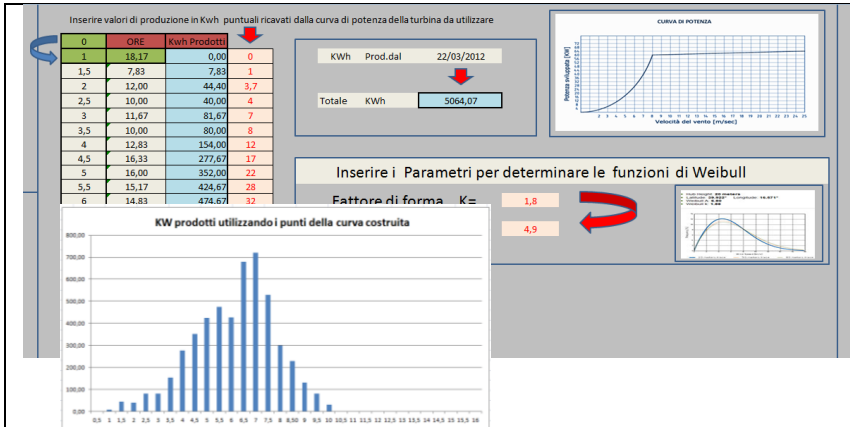
The performance evaluation is done through various graphical and tabular processing which provides the following information:

1. Preliminary wind power analysis report
2. "Hours of wind frequency" graph
3. "Correlation between different anemometers heights and stored wind speeds" Report
4. "Hours of wind frequency" graph
5. "Generated Wind Power" report
6. "Weibull probability density" and "Weibull cumulated probability" graphs
7. "Wind Rose" graph

The software uploads the data sent from the anemometric station via GPRS (e-mail or ftp) and generates an excel anemometric reports very usefull for wind energy assesment.

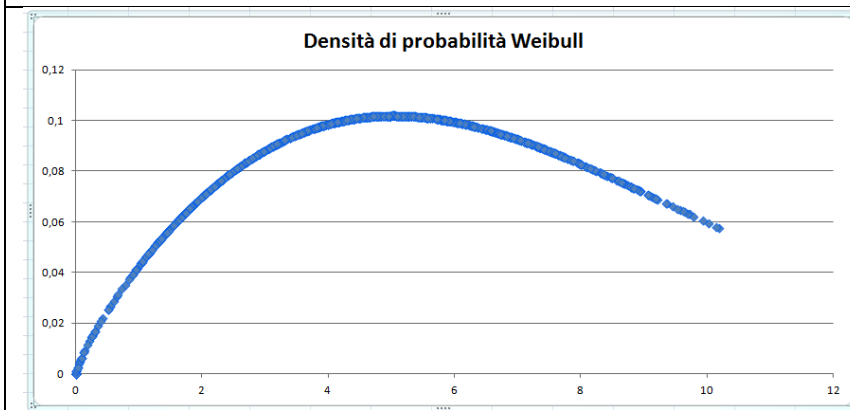
Furthermore Wind Graph1 allows you to summarize the data acquisition period, the number of recorded samples, the averages obtained for each anemometer connected to the MicroVen datalogger.





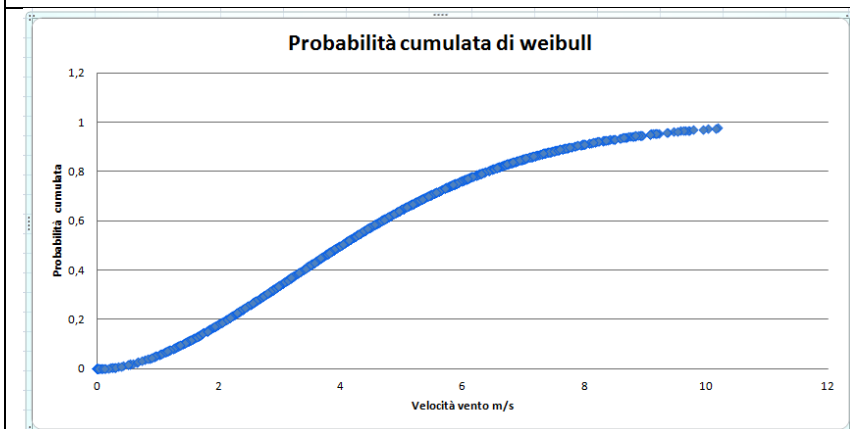
"Produced Energy" report

The report allows you to set the power curve values of the wind turbine supplied by the manufacturer to correlate them with wind speed and frequency hours. In this way, the produced energy in KW/h by the turbine is obtained in the period of time examined.



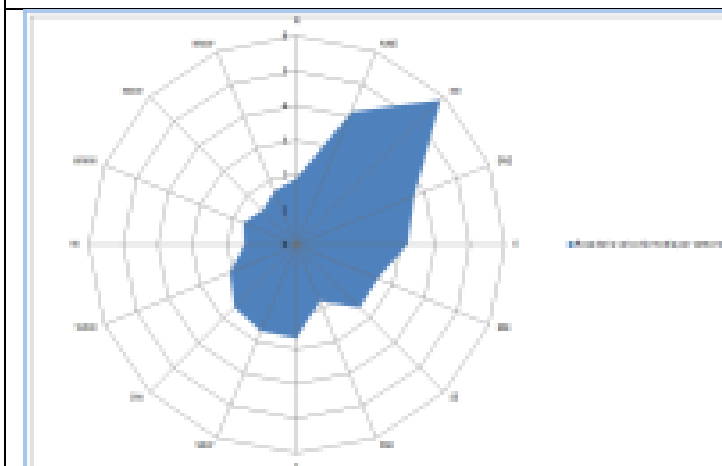
Weibull probability density chart

The Weibull probability density graph represents a statistical distribution calculation that expresses the probability that the wind speed is within a certain range of known velocity values. The graph can be calculated by setting the form factor and the scale factor



Weibull Cumulative Probability Chart

The Weibull Cumulative Probability graph represents a statistical distribution calculation that expresses the probability that the wind speed is less than a known speed value. The graph can be calculated by setting the form factor and the scale factor



Wind rose chart

The wind rose graph is a radial graph of the wind frequency represented on a compass. The wind rose is represented on 16 sectors of the compass where you can see the intensity classes related to the directions of origin of the wind; in this way it's possible identify the cardinal point where obtain the greatest energy developed by the wind.