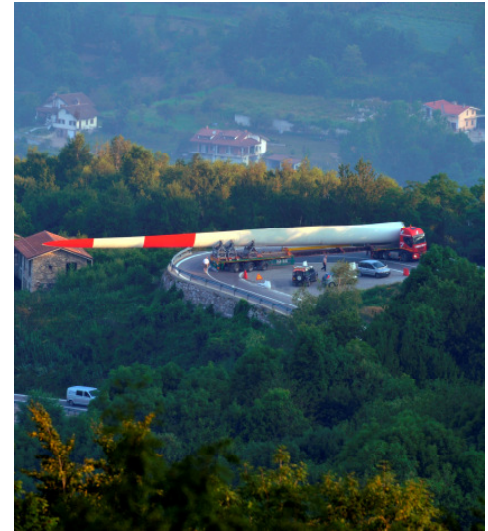


Project profile: San Bernardo, Italy

Project name:	San Bernardo
Owner:	San Bernardo Wind Energy
Power utility:	Enel Distribuzione
Installed capacity:	12,5 MW
Wind turbine type:	1 x N80/2500, 4 x N90/2500
Tower height and type:	1 x 60 m, 4 x 80 m, steel tube tower
Number of wind turbines:	5
Wind speed:	6,7 m/s
Site:	The wind farm is located in the north of Italy close to Garesio in Piedmont.
Site description:	The turbines are situated in mountainous terrain at an altitude of 1,000 meters.
Building period:	August 2007 – November 2008
Grid connection:	November 2008
Extent of delivery:	Nordex was responsible for supplying, transporting, installing and starting up the wind turbines.
Calculated annual power output:	25.700 MWh
Maintenance:	Nordex Italia
Warranty period:	5 years

Project profile: San Bernardo, Italy



The first wind farm in Piedmont, "San Bernardo", is located on a mountain pass at a height of 1,000 meters. It proved to be a logistic challenge on account of the steep and narrow access road. Nordex had previously gained experience in transporting large-scale components to locations such as these in countries such as France and Scotland. However, as the specific conditions varied from site to site, it was necessary to find individual transport solutions. This was no different with "San Bernardo".

The first obstacle was of an administrative nature as it was necessary to apply for a transport permit for the pass. Finally, the large-scale components for the wind power systems were carried from the port of Vado Ligure to the site in more than 100 trips using four different kinds of trucks.

Nordex had already simulated the most critical parts of the route, specifically a very tight curve, beforehand to ensure safe transportation of the rotor blades, which measured up to 45 meters in length. The problem was that the truck was unable to pass the curve when it was carrying the rotor blade. The situation thus required the utmost attention of the transportation team: a crane lifted the rotor blade from the truck before it reached the curve, turned it around and then placed it back on the truck after it had inched its way around the curve. Space was also at a premium for the team responsible for assembling the five turbines. A further challenge proved to be the extreme winter conditions during the start-up of the wind farm.

A site for robust turbines

"San Bernardo" offers a wonderful panorama stretching from the Alps on the one side to the Mediterranean on the other. The five turbines are now demonstrating their robustness as they are exposed to heavy gusts of wind throughout the entire year and, in winter, snow and ice in temperatures dropping to as low as minus 20 degrees.

South Italy in particular remains very attractive as a site for wind farms. However, projects such as "San Bernardo" are also harnessing the potential offered by the north of the country, which is similarly characterized by favorable wind conditions.

