WindStream
Decarbonizing Planet Earth

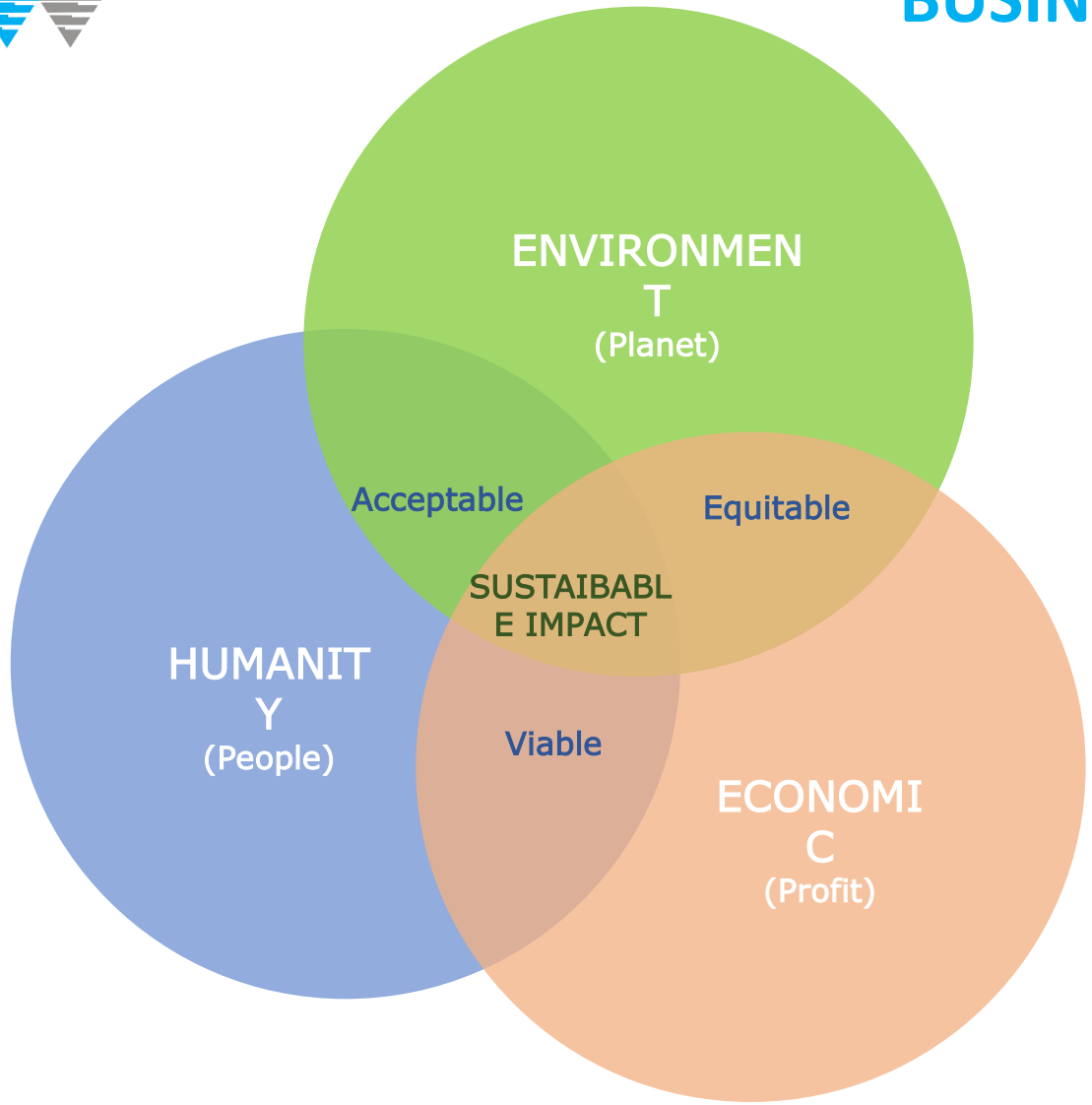
Presentation on
Globally Patented and Made in India Product
SolarMill and Its Solution
from
WindStream Energy Technologies India Pvt. Ltd.

