



Technology Innovation for the Local Scale
Optimum Integration of Battery Energy Storage

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Wind turbine

A medium-scale, 800kW capacity wind turbine was installed on the island of Tilos in July 2017. The turbine's tower is 60 meters high, while the blades are 53 meters wide. The maximum annual electrical output is approximately 2.1GWh, equal to 70% of the electricity demand of the island of Tilos. During high wind speed periods, the electricity generation will be higher than the overall electricity demand of the island, even during summer months.

The environmental benefits are also significant, as the wind generated electricity is equivalent to about 480.000 liters of oil, used for power generation at the oil-fired power plant of Kos, which, in turn, prevents the emission of 1,350 tonnes of carbon dioxide (CO₂), 2 tonnes of nitrogen oxide (NO_x), and 21 tonnes of sulfur dioxide (SO₂).

Thanks to its steep rocky landscape and the ban on hunting, issued in 1993, Tilos is home to significant species of birds of prey and seabirds, such as Eleonora's falcons and Audouin's gulls. Thus, minimizing the impacts on the island's biodiversity was an important criterion when selecting the appropriate location of the wind turbine, along with the wind characteristics that would ensure adequate electricity generation.

Eventually, the small hill next to the beach of Plaka was selected as the most favourable installation site, since it allows for the optimal combination of minimum impacts on birds together with maximum wind energy generation.



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