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An Overview of Onshore and Offshore Wind Turbines

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Abstract : With the increase in population and the upward trend of energy demand, mankind has thought of using suppliers that guarantee a stable supply of energy, unlike fossil fuels, which, in addition to the widespread emission of greenhouse gases that one of the main factors in the destruction of the ozone layer and it will be finished in a short time in the not-so-distant future. In this regard, one of the sustainable ways of energy supply is the use of wind converters. That convert wind energy into electricity. For this reason, this research focused on wind turbines and their installation conditions. The main classification of wind turbines is based on the axis of rotation, which is divided into two groups: horizontal axis and vertical axis; each of these two types, with the advancement of technology in man-made environments such as cities, villages, airports, and other human environments can be installed and operated. The main difference between offshore and onshore wind turbines is their installation and foundation. Which are usually divided into five types; including of Monopile Wind Turbines, Jacket Wind Turbines, Tripile Wind Turbines, Gravity-Based Wind Turbines, and Floating Offshore Wind Turbines. For installation in a wind power plant requires an arrangement that produces electric power, the distance between the turbines is usually between 5 or 7 times the diameter of the rotor and if perpendicular to the wind direction be If they are 3 to 5 times the diameter of the rotor, they will be more efficient.

Keywords : wind farms, Savonius, Darrieus, offshore wind turbine, renewable energy
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