

3.0 Technical Specifications

3.1 Water Pumping Windmills

Broad technical specification and other details of the water pumping windmills being promoted under the programme are given below. However, other models can also be considered based on their quality and performance.

Designs/ models	Broad technical specifications	Estimated Water output versus head	Suitability
Direct drive windmill such as 12 PU 500 and similar other windmills	Rotor diameter – 5 m Nos. of blades – 12 Tower height – 7 m Pump diameter – 150 mm Cut in wind speed –10 km/hr Rated wind speed – 18 km/hr	8000 liters per hour at 7 meter head	For shallow water pumping upto 15 meter head
Gear type windmills	Rotor diameter – 3.3 m Nos. of blades – 18 Tower height – 10 m Pump diameter – 50-100 mm Cut in wind speed –9 km/hr Rated wind speed – 18 km/hr	1000 liters per hour at 20 meter head	For deep well pumping from 16 meter to 60 meter head
AV 55 Auroville direct drive windmills	Rotor diameter – 5.7 m Nos. of blades – 24 Tower height – 9-23 m Pump diameter – 64-160 mm Cut in wind speed –10 km/hr Rated wind speed – 18 km/hr	4000 liters per hour at 15 meter head	For shallow and deep well pumping upto 60 meter head

3.2 Aerogenerators

The rated capacity of individual aerogenerators covered under the programme will be up to a maximum of 100kW, however, MNRE support for installation of aerogenerators will be restricted to a maximum total capacity of 10 kW (project capacity). Both imported & indigenously manufactured/assembled aerogenerators are covered under the programme. The manufacturers will have to get their models empanelled with MNRE based on the testing/certification as per IEC 61400-2 and IEC 61400-12-1 for Design requirement and Power Performance and Safety function test as per the empanelment procedure evolved by the Centre for Wind Energy technology (C-WET), Chennai. A detailed empanelment procedure has been evolved by C-WET in consultation with all the stakeholders and is summarized at Para 6.2.

Only the MNRE empanelled models of the aerogenerators will be eligible for financial support under the scheme.

3.3 Hybrid Systems

Hybrid systems based on a combination of various renewable energy sources like wind and solar photovoltaic are covered under the scheme. The hybrid systems will be

designed to meet the annual load requirement with optimum use of resources. The rated capacity of individual aerogenerator covered under the program will be upto a maximum of 100kW, however, MNRE support for installation of a Wind–Solar Hybrid system will be restricted to a maximum capacity of 50kW (system capacity). The wind component of the hybrid system has to be at least 60% of the total capacity. As mentioned above, only the MNRE empanelled models of the aerogenerators will be eligible to be used in Hybrid systems for financial support under the present scheme. The SPV modules to be deployed under the Programme should conform to the relevant IEC Standards. The SPV modules to be deployed under the Programme should conform to the relevant IEC Standards.