



- 1 Blades:** The three bladed rotors are constructed of fibreglass. The profile and shape of the blade is designed for maximum efficiency and minimum noise.
- 2 Hub:** The hub is a cast iron component that connects the turbine's blades to the main shaft. When the wind blows the blades and hub rotate at 28 rpm. The hub and blades weigh a total of 7.2 tonnes.
- 3 Gearbox:** The main shaft, rotating at 28 rpm, is connected to the gearbox. The gearbox increases the speed of rotation to 1,500 rpm and drives the generator.
- 4 Generator:** The generator (3-phase, 690 Volt) is driven by the high-speed shaft and also turns at 1,500 rpm, supplying electricity through a low voltage local transformer to a high voltage transmission transformer and into the transmission line grid.
- 5 Nacelle:** This is the steel/fibre glass casing that supports and covers the gearbox and generator. The nacelle has 360° directional movement and is turned into the wind using the yaw motors which are controlled by the wind vane. The nacelle and equipment weigh a total of 20.4 tonnes.
- 6 Weather instruments:** These are attached to the back of the nacelle. A 3-cup anemometer spins around to measure the wind speed and the windvane records the wind direction.
- 7 Yaw motors:** The yaw motors are controlled by information from the windvane. These motors ensure that the nacelle is always facing into the wind.
- 8 Parking brake:** The parking brake is used to stop the blades rotating in gale force winds or for maintenance purposes. It is hydraulically operated using the same principle as a car's disc brake.
- 9 Hydraulic power pack:** The hydraulic power pack operates the blade pitch change mechanism and the parking brake.