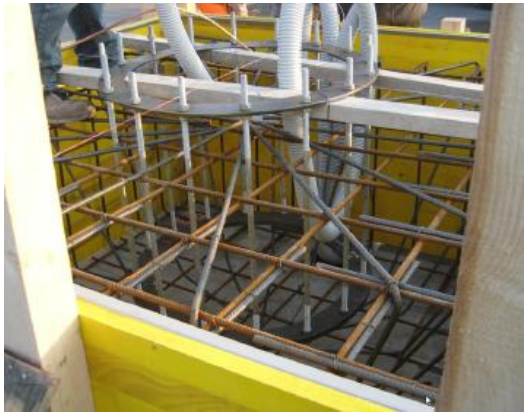
Site Coordinates

Demonstratrive site within Porto Corsini Harbour
Coordinate 44° 29.725'N - 12° 17.169'E

The demonstrative power plant is constituted by:

- n.1 Vertical Axis Wind Turbine (VAWT) model TN1.5 manufactured by Tozzi Nord;
- n.1 meteorological station for data measurement;
- a data acquisition system unit;
- a remote communication system unit.

Site Preparation



Foundation construction

Small Wind Turbine erection

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Turbine Installation

Small Wind Turbine mounting

Met masting mounting

Final View of the site

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Wind data and Small Wind Turbine data acquisition system

The remote monitoring and control of the VAWT is carried out by means of UMTS modem.

The system can be accessed by remote; all the data are stored on a SD memory.

The data acquisition system deals with the following signals:

Wind speed @ 7 m (m/s)

Wind direction @ tm (deg)

VAWT power output (W)

Wind speed and direction are measured at the same height of the rotor blade (7m).

Preliminary Results

40075	18.4.2012 16.1.47.942	82	787	241,3101
40076	18.4.2012 16.1.48.957	85	753	262,589
40077	18.4.2012 16.1.49.958	85	804	262,8391
40078	18.4.2012 16.1.50.958	80	804	272,3477
40079	18.4.2012 16.1.51.958	80	682	266,3556
40080	18.4.2012 16.1.52.958	80	748	261,2415
40081	18.4.2012 16.1.53.958	80	729	260,5484
40082	18.4.2012 16.1.54.958	78	716	248,4524
40083	18.4.2012 16.1.55.958	78	785	243,7654
40084	18.4.2012 16.1.56.958	70	737	247,0089
40085	18.4.2012 16.1.57.958	70	843	242,8759
40086	18.4.2012 16.1.58.958	64	679	239,7918
40087	18.4.2012 16.1.59.958	64	690	229,8481
40088	18.4.2012 16.2.0.959	67	785	205,8383
40089	18.4.2012 16.2.1.959	67	686	199,9845
40090	18.4.2012 16.2.2.959	67	753	198,6176
40091	18.4.2012 16.2.3.959	67	846	205,8083
40092	18.4.2012 16.2.4.959	69	814	203,8744
40093	18.4.2012 16.2.5.959	69	791	207,4156
40094	18.4.2012 16.2.6.959	59	817	206,6485
40095	18.4.2012 16.2.7.959	59	771	200,6943
40096	18.4.2012 16.2.8.959	60	764	206,2654
40097	18.4.2012 16.2.9.959	60	708	204,2178
40098	18.4.2012 16.2.10.959	59	721	189,3952
40099	18.4.2012 16.2.11.960	59	718	167,3141
40100	18.4.2012 16.2.12.960	60	716	147,9612
40101	18.4.2012 16.2.13.960	60	751	131,8933

Wind speed and wind direction values must divided for 10.

Wind speed = 5,9 m/s

Wind direction = 77,1 deg

Power output = 200,6943 W

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Development of the Activities

The collected data are stored on a pc. Files are downloaded by remote or directly at site by means of a memory card.
Files must be parcelled and validated. Later on all the validated data are post-processed by means of a suitable software developed by Tozzi Nord.

Finally the data are represented in graphical and tabular format for an easier interpretation, as the common used:

- availability table;
- average wind table;
- production table;
- energy rose;
- wind rose;
- power time series;
- wind data time series;
- frequency distribution.