BUSINESS PHILOSOPHY

Empower global communities and organisations through clean technologies and innovation that drives our Mission to "Decarbonize Planet Earth"

A GLOBAL APPROACH FOR REGIONAL GROWTH

BUSINES VISION



HUMANITY (People)

- Solutions for multiple applications
- Electrification Support to
  - Livelihood creation
  - Rural electrification
  - PHCs and cottage industries
  - educational institutions
- Engaging in national security

ECONOMY (Profit)

- Direct
  - Payback within short duration
  - Savings
- Indirect
  - Benefits to various sector through value engineered technology

ENVIRONMENT (Planet)

- Conserve non-renewable sources
- Zero carbon emissions
- Eco-friendly
  - Very low decibel sound
  - Aviary safe

Sustainable impact, by optimising triple benefits

The Company: Windstream Energy Technologies India Pvt Ltd

9 YEARS IN DECARBONIZING THE PLANET EARTH (INCORPORATED IN THE YEAR 2013)
WORLDWIDE PATENTS FOR TECHNOLOGY, DESIGN, AND FORM

2013

The first and only company in Southeast Asia, consistently offering unique hybrid-energy solutions since its inception, through installations even in challenging environments

FULL-FLEDGED IN-HOUSE MANUFACTURING FACILITY, CLOSE TO HYDERABAD INTL. AIRPORT, INDIA

2015

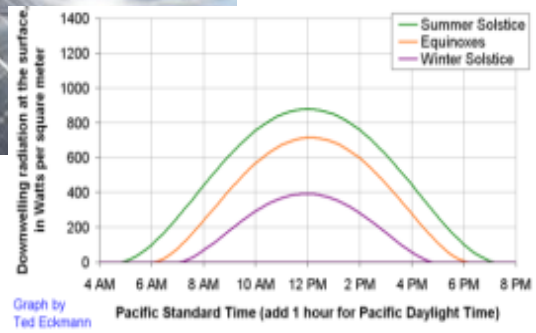
Products and process, adhere to international standards and certifications; recommended by several premier institutions and organizations in public sector, Product is **ISO certified, NIWE Certified, CE Certified etc**

EMERGED AS A PIONEER, ADDRESSING DIVERSE MARKETS AND ECONOMIES, WITH INSTALLATIONS IN 35 COUNTRIES

2022

Won numerous innovation and Industry awards for the path-breaking application, with endless possibilities

Solar and Wind Energy Advantages and Disadvantages



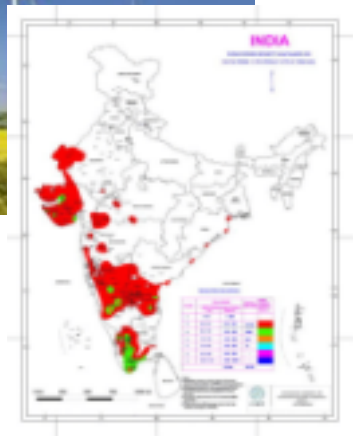
Solar Power:

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 - As storage is required for usage during non sunny hours.
- Seasonality.



Wind Power

Advantages

- Clean Source.
- Cost Effective.
- Use of Modern Technology.
- Rapid Growth and Huge Potential.
- Can be Built on Existing Farms.

Challenges:

