



Utilising Solar Wind Energy in Fisheries Sector

Climate Change is perceived as a major threat primarily to food production through Agriculture, Fisheries and Animal Husbandry. Climate Change is the consequence of Global Warming which in turn is due to increase in greenhouse gases (GHGs). Carbon Dioxide is a GHG that emanates from burning fossil fuels such as coal, oil and natural gas for generating energy/ power/ electricity. In Fisheries & Aquaculture HSD oil is used as fuel in fishing vessels and in gen-sets that ensure backup-power for post-harvest fish processing, cold chain maintenance, etc. Further, electricity from thermal power plants is essential for most of the semi-intensive, intensive and modern technology-driven aquaculture systems. India is the second largest fish producing country in the world with an annual production of about 12.60 million metric tonnes and it is aimed to increase it to 15.00 million metric tonnes.

The United Nations Climate Action Summit recognises that the pace of climate action must be rapidly accelerated and boosted. Despite global carbon dioxide emissions rising, India's ranking in the *Climate Change Performance Index (CCPI) 2019* has improved to 11th position, most notably in its performance in the renewable energy category, and comparatively low levels of per capita GHG emissions. India has set for itself a relatively ambitious mitigation target for 2030.

As part of India's Climate Change mitigation strategy, the Dept. of Fisheries, Ministry of FAH&D, Govt. of India, under the Scheme "*Blue Revolution: Integrated Development and Management of Fisheries*" provides financial assistance for "*Promoting Non-Conventional Energy (NCE) Source for Environment Friendly Fishing Practices*" such as use of solar energy or other NCE sources for lighting, refrigeration on board the fishing vessels, and other activities.

The National Fisheries Development Board (NFDB) is promoting utilisation of renewable energy in various fisheries and aquaculture activities by providing financial assistance for installing 'Hybrid Solar Wind Energy Generator'.

Hybrid Solar Wind Energy Generator

The solar wind energy generator is a hybrid, modular, scalable, distributed renewable energy system designed and optimized for on and off grid installations at inland, on-shore and off-shore locations.

Benefits and Advantages

- Reduces dependence on fossil fuel.
- Eco- and Environment-Friendly.
- Day and night power supply
- Can be used, besides other things, to:
 1. Illuminate cage culture units during night.
 2. Power auxiliary units on board a marine fishing boat or vessel.
 3. Operate small-scale ice plants in remote areas, including islands.
 4. Run pumps, aerators, filters, etc.

Features of Hybrid Solar Wind Mill

One Basic Unit of SolarMill® (<i>WindStream Technologies</i>)	
1	Wind Component
A	Compact low profile vertical axis wind turbine
B	Wind speed range : 2m/s to 18.5 m/s
C	Power output range: 143 W to 500 W
2	Solar Component
A	Mono-crystalline solar cell: 60 per panel
B	Maximum power output: 250 W, 1000V
C	Simple mounting of multiple panels
3	Entire Component
A	Small Foot Print: Dimensions 146 cm (L) x 85 cm (W) x 190 cm (H)
B	Minimizes backup battery storage requirements
C	Online tool for power generation monitoring
D	Material: UV Resistant HDPE
E	Design Life-span: 20 years

Beneficiaries

- ✓ Beneficiaries include Fishermen and their Cooperative Societies/ SHGs, Fish Farmers, Entrepreneurs, Fisheries Establishments in States and Union Territories.

Project Location & Implementation

- ✓ The Hybrid Solar Wind Energy Generator can be installed to provide alternate source or as the only source of electrical energy for operating any fisheries related Unit located inland or along the coast or on an Island.
- ✓ They can also be installed on marine fishing vessels.
- ✓ Dept. of Fisheries of States/ UTs would identify the Beneficiaries. NIRD-RTP would be the Project Implementing & Monitoring Unit (PMU).

Unit Cost of Hybrid Solar Wind Mill Modules

Sl No	Title of Project	Unit Cost Rs. lakh
1	Supply and Installation of 2.25 KW Hybrid Solar Wind Mill for Cage Culture Units in Inland Open Waters	5.90
2	Supply and Installation of 800 W Hybrid Solar Wind Mill for Small Marine Fishing Boat (OAL up to 10 m)	0.85
3	Supply and Installation of 4 KW Hybrid Solar Wind Mill for Large Marine Fishing Vessel (OAL up to 20 m)	8.20
4	Supply and Installation of 40 KW Hybrid Solar Wind Mill for Seawater Block-Ice Plant	52.80

Pattern of Financial Assistance

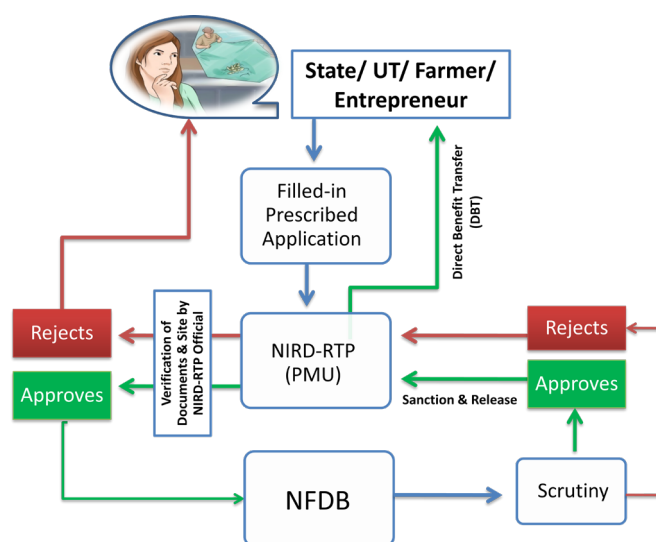
(I) For individual Beneficiaries / Entrepreneurs

Category	NFDB Assistance	Beneficiaries	Total
General Category	40%	60%	100%
SC/ST/Women & their Cooperatives	60%	40%	100%

(II) For States/ UTs and their Agencies/ Organizations/ Federations/ Cooperatives/ Institutes

Central & State Share			
Region	Central / NFDB Assistance	State / UT Share	Total
Other States	50%	50%	100%
North East & Hilly States	80%	20%	100%
UTs/ Govt. of India Organizations/ Institutes	100%	0%	100%

Procedure for Obtaining NFDB Assistance



Procedure for Obtaining NFDB Financial Assistance

Hybrid Solar Wind Mill Energy Utilisation in Fisheries Sector



(a) Illuminating Cage Culture Units in Chandil Reservoir, Jharkhand. (b) Power generation for operating Ice Plant in Lakshadweep Islands. (c) Supplementary power supply on board a Small Fishing Boat and (d) Powering Auxiliary Units on board a Fishing Vessel in Lakshadweep Islands.

The Project Director (NFDB-Project Monitoring Unit)
 Rural Technology Park, National Institute of Rural Development & Panchayati Raj,
 Rajendranagar, Hyderabad-500030.
 Phone: 9848780277
 E-mail: rtp.nird@gov.in



For Further Information:

National Fisheries Development Board (NFDB),
 Fish Building, Pillar No.235, PVNR Express Way,
 SVPNPA Post, Rajendranagar, Hyderabad-500052.
 Ph: 040-24000201/177; Fax: 040-24015568
 Toll Free Number: 1800-425-1660
 E-Mail: info.nfdb@nic.in

