

Current Wind Farms Operating in North Africa

The "Abdelkhalek Torres" wind farm on Morocco's northern coast, is located on Africa's Northern most point, across the Strait of Gibraltar some 15 kilometers away from Europe's Southern tip.

With a rated capacity of 54 MW in operation since the year 2000, this wind parc next to the city of Tetouan, represents one of the oldest, single wind energy generating unit on the continent.

Over 200 000 MWh/year of wind electricity are currently being produced by some 90 Wind Turbines of the 600 kW range. If this production was to be supplied by a coal fired power plant, some 230 000 tons of carbon dioxide would have been released in the atmosphere. To sequestrate this amount of carbon, the planting of over 12 million trees would have been necessary.

As for the natural habitat, large corridors have been provided for migratory birds to pass through. Statistical surveys have now revealed that the impact of the wind turbines on the local environment has been negligible.

The more recent "Amogdoul" 60 MW wind farm started operation on April 13th 2007. Amogdoul is the ancient name of the city of Essaouira next to which this wind farm is located, some 400 Km South of the city of Casablanca on Morocco's Atlantic coast. Cap Sim near the wind parc, is among Morocco's most western cape on the Atlantic coastline where trade winds can be tapped on these Northern latitudes. Indeed, and although being located some 600 km away North of the Saharan coastline, the Amogdoul wind farm enjoys the very same favorable trade wind conditions. While remaining fairly close to Morocco's main urban load centers that are covered by a more robust grid network, the Amogdoul wind farm has a high productivity and generates some 210 GWh of electricity per year. This leads to the systematic reduction of 156.000 tonnes of CO2 emissions per year. Configured with 71 individual 850 kW wind turbines, this wind farm also benefits from the Clean Development Mechanism (CDM) support sources associated to environmental agreements from the Kyoto protocol. Unveiled on June 28 2010, the Tangier I wind farm "Dahr Saadane" with a capacity of 140 MW is made of 165 wind turbines of 850 kW each. Located on the Northern tip of Morocco this wind farm, alike its "Abdelkhalek Torres" predecessor listed above, takes advantage of the extremely good wind conditions available on the Strait of Gibraltar. Built with financial support from the European Investment Bank (EIB), the German KfW and the Spanish ICO, in a very favorable site, this wind park should one of the most productive generating around 536 GWh per year. In terms of environmental impact, the Dahr Saadane wind farm has been fitted out with low noise wind turbine blades and sited in specific locations as to preserve the migratory bird's routes through the area. The Dahr Saadane wind farm will contribute to mitigate over 368,000 metric tons of CO2 emissions per year. On the western shores of the red sea, 220 km from the city of Cairo, the Zafarana wind farm is Egypt's largest wind energy generating facility. With over 430 MegaWatt of installed capacity, some of which in operation for the last 10 years, the Zafarana wind farm is currently the largest on the African continent. Built with financial support from Denmark, Germany and Spain, the Zafarana wind farm is located on a site averaging a yearly wind speed of 8.5 m/s. This makes it one of the world's most productive. The owner and operator of the facilities, the New & Renewable Energy Authority (NREA) of Egypt's Ministry of Electricity & Energy (MEE) is very satisfied by the performances achieved at Zafarana, particularly since this wind farm enabled the field testing of several wind turbine technologies in desert conditions. As a result, extensions in the Giga Watt range are currently being undertaken in the vicinity of that area. With peak productivity occurring during summer months, the wind conditions at Zafarana enables a matching of Egypt's seasonal peak loads by a renewable source of carbon-free generated electricity. Because of these perspectives, efforts are currently being undertaken to ensure a local manufacturing of wind turbine parts and components, if not entire systems enabling Egypt's industrial capabilities in the field of green technologies and renewable energies to be successfully demonstrated.