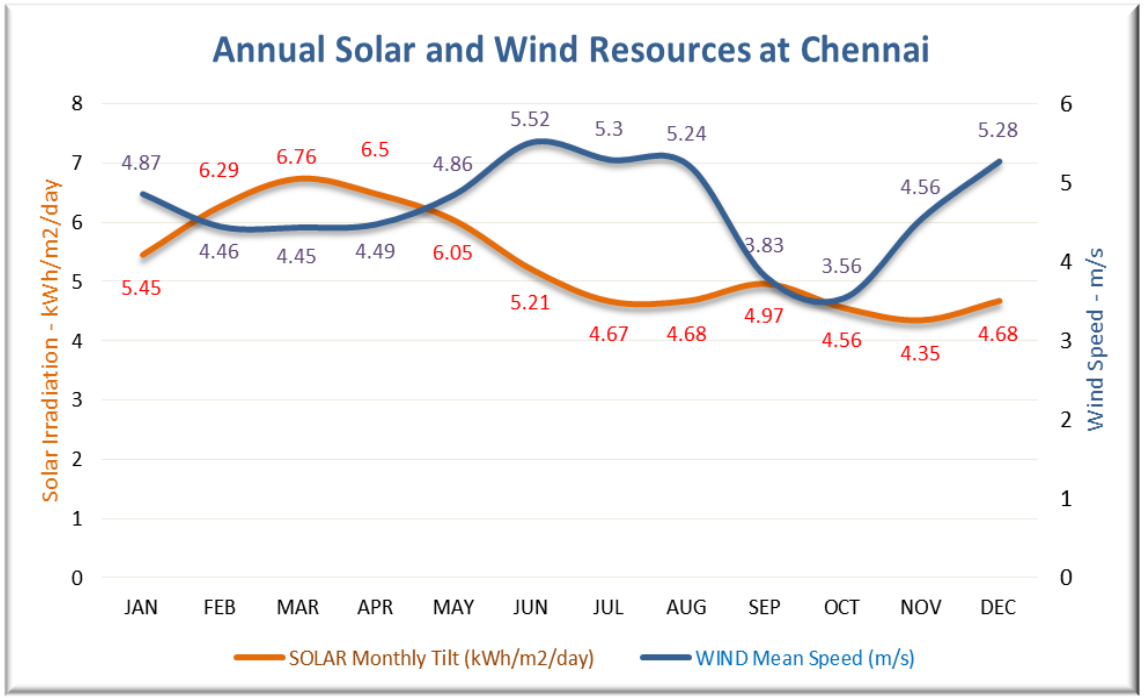
- Wind Reliability.
- Threat to Wildlife.
- Noise Pollution.
- Expensive to Set Up & Seasonality.
- Suitable for Certain Locations only.
- 4 states in India are suitable for high winds

