



WindStream
Decarbonizing Planet Earth

**PRESENTATION ON
SOLARMILL® AND ITS APPLICATIONS AND SUCCESS STORIES
FROM
WINDSTREAM ENERGY TECHNOLOGIES INDIA PVT. LTD.**



About Company

With **over a decade** of expertise in **decarbonizing the planet**, we are a **global leader** in **hybrid renewable energy solutions**. Founded in 2013, our **technology, design, and innovation** set us apart.

The **pioneer** company in the world to offer **unique hybrid energy solutions**, we have deployed **installations in the most challenging environments**.

Our products and processes are **certified to international standards** and endorsed by premier institutions and public sector organizations. Example: **ISO certified, CE certified, ICE certified, NIWE Certified**.

With a presence in **38 countries**, we offer unique solutions **in manufacturing and operating hybrid energy solutions worldwide**, catering to diverse markets and economies.

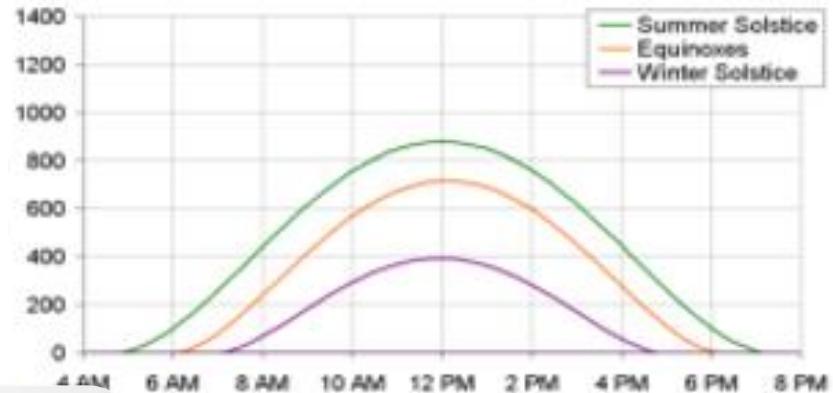
Our **relentless innovation** has earned **numerous industry awards**, reinforcing our **commitment to sustainability and cutting-edge energy solutions**.





Advantages and Challenges

Solar Power



Advantages

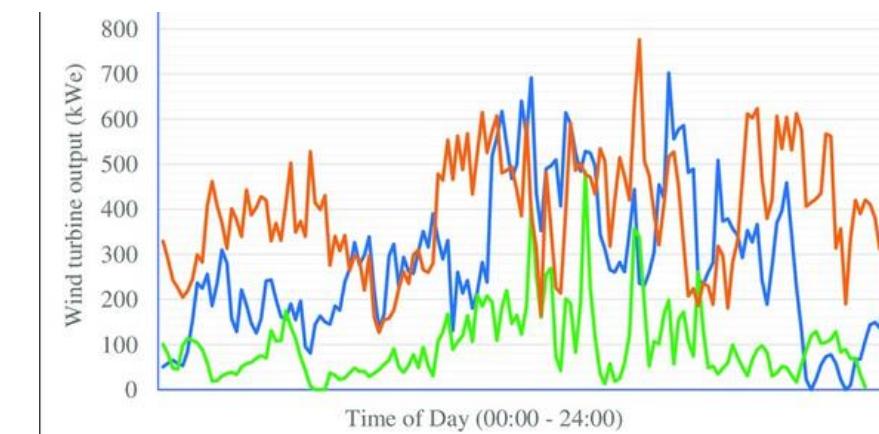


- Clean Energy.
- Sustainable
- Power to Remote Areas.
- Can be Installed on Rooftops.
- Global Availability.
- Silent.

Challenges



- Available only 4 to 6 hrs in a day.
- It requires large areas.
- Expensive for off-grid & bad-grid areas.
- Seasonality.



Wind Power



Advantages



- Clean Source.
- Use of Modern Technology.
- Rapid Growth Potential.
- Exponential generation
- sustainable/clean source
- Available throughout the day.

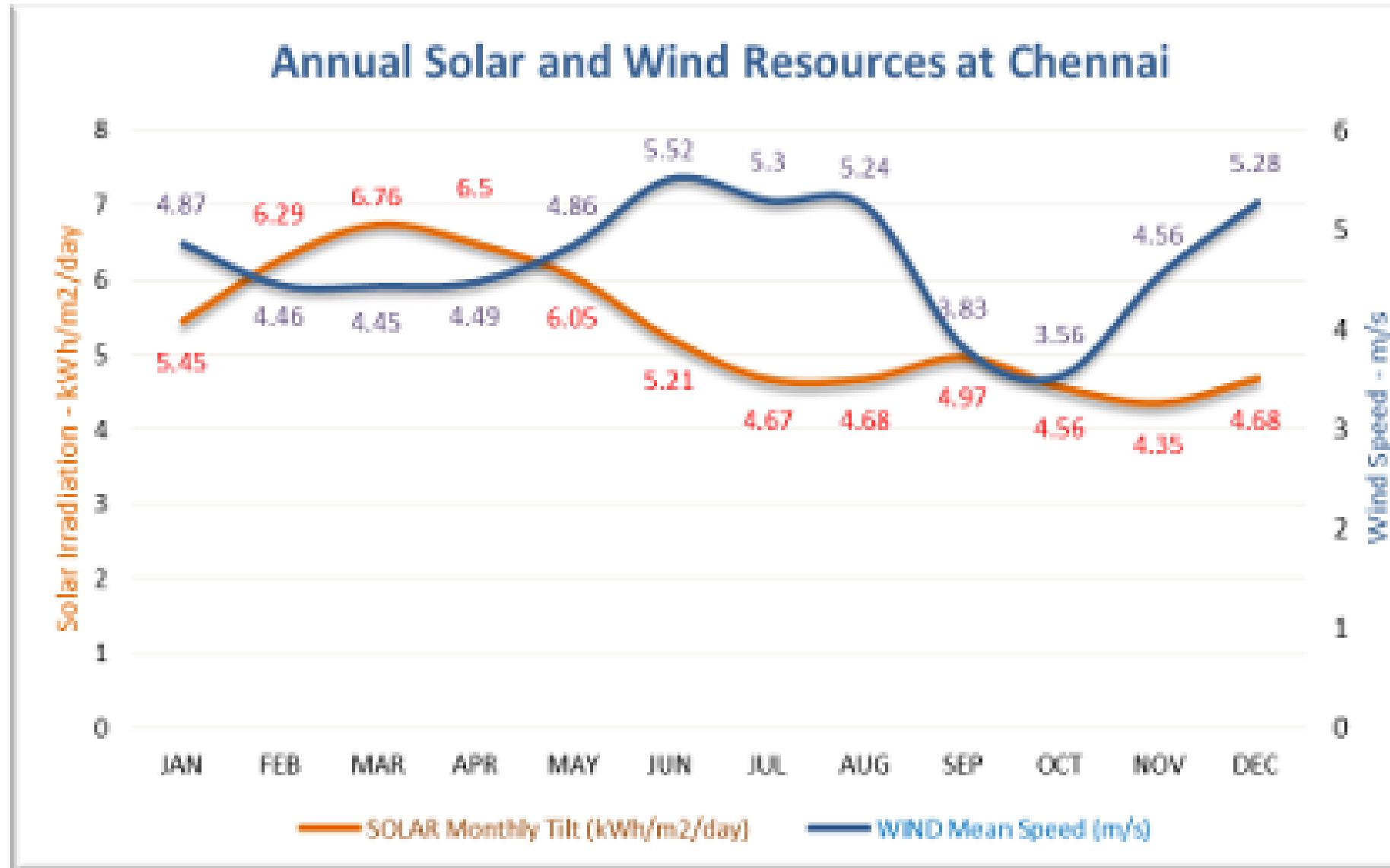
Challenges



- Wind Reliability throughout the year
- Threat to Wildlife.
- Noise Pollution.
- Expensive to Set Up
- Seasonality.
- Suitable for Certain Locations only.



Why Hybrid?



- **Higher Energy Density:** More energy per square meter.
- **Reliable Power:** Ensures continuous generation, reducing downtime.
- **Customizable:** Can be designed to fit various needs.
- **Better Battery Life:** Smooth charging cycles extend storage life.



