

National Wind-Solar Hybrid Policy, 2018, Dated: 14.05.2018 with amendment Dated: 13.08.2018

(MINISTRY OF NEW & RENEWABLE ENERGY)

Sl. No.	Description	Summary
1.	Objective	<ol style="list-style-type: none"> 1. The main objective of the Policy is to provide a framework for promotion of large grid connected wind-solar PV hybrid system for optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability. 2. Policy also aims to encourage new technologies, methods and way-outs involving combined operation of wind and solar PV plants.
2.	Operative Period	This policy will remain in force unless withdrawn, modified or superseded by the Government. The Government will undertake a review of this Policy as and when required.
3.	Hybrid Plant	A wind-solar plant will be recognized as hybrid plant if the rated power capacity of one resource is at least 25% of the rated power capacity of other resource.
4.	Implementation Strategy	<p>The implementation of wind solar hybrid system will depend on different configurations and use of technology.</p> <p style="padding-left: 20px;">Wind-Solar Hybrid- AC integration:</p> <ol style="list-style-type: none"> 1. In this configuration the AC output of the both the wind and solar systems is integrated either at LT side or at HT side. In the later case both system uses separate step-up transformer and HT output of both the system is connected to common AC Bus-bar. Suitable control equipment are deployed for controlling the power output of hybrid system. 2. Wind-Solar Hybrid- DC integration: DC integration is possible in case of variable speed drive wind turbines using convertor-inverter. In this configuration the DC output of the both the wind and solar PV plant is connected to a common DC bus and a common invertors suitable for combined output AC capacity is used to convert this DC power in to AC power.
5.	New Wind-Solar Hybrid Plants	<ol style="list-style-type: none"> 1. The hybrid power generated from the wind-solar hybrid project may be used for <ol style="list-style-type: none"> (a) Captive purpose; (b) sale to third party through open access; (c) sale to the distribution company 2. The power procured from the hybrid project may be used for fulfilment of solar RPO and non-solar RPO in the proportion of rated capacity of solar and wind power in the hybrid plant respectively. 3. Government entities may invite bids for new hybrid plants keeping qualifying criteria such as grid interface point, effective CUF and unit price of electricity, and the tariff being the main criteria for selection.
6.	Hybridisation of Existing Wind/Solar PV Plants	<ol style="list-style-type: none"> 1. No additional connectivity/transmission capacity charges shall be levied by the respective transmission entity for hybridisation at existing wind/solar PV plants if already granted transmission connectivity/ access is being used. 2. Transmission charges may be applicable for the additional transmission capacity/ access granted as per prevailing regulation. 3. In case of AC integration assessment of solar and wind power injected from the hybrid project in to the grid will be worked out by apportioning the reading

		<p>of main meter installed at the receiving station on the basis of readings of ABT meters installed on LT or HT side of the wind and solar PV plant as the case may be.</p> <p>4. In case of DC integration assessment of solar and wind power injected from the hybrid project in to the grid will be worked out by apportioning the reading of main meter installed at the receiving station on the basis of readings of DC meters installed at the DC output of the wind and solar PV plant. Till such time the methodology for DC metering of hybrid systems and standards & regulations are framed for DC meters, only AC integration will be permitted.</p> <p>5. The additional solar/wind power generated from the hybrid project may be used for</p> <ul style="list-style-type: none"> (a) captive purpose; (b) sale to third party through open access; (c) sale to the distribution company
7.	Storage	Bidding factors for wind solar hybrid plants with storage may include minimum firm power output throughout the day or for defined hours during the day, extent of variability allowed in output power, unit price of electricity, etc.
8.	Incentives	The Government will encourage development of wind-solar hybrid systems through different schemes and programmes. All fiscal and financial incentives available to wind and solar power projects will also be made available to hybrid projects.