Why Hybrid

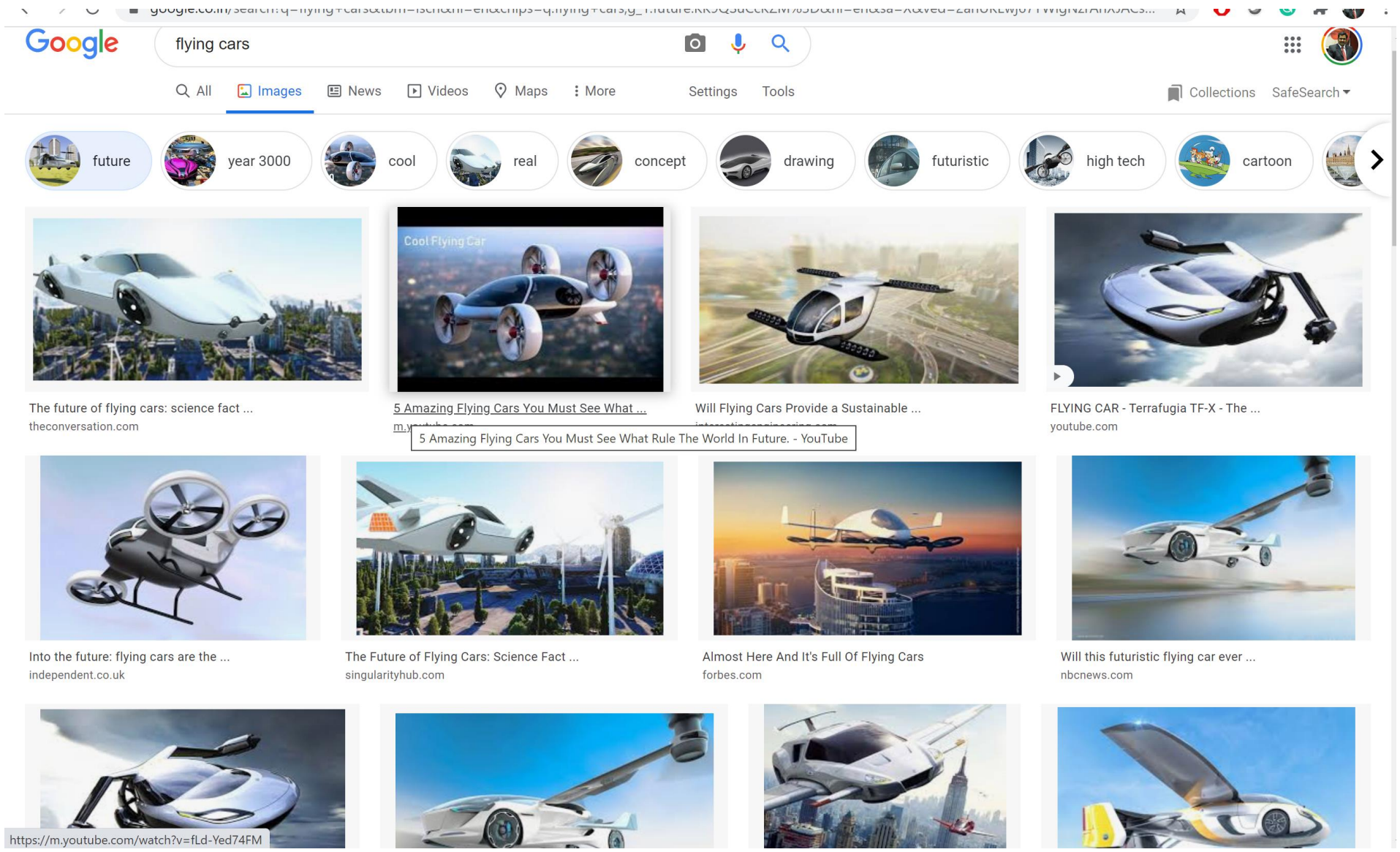
Advantages of Hybrid

- More energy density (more energy per sq. area)
- Best Suitable for Distributed energy
- Solutions can be custom designed based on the needs
- Prolongs Storage Life as there will be continuous power generation (smooth battery charging and discharging).

Typical Wind Solar Graph



Google: Flying Cars



Google: Wind Solar Hybrid Renewable Energy system

Google | wind solar hybrid renewable energy system

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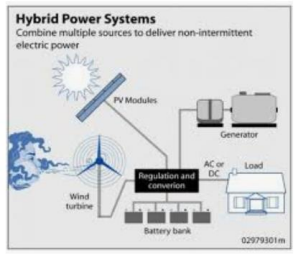
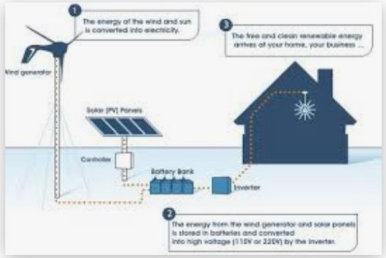
hybrid power system | wind farm | energy sources | solar power generation | optimization | solar panel | energy storage | wind turbines | block diagram

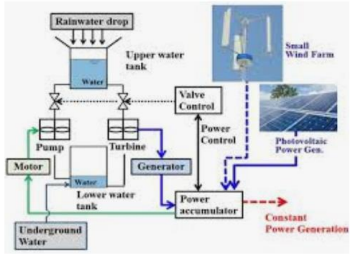


Hybrid Wind and Solar Electric Sy...
energy.gov

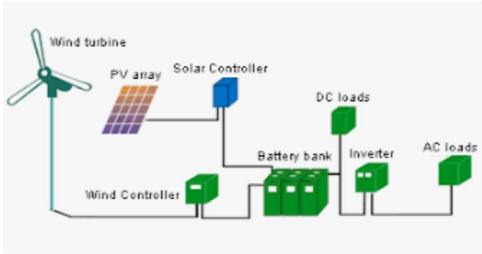
PV-Wind based hybrid renewabl...
researchgate.net



Hybrid energy | EcoPlanet Energy
ecoplanetenergy.com



Hybrid Renewable Energy ...
mdpi.com



Small Wind Solar Hybrid System ...
mahaurja.com

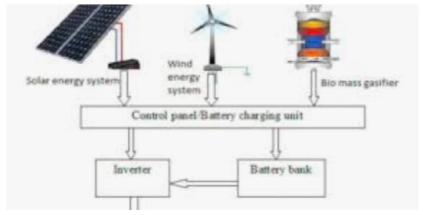
Solar Wind Hybrid Energy : Bangalore ...
lavancha.in

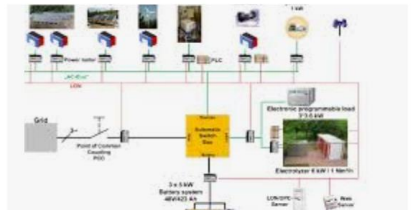
Largest hybrid renewable energy system ...
downtoearth.org.in