Problems of Small-Wind Solar Hybrid Solutions

Short Life due to continuous motion and sensitive Tails



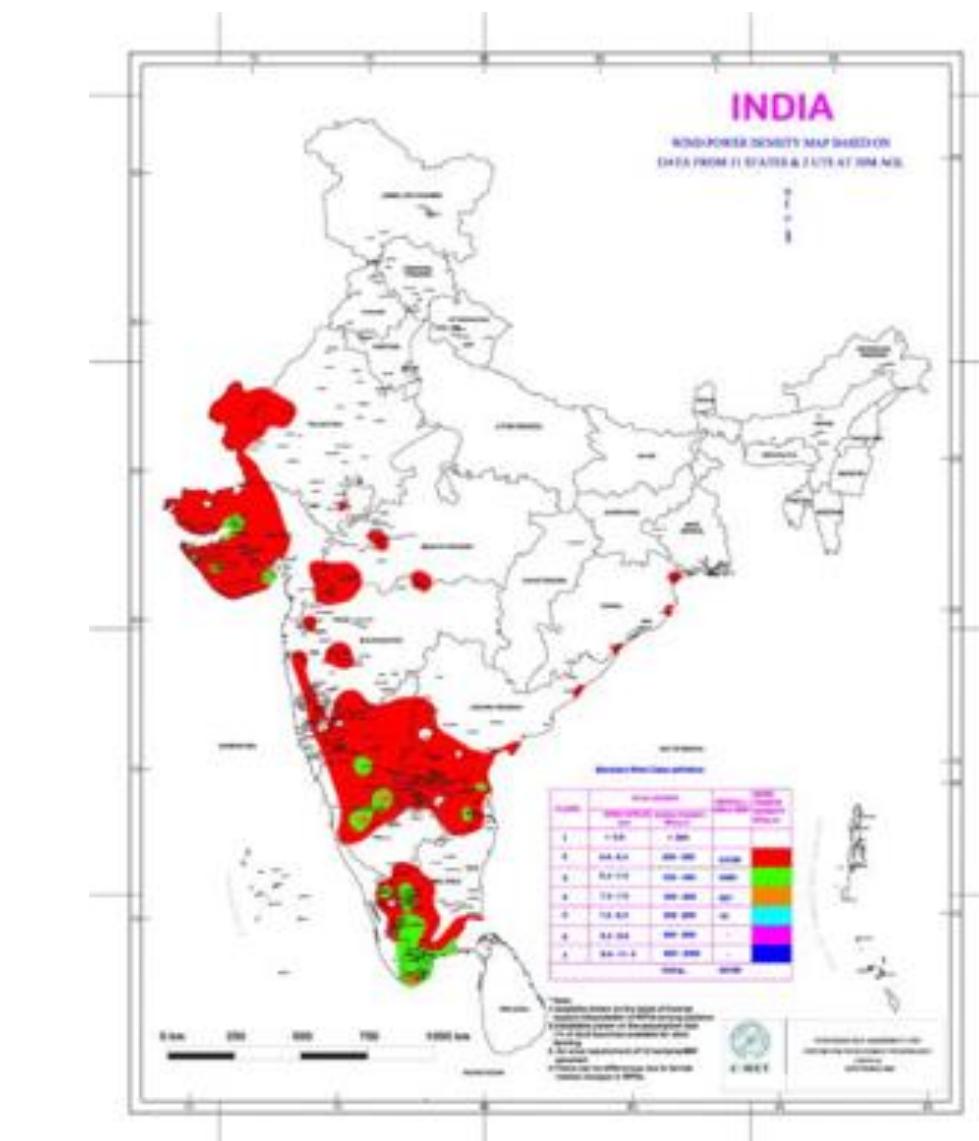
Possible Fire Due to High Winds (No Brakes)



Heavy Foundation due to top heavy structure



Wind Speed Constraints due to uneven terrains



The Product And Features

Vertical-Axis Wind Turbines (VAWTs)

- **Omnidirectional, compact, and durable** design.
- Equipped with **permanent magnet generators** for **high efficiency** and **low maintenance**.

Energy Generation At Low Wind Speeds

- Generating Power at Just **2.5 m/s** (Cut-in wind speed)
- Maximum Safety with Cut-Off at **18 m/s** (Braking system)

Silent & Eco-Friendly

- **Quiet in operation** with a **bird-safe design**.
- **Zero emissions**, helping to reduce carbon footprint.



Easy Installation

- Portable, lightweight, and quickly deployable.
- **More energy** density per square foot.

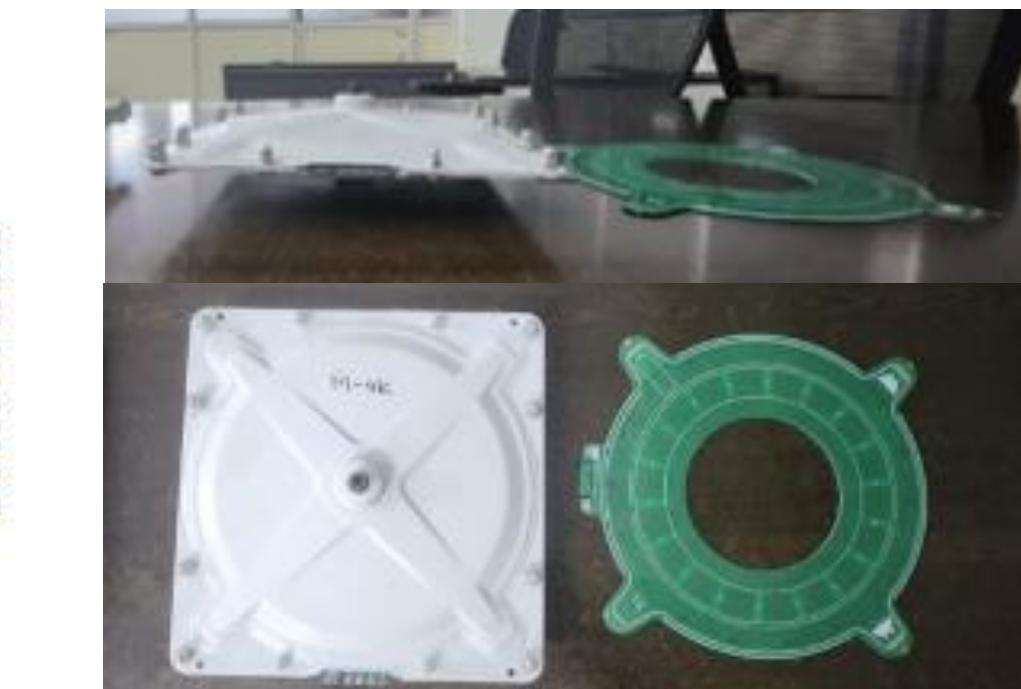
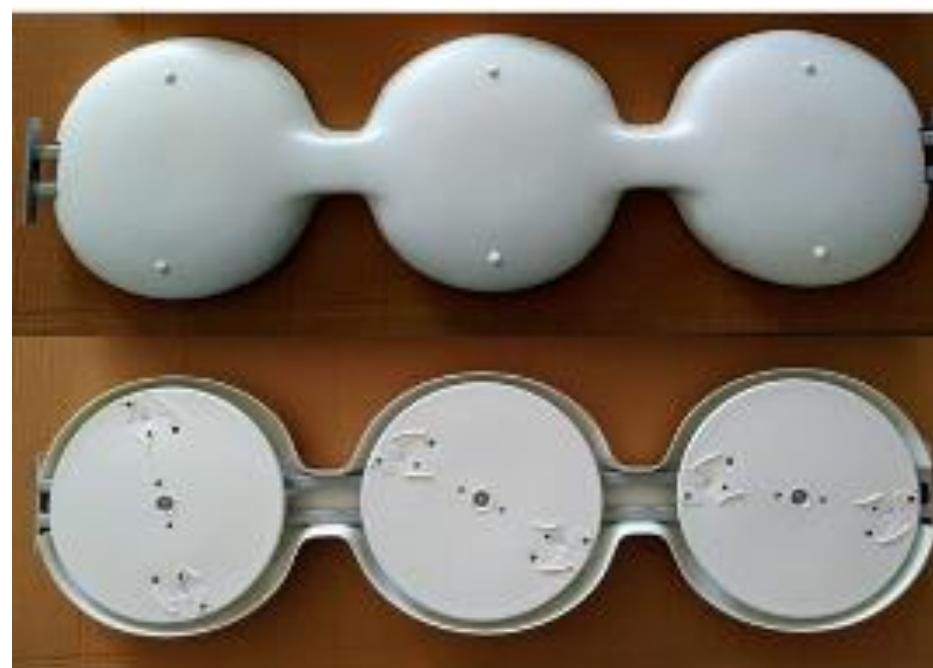
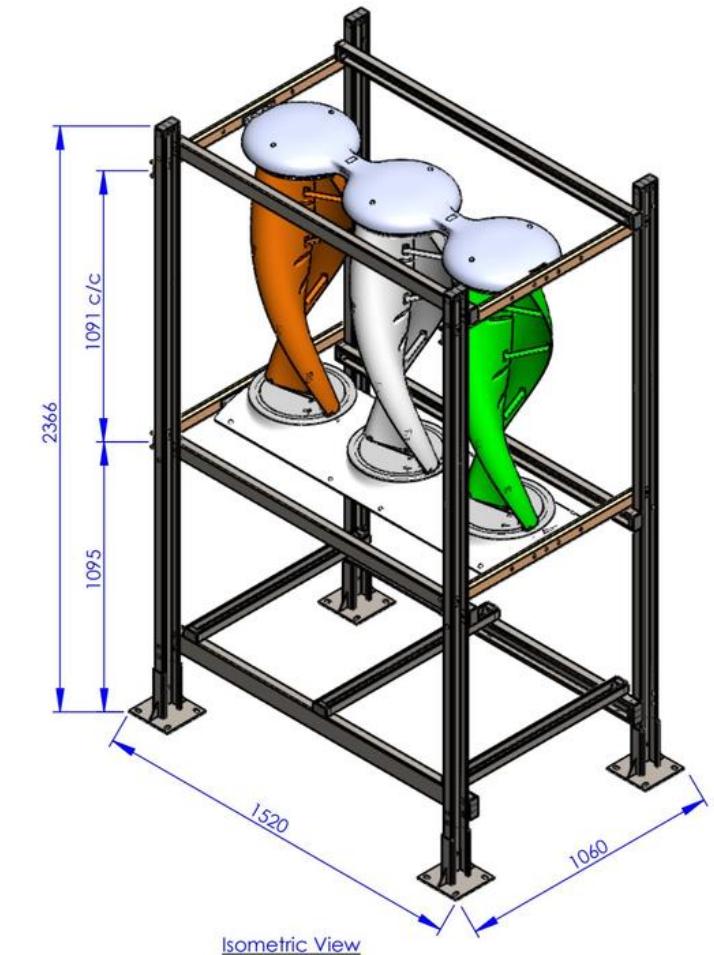
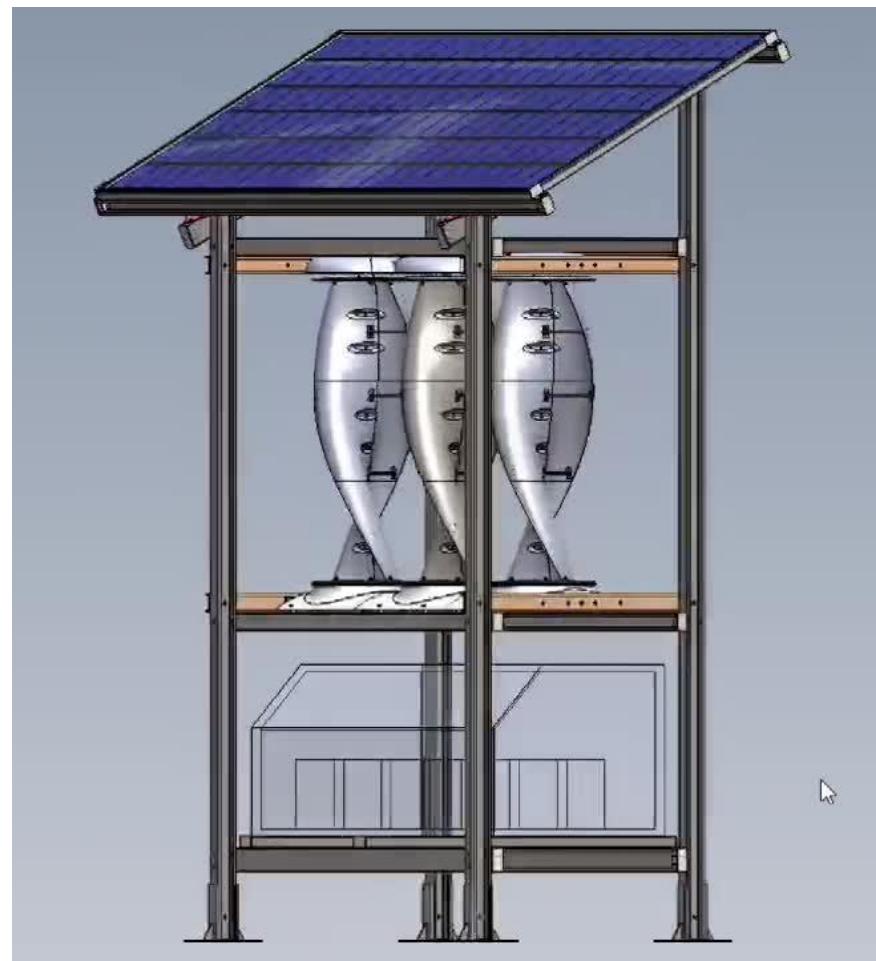
Smart Power Electronics with MPPT

- Dynamic electronics to optimize energy generation in **all wind conditions**.
- Adaptive technology extends lifespan and reduces operational costs.

Easy Grid Integration

- Compatible for **on-grid, off-grid and net metering** solutions, ensuring **scalability** for future needs.
- Suitable for **gross metering**

SolarMill – Material and Construction



Windstream – SolarMill configurations



SM1-1P (1kW)



SM1-2P (1.5kW)



SM1-3P (2kW)



SM2-3P (2.5kW)



SM2-6P (4kW)

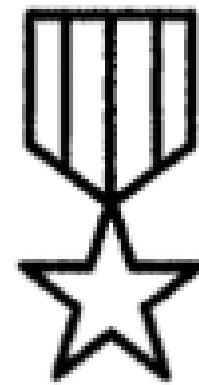


SN2-9P (5.5kW)

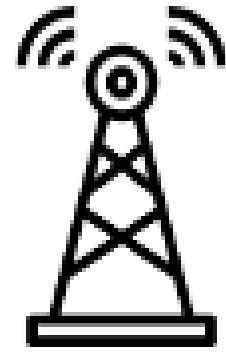


WindStream
Decarbonizing Planet Earth

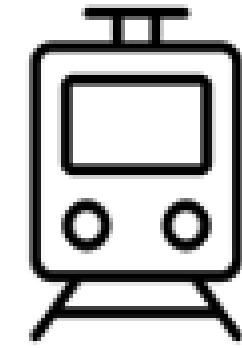
Our Domain Presence



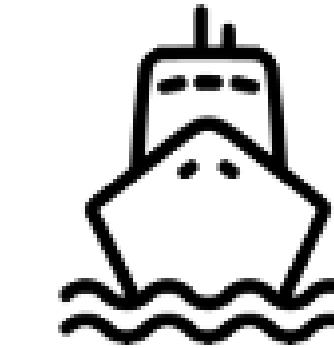
Defence



Telecom



Railways



Marine Transport



Fisheries



Rural Electrification



Healthcare



Agriculture



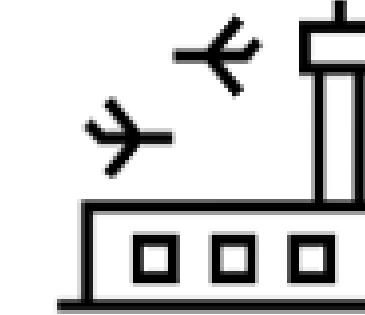
Education



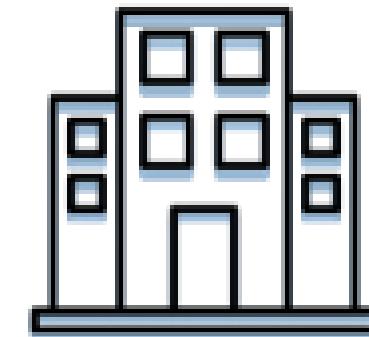
E-Mobility



Disaster Management



Aviation



Residential & Industry



WindStream
Decarbonizing Planet Earth

Business and Residential

Aesthetics and Ease of Roof top Installations

Solutions for Powering:

- Non-Critical loads
- Common lighting
- Streetlights

Solutions for

- On-Grid (Net metering)
- Off-Grid
- Grid interactive



WindStream
Decarbonizing Planet Earth

Solutions for Telecom



We offer Solutions to telecom that are:

- Unique
- More Reliable & Stable Power
- No interference with Communication equipment
- Diesel saving
- Modular design to install at various levels of the Tower
- Silent in operation
- No threat to Wildlife



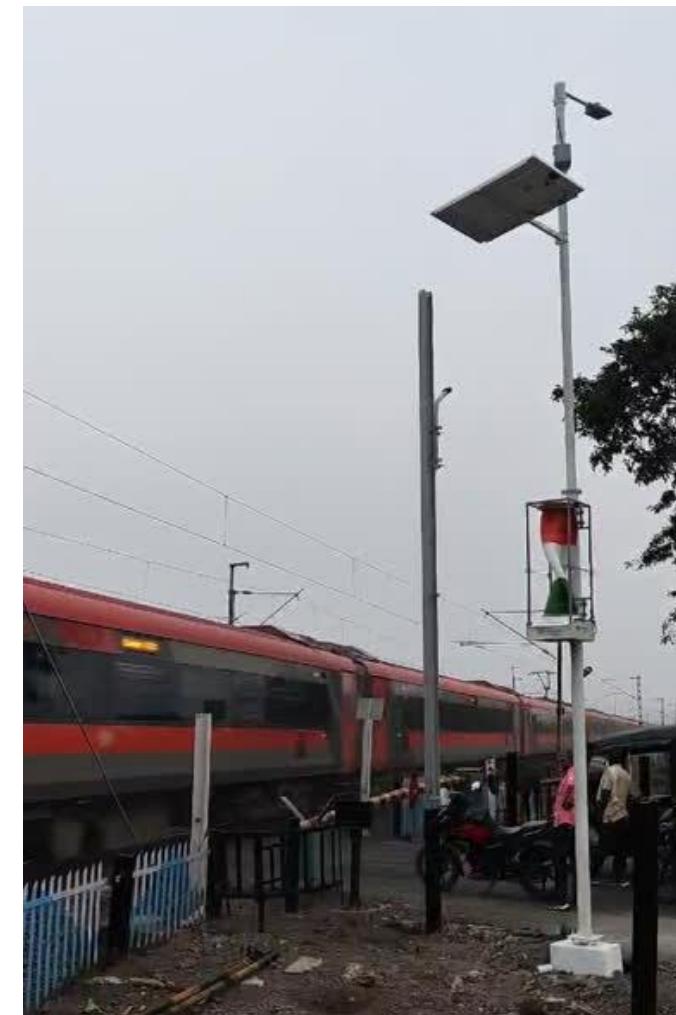
WindStream
Decarbonizing Planet Earth

Solutions for Railways



Solutions for Powering

- Station electrification
- Signalling
- Level crossing
- Railway offices



Solutions For Fisheries & Marine



Solutions for Powering:

- Fish Farms
- Boats and Ferries
- Chillers
- Water makers
- Ice plant



Rural Development



Use Case:

- Streetlights
- Hamlets
- Village electrification
- Healthcare Facilities
- Community Centers



Health care



Use Case:

- Chiller Mills for vaccine and medicine storage in remote areas
- Mobile Medical Units
- Emergency camp vans



Mini Grid Solutions for Powering

Solutions for Powering Mini Grids:

- Homes & Villages – Reliable electricity for daily needs
- Schools & Healthcare – Power for education and medical services
- Water Pumps & Irrigation – Supporting agriculture and clean water access
- Small Businesses – Enabling rural enterprises and economic growth
- Street Lights & Public Areas – Improving safety and accessibility
- Telecom & Connectivity – Ensuring network access in remote areas

Argentina, South America



Karnataka, India



Haiti, Caribbean



Kerala, India



Solutions for Educational institutions

PDEU, Gujarat



Solutions for Powering

- Schools in Remote areas and tribal areas
- Digital class Rooms

It can also be used for

- Lab Demos
- Social experiments for students



Bits Pilani





Solutions for Agriculture

Udon Thani Province,
Thailand

Solutions for Powering:

- Chillers & Freezers
- Water Pumps
- Mini Cold Chambers
- Dryers
- Animal sheds



Solutions for E- Mobility



Cochi, India

Solutions for :

- Powering Charging stations for
 - Two-wheelers
 - Four Wheelers
- Fast chargers



WindStream
Decarbonizing Planet Earth

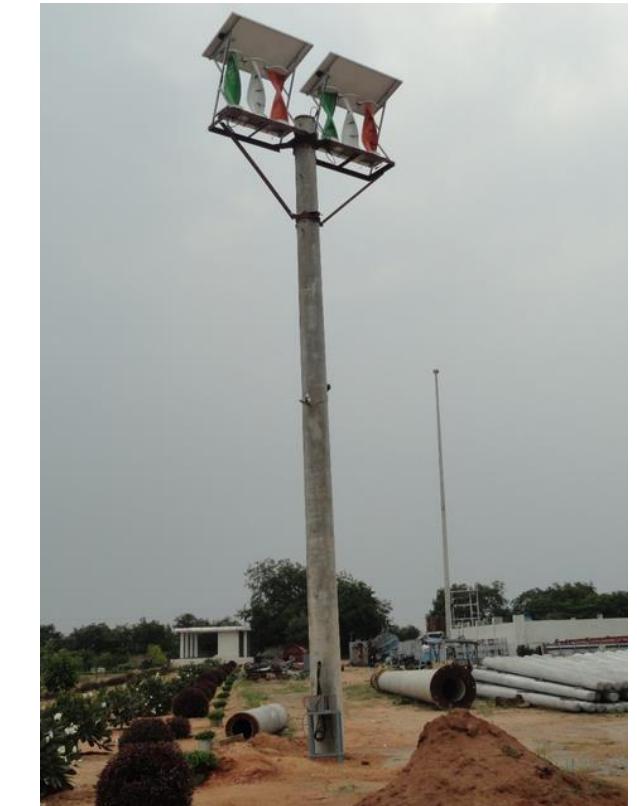
Solutions for Aviation

Solutions for Powering:

- Airports
 - Non Critical loads
 - Common lighting
 - Street Lights
 - Signals
- Drone Charge stations



Airports



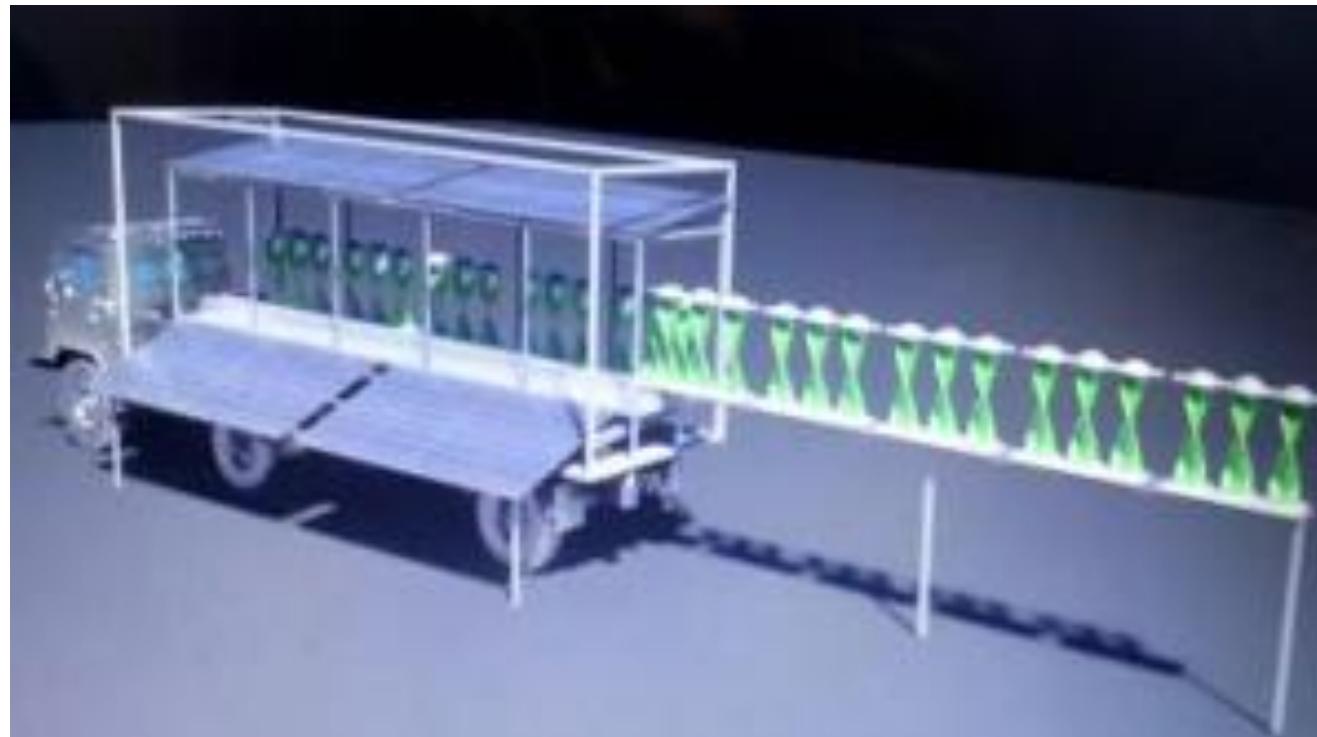
Street Light



Drone Charge stations



Solutions for Mobile Power Units



Solutions for Powering:

- Powering Defence exercises
- Tactical location

Solutions for :

- Disaster Management
- Temporary Powering in
- Critical Locations
- Tactical situations



WindStream
Decarbonizing Planet Earth

Solutions For Defence



High Altitude

Solutions for Powering

- Mini-Grid for Shelters
- Battery Charging Equipment
- Communication Towers
- Defence post
- Mobile Generator
- Security Tower
- Renewable energy Backpack



Valley



INSTALLATIONS IN HIGH ALTITUDES



INSTALLATIONS IN HIGH ALTITUDES



INSTALLATIONS IN HIGH ALTITUDES



Atmospheric Water Generator

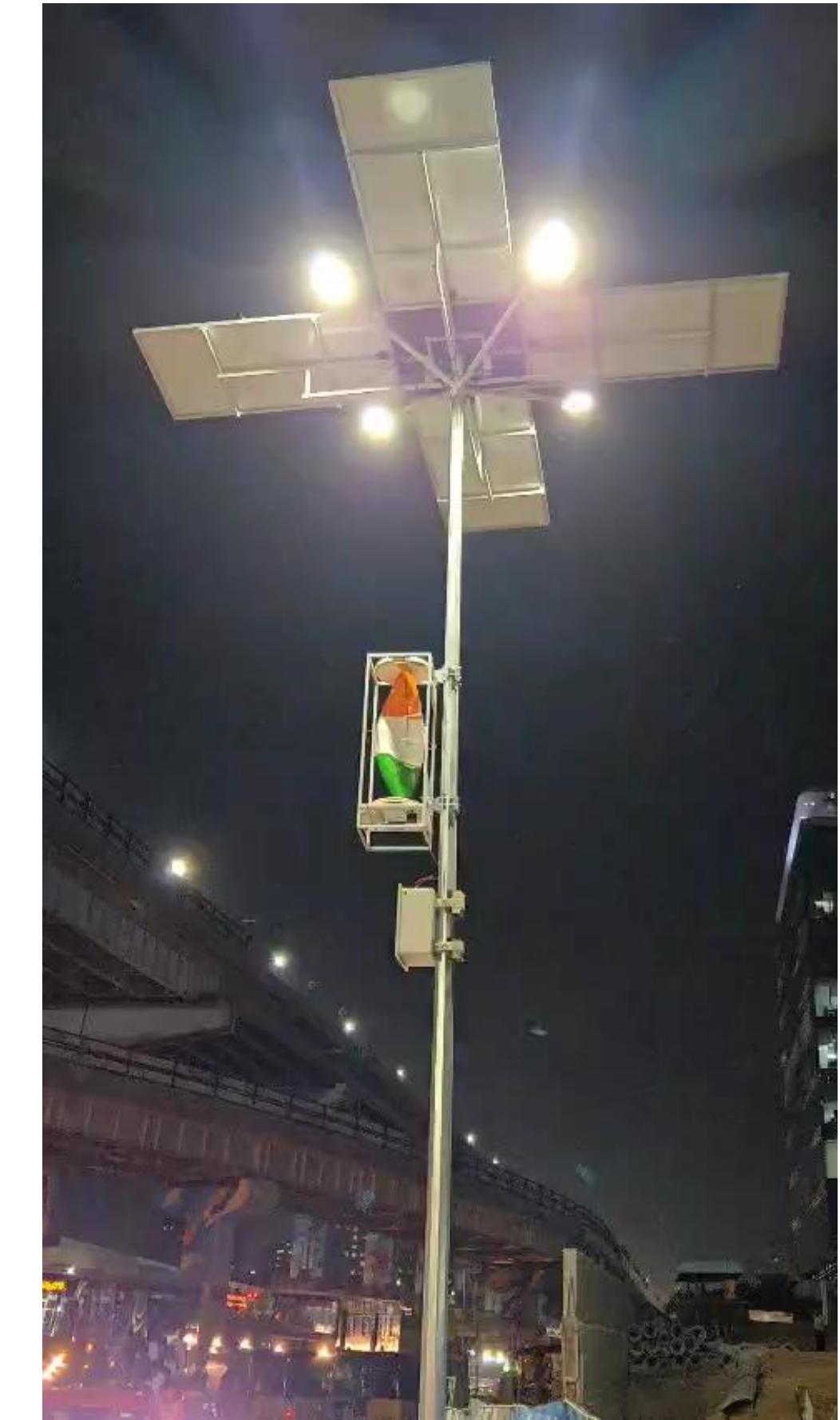


Cooling and Heating applications with Advanced Thermal material



Can replace or compensate Desalination plants and Can reduce the cooling and heating power requirements by 60%

Hybrid Street Lights



Systems in front of Exhausts



Unique advantage : Less space, Aesthetics, More Energy Density, Easy to Install etc.,



WindStream
Decarbonizing Planet Earth

Social Impact: Can empower people in all remote Locations any and every where



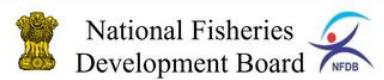
WindStream
Decarbonizing Planet Earth

Environmental Impact: Suitable, Scalable and Modular to install in all locations



WindStream
Decarbonizing Planet Earth

Government of India Schemes to impellent Wind solar Hybrid Systems in various sectors !!



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 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:
 - Illuminate cage culture units during night.
 - Power auxiliary units on board a marine fishing boat or vessel.
 - Operate small-scale ice plants in remote areas, including islands.
 - Run pumps, aerators, filters, etc.

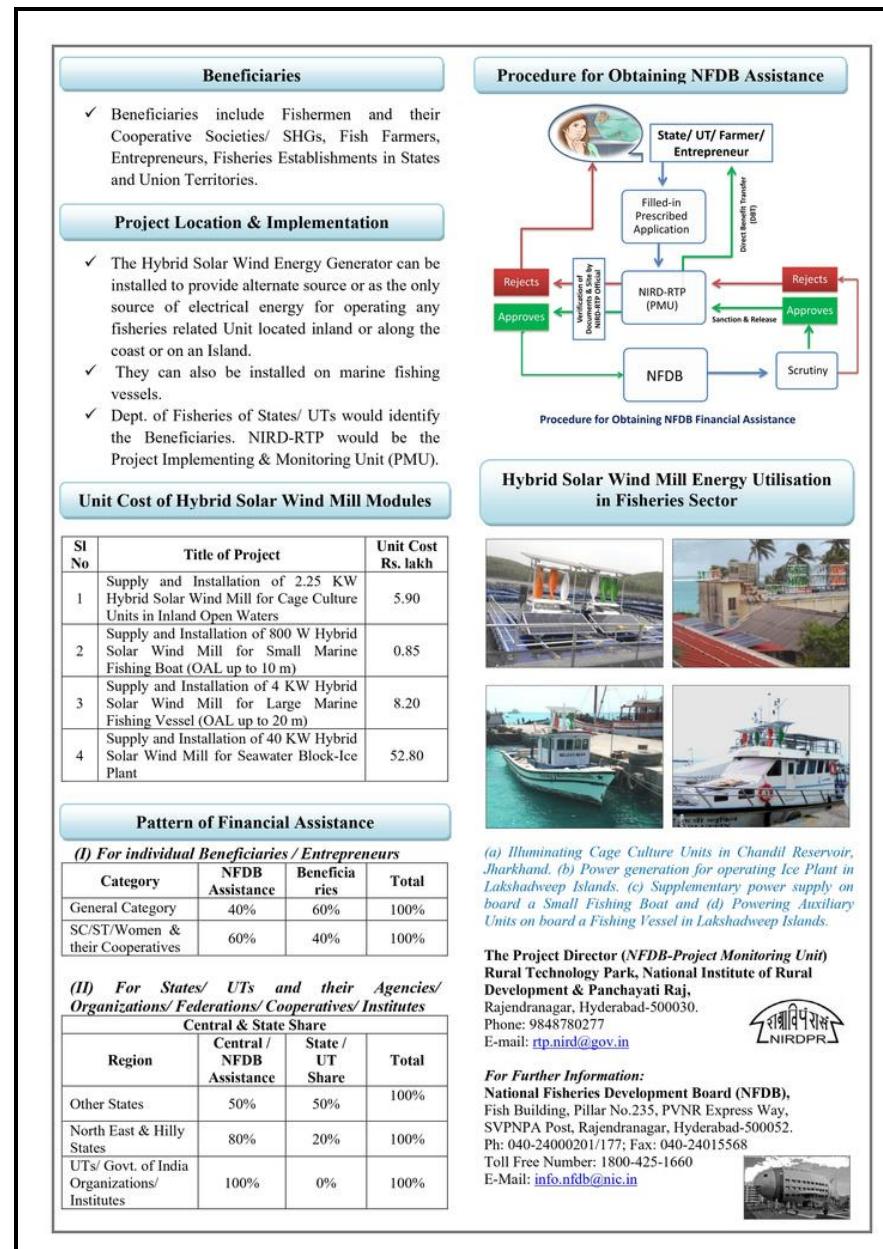
Features of Hybrid Solar Wind Mill

One Basic Unit of SolarMill® (WindStream Technologies)

One Basic Unit of SolarMill® (WindStream Technologies)			
I 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		

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 (CPI) 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.



F. No. 32/18/2020-SPV Division
Government of India
Ministry of New & Renewable Energy

Block No. 14, C.G.O. Complex,
Lodhi Road, New Delhi – 110003
Dated: 14.02.2022

Office Memorandum

Subject: Framework for Promotion of Decentralised Renewable Energy Livelihood applications.

In the COP26 held at Glasgow, Hon'ble Prime Minister of India has announced "Panchamrit" showing commitments from Government of India for reducing the impact of climate change. One of the announcements is to achieve 500 GW capacity in the country by 2030 from non-fossil sources. The Ministry of New and Renewable Energy is making efforts to achieve this ambitious target. Ministry has been supporting off-grid renewable energy applications including solar street light, standalone solar pumps, solar lamps, solar power packs, biogas plants, etc. There are number of livelihood applications which can be integrated with decentralised renewable energy (DRE) sources which not only provide clean and reliable energy but also help in increasing the productivity and income. Various Central Government Ministries are implementing different schemes that support livelihood applications directly or indirectly and integration of DRE sources will further promote the use of such applications.

2. With the aim to facilitate development of an enabling eco system for wide spread adoption of DRE based livelihood applications in the country a framework has been prepared by the Ministry after detailed consultations. The framework is attached. This framework has been developed to guide the State/ Central Government Ministries and other stakeholders in formulating schemes and programmes for promotion of DRE livelihood applications.

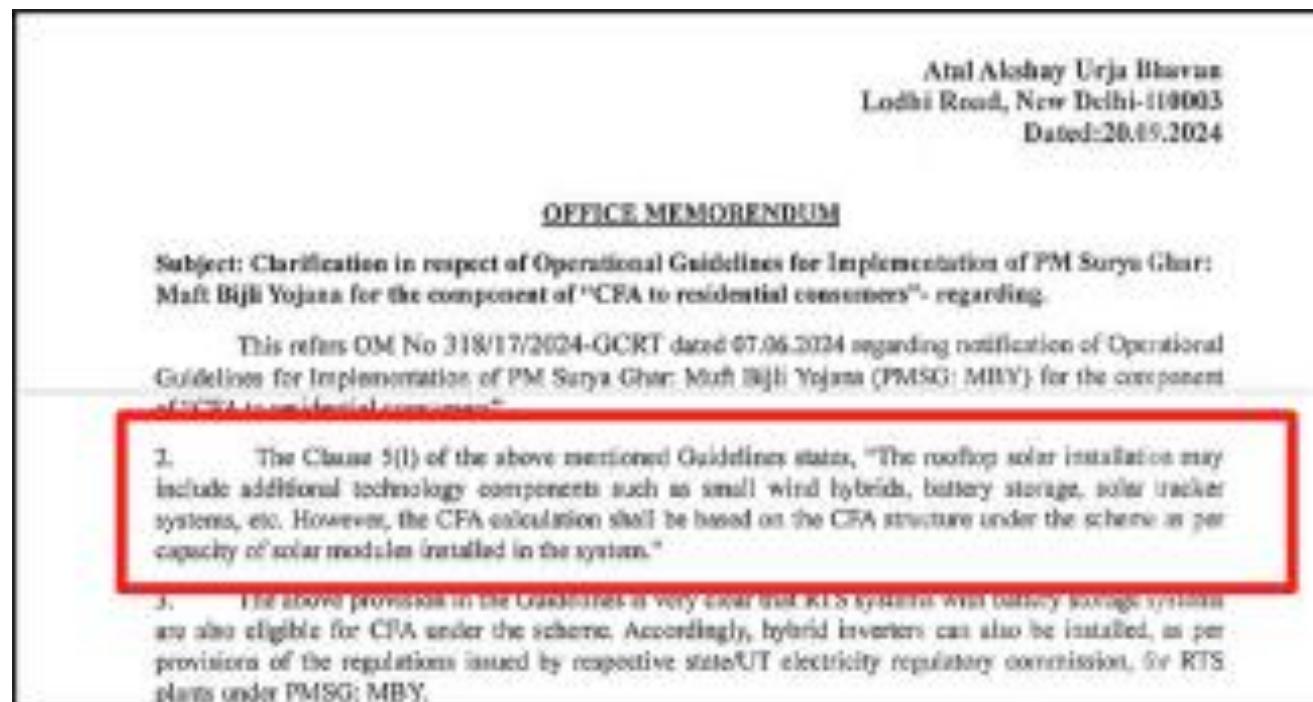

J K Jethani
Sr. Director/Scientist-F

Enclosed: As above.

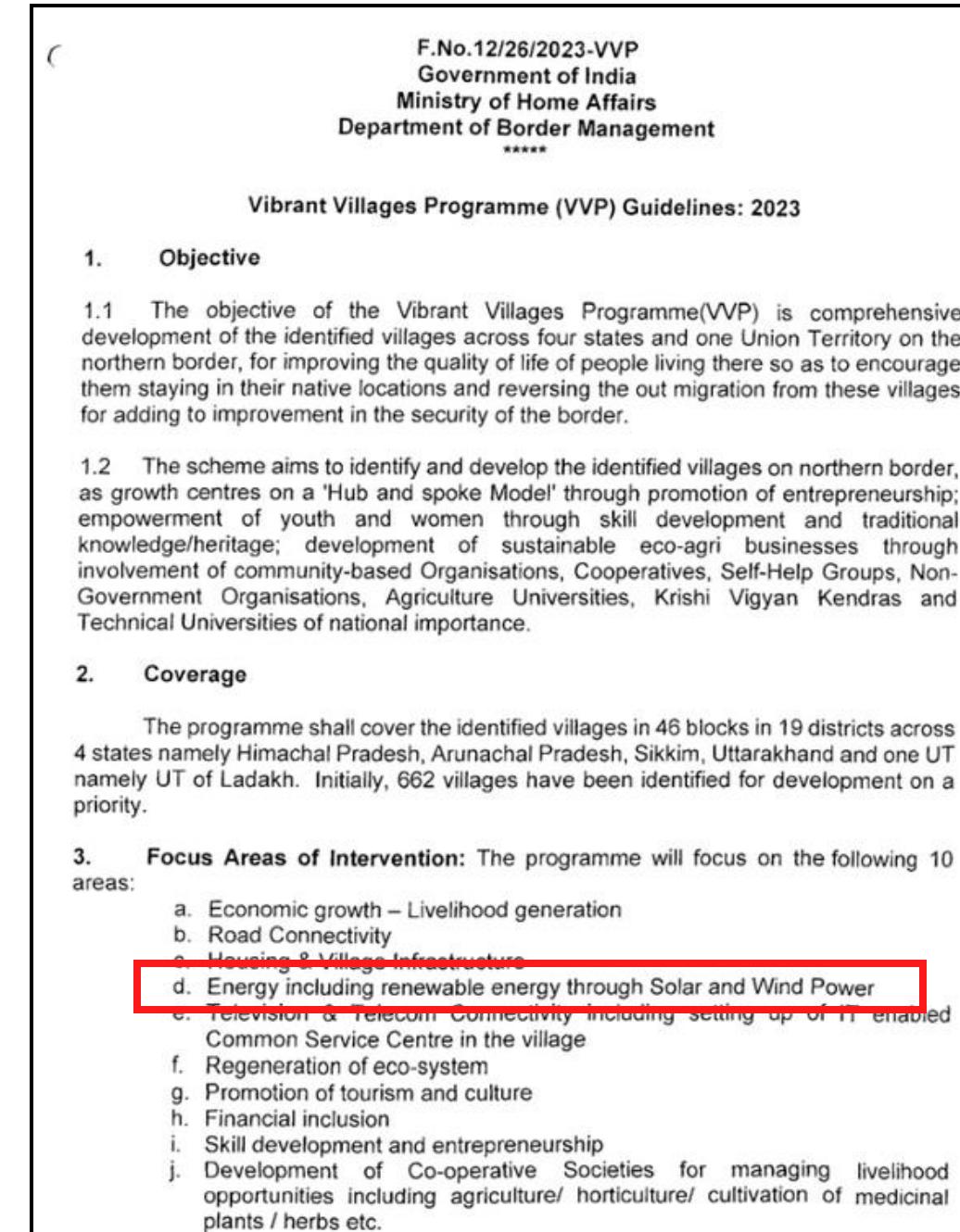
To
 1. All Central Government Ministries/ Departments
 2. Energy/ Power/ Renewable Energy Department of all States/ UTs
 3. All State Rural Livelihood Missions
 4. All State Nodal Agencies for Renewable Energy