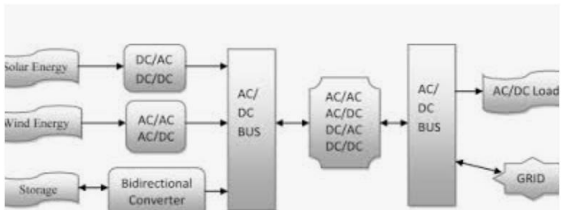
Low voltage ride through in grid ...
electrical-engineering-portal.com

Wind Turbines And Solar Panels: Hybrid ...
news.energysage.com

Hybrid energy | EcoPlan...
ecoplanetenergy.com





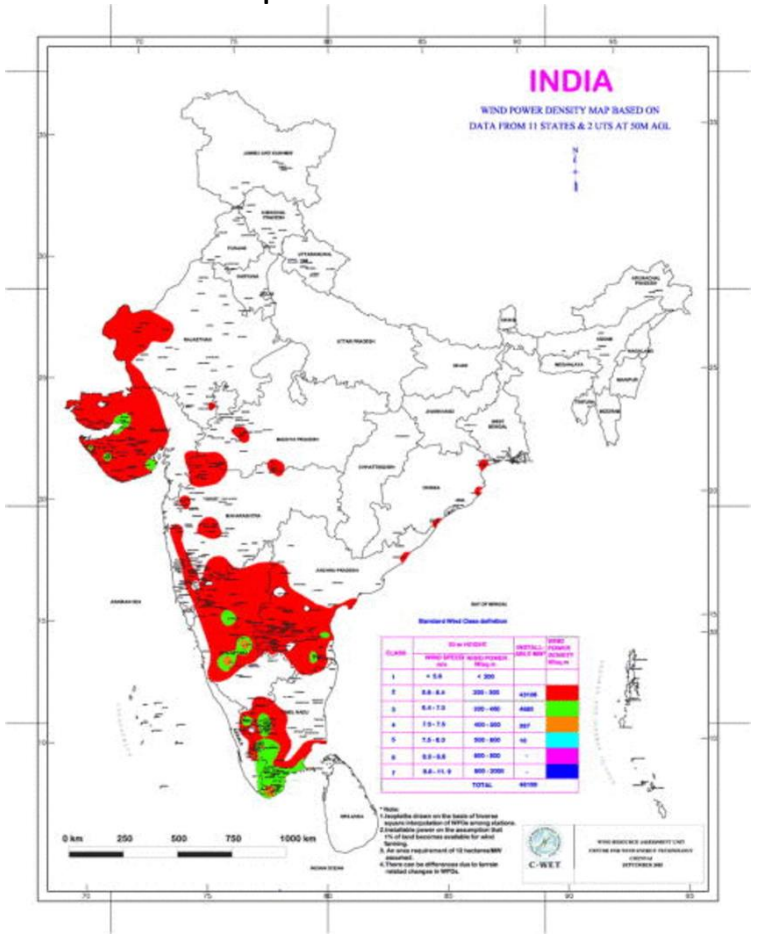


Problems of Small-Wind Solar Hybrid Solutions

Short Life(due Broken Tails)

Fire Due to High Winds (No Brakes)

Wind Speed Constraints



WindStream's Unique solution - SolarMill

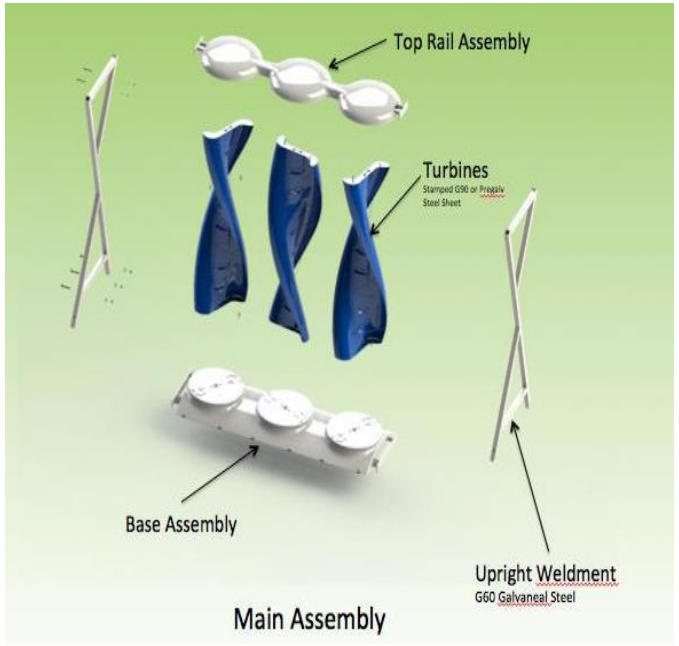
Advantages

- Simple ballasted installation that avoids roof penetration.
- Higher power density per square foot.
- Scalable power generation.
- Environment-friendly, silent operation.
- Best Suitable for Distributed energy
- Solutions can be custom designed based on the needs
- Increases the battery life & minimizes the battery storage capacity.
- Aesthetics

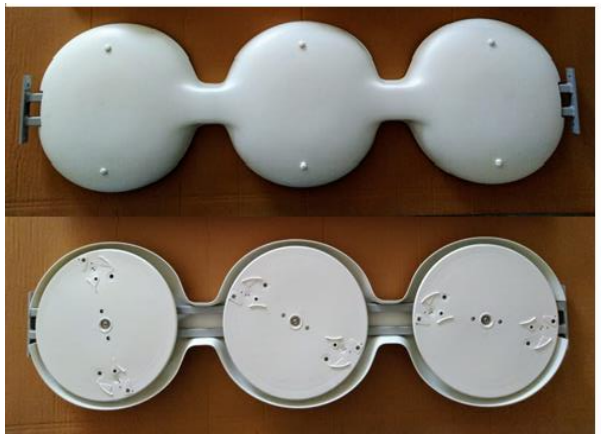
The simple, efficient & cost-effective Solution

- 3 Vertical-Axis Wind Turbines coupled to 3 permanent magnet generators.
- Automatic Mechanical Breaking.
- On-Board "Smart" Electronics include dynamic Maximum Power Point Tracking.
- Multiple Unit Interconnects.
- Easy Connection On-Grid and Off-Grid.
- Easy to mount on any rooftop.
- No complicated masts, guy wires, or towers.

SolarMill – Material and Construction



Permanent Magnet Generator



Top Rails

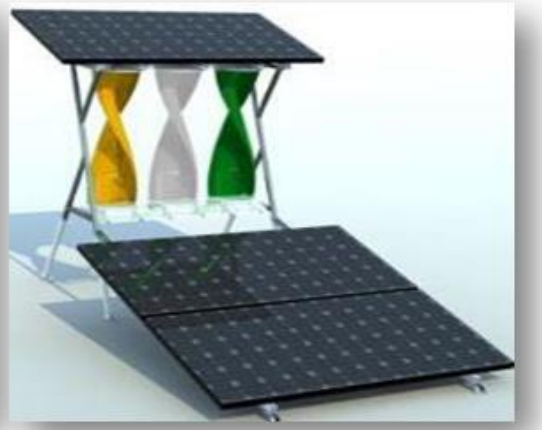
Bottom Rails

WindStream – SolarMill configurations

Scalable and Modular

SM1-1P (750W)

SM1-2P (1KW)



SM1-3P (1.25KW)

SM2-3P (1.75KW)

SM2-6P (2.5KW)

SM2-9P (3.25KW)

WindStream Product verticals

1. Tower Mill^{XL}
2. Rooftops
3. Mobile Mill™
4. SolarMill – EV charging
5. SolarMill – Fisheries
6. FloatMills ™
7. PowerMill™

New Products

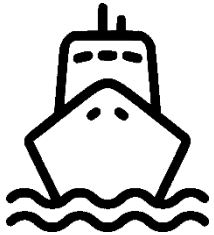
1. ChillerMill™
2. ChamberMills™
3. Solar/Hybrid Street Lights

Domains we are in:

Defence

Telecom

Railways



Marine Transport

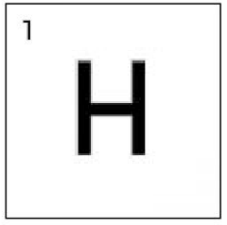
Fisheries

Rural Electrification

Healthcare

Agriculture

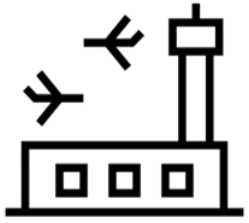
Education



Green Hydrogen

E-Mobility

Disaster Management



Aviation

Residential &Industry

Defence Solutions :