Indicative List of DRE products				
Product	Machinery	Product Type	Motor	Capacity
Cold Storage/ rooms and Refrigeration	Solar Cold storages		AC compressor	4MT - 15 MT
	Bulk milk Chillers	Energy Efficient / Solar	AC compressor	500 litres - 1000 litres
	Solar Refrigerator/ Powered Deep Freezer	Powered Hybrid(Wind+Solar)	DC - 0.5 HP	100 litre - 20000 litre
	Walk-in cold rooms		2-5 Ton Cooling AC / DC	3MT- 8MT
Rice milling and processing	Cold rooms	Biomass powered (mainly thermal adsorption)	Very small PMDC	10MT - 15 MT
	Phase Change based Material Dryer	Energy Efficient / Solar Powered/ Hybrid(Wind+Solar)	20-25 (Kg/batch)	
	Solar Tunnel Dryer		NA	20-2000 (Kg/batch)
	Solar Cabinet Dryers	Solar Powered	NA	10 - 35 (Kg/batch)
	Conduction Dryer		NA	10 -100 (Kg/batch)
	Mini rice mills	Energy Efficient / Solar Powered/ Hybrid(Wind+Solar)	DC 2 HP	100 - 150 kg/hour
	Rice huller	Hybrid(Wind+Solar)	DC 0.5 HP	50-100 kg/hour
	Rice polisher	Energy Efficient / Can be DRE Powered/ Hybrid(Wind+Solar)	1.5 HP	50 -100 kg/hour
Millet and pulses processing	Mini mills	Energy Efficient / Solar Powered/ Hybrid(Wind+Solar)	2 HP	80-100 kg/hour
	Polishers		2 HP	100-120 kg/ hour
	Graders and Sorters		0.5 HP	0-100 kg/hour
Horticulture produce processing	Multi-purpose food processor	Energy Efficient / Can be DRE Powered	AC/DC 0.5 HP - 2 HP	100-200 kg/hour
	Three roller mini sugarcane crusher		AC/DC 0.5HP - 1 HP	100-200 kg/hour
Vertical Farming systems	DRE-enabled Climate-Controlled vertical farming systems.	Energy Efficient / Solar Powered Hybrid(Wind+Solar)	/NA	25-30 Kg per day
Irrigation	Solar submersible pump		AC/DC 1 HP - 10 HP	40,000 - 2,00,000

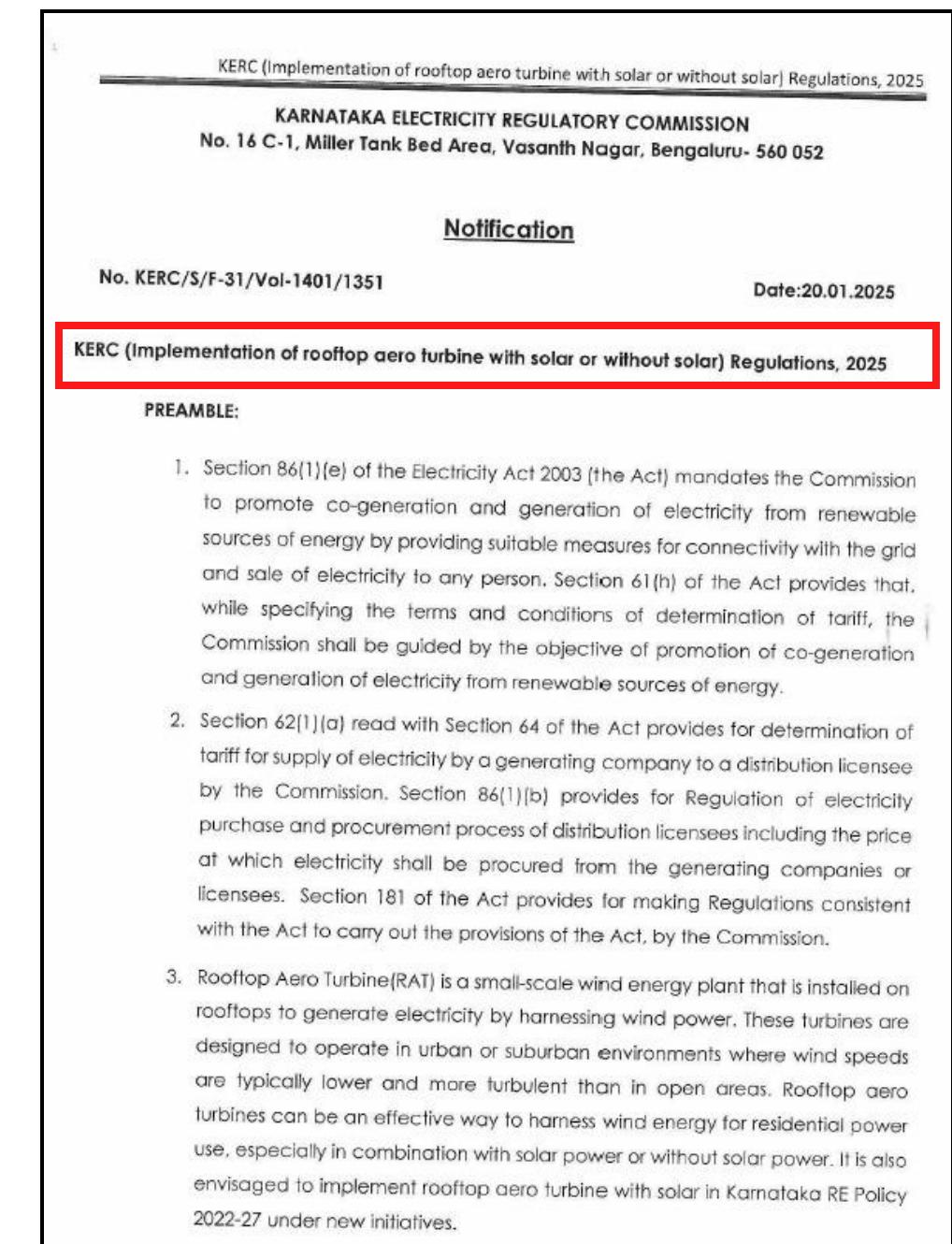
Government of India Schemes to impellent Wind Solar Hybrid Systems in various government projects



PM Surya Ghar Muft Bijili Yojana Policy Document



VVP Policy Document



Karnataka Gvt Policy Document



Dealer / Distributor Network

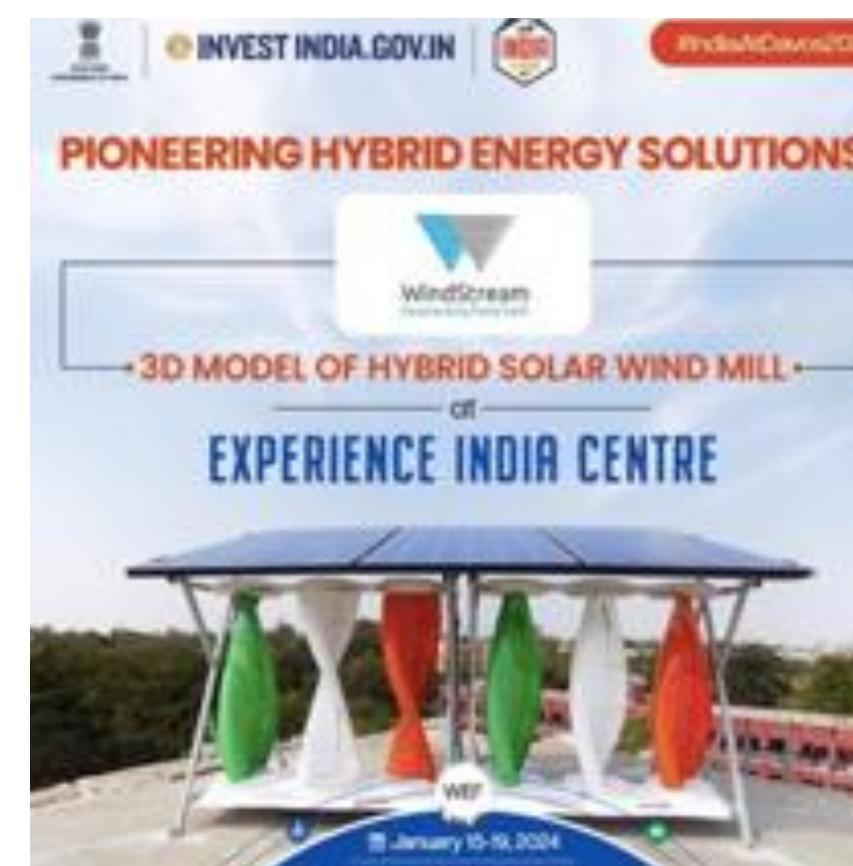
- Thailand
- Philippines
- Middle east
- East Africa
- Europe
- South Africa
- South America
- Saudi Arabia
- Somalia
- Libya



Recognitions and Accomplishments



Certificate of Excellence by All India Management Association (AIMA) presented to **Case Study** done on WindStream Energy Technologies, by **IIM Ranchi.**



WindStream was invited to be part of **World Economic Forum** by Govt of India, to Speak and also display **Solar Mill** at the 'India Sustainability Lounge' at **Davos WEF 2024**



WindStream's SolarMill in News

A large solar panel array is installed on the roof of Mumbai International Airport. Several vertical wind turbines (VAWTs) are standing behind the solar panels. The sky is overcast. The image is a photograph of a real-world renewable energy installation.

SAUR ENERGY INTERNATIONAL

HOME NEWS ▾ RESEARCH BY TOPICS EVENTS ENERGY JOBS TRAINERS

India's largest independent renewable energy news portal by SaurEnergy.com

Sanchi Stupa Welcomes 4kW SolarMill System by Windstream Energy Technologies

16 May 2013 | Updated on 16 May 2013

Highlights:

- The project was won by the firm via competitive bidding in a tender floated by the Madhya Pradesh Government. The mill will generate at least 2000kWh of wind energy and help power up the lights on the hill top.

SolarCity Sanchi, in further tapping into the benefits of renewable energy, has made an announcement, that affirms the state's resolution of giving a push to 15 the famous Sanchi Stupa, Madhya Pradesh has welcomed a pilot project of 4kW for solar-mill system installed by a provider of renewable energy products and solutions Windstream Energy Technologies K. P. India.



A group of approximately ten men in formal attire (suits and ties) are standing in a row in front of a large, complex blue metal structure, possibly a wind turbine or part of a solar/wind pumping system. They are posing for a group photo. The background shows a clear blue sky and some greenery. A banner is visible behind them, though its text is not clearly legible. The overall scene suggests a formal event, likely a press conference or project launch.

A group of people, including men and women, are standing behind a large solar panel array. They are holding up Indian flags and a pink banner that reads "WIND SOLAR HYBRID SYSTEM". The solar panels are mounted on a metal frame, and the background shows a railway platform with a white canopy.

SAUR ENERGY
INTERNATIONAL

HOME NEWS ▾ RESEARCH TV EVENTS ENERGY JOBS

Hyderabad Mumbai Delhi Bangalore Kolkata Chennai Agri Agartala Mysore Ajmer

OPINION DRIVE POLITICS SCHOOL & COLLEGES SECULARISM CULTURE REPORTER WEATHER VIDEOS PHOTOS

Health Watch [what is Vitamin B12 deficiency and how Polyclon Active helps](#)

[NEWS](#) / [REVIEWS](#) / [UNMISSABLE NEWS](#) / [Opinion](#) / [Editorial](#) / [Letters](#) / [Motors](#) / [Technology](#)

[+3 THIS STORY IS FROM MARCH 8, 2008](#)

Hyderabad company launches world's 1st hybrid freezer for vaccines

TMN / Updated: Mar 5, 2021, 09:30 IST

[+1 TWITTER](#) [+1 SHARE](#) [+1 PRINT](#)

ARTICLES

 [Hyderabad company launches world's 1st hybrid freezer for vaccines](#)

 [Australia extends its vaccine-freeze to manage its shortage of shells...](#)

 [ATB targets R100 again, this time over HAZMAT facility](#)



Comparison with other VAWTs and HAWT

Difference
Between WSTI
vertical Axis
Wind Turbine
and similar
Wind Turbines
from different
manufacturers



Difference
Between
Horizontal Axis
Wind Turbine
and Vertical
Axis Wind
Turbine at
different
heights



Other Recognitions

•‘New Small Wind Turbine Start-up Company & Innovation of Simple Modular Roof-Top SWES System’ from National Institute of Wind Energy (NIWE) of MNRE

•‘Most Innovative Energy Saving Product’ award for Excellence in Energy Management in event organized by Confederation of Indian Industry(CII) in 2015 and 2017.

•‘Best Electronics Manufacturing company’ from IESA (Indian Electronics and Semiconductor association of India) year 2017

•‘Entrepreneurship Excellence Award for year 2022’ at SuryaCon Kerala Annual Awards conducted by EQ Int'l Magazine

•Been invited to be part of [World Economic Forum](#) and Shortlisting of our product, SolarMill by Govt of India, to be displayed in India Sustainability Lounge at [Davos WEF](#), happening in Jan 2023

•‘Award of Excellence in New and Renewable Energy Development’ from [The Federation of Telangana Chambers of Commerce and Industry](#) (FTCCI) in July 2023

•‘Company of the Year’ Award’ in small scale Wind Solar Hybrid Category at [Suryacon](#) Hyderabad organised [EQ Int'l \(First Source Energy India Pvt Ltd\)](#), an International magazine on renewable energy.



HOLIDAY INN - 22nd December, 2022

ENTREPRENEURSHIP EXCELLENCE AWARD

Mr. Naga Venkata

Kannegowda Kumar Tangireddi

Managing Director

WINDSTREAM ENERGY TECHNOLOGIES INDIA PVT. LTD.

WindStream Energy

Decarbonizing Planet Earth





**Manufacturing Facility @
Cherlapally**
**Capacity of 3MW windmills per shift
per year ie 10MW Hybrid**

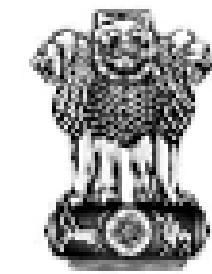


Government Affiliations - India

Business Affiliation:



Approvals From :



राष्ट्रीय ऊर्जा
Ministry of New and Renewable Energy
Government of India



नीवे NIWE



ARMY DESIGN BUREAU

Technology Affiliation:



Certifications from:



Few of our Government Clients



Few of our Prestigious Clients



Business Associates and Affiliations

- Philippine National Oil Company, Philippines
- Theos Corporation, Thailand
- Advanced Communications & Electronics Systems Company(ACES), Saudi Arabia
- La Afrique, Mauritius
- SCI, Tanzania
- Stratech, Guatemala
- S Makhanlal Consultancy Sdn Bhd , Malaysia
- Saura LLP, Dubai etc.,



Across The World



Contact Us



WindStream
Decarbonizing Planet Earth



**WindStream Energy Technologies
India Pvt Ltd.**

Plot. No. P-129, IDA Cherlapally, Phase 3,
Hyderabad, Telangana-500051



+91 998 994 5914



www.windstream.tech



sales@windstream.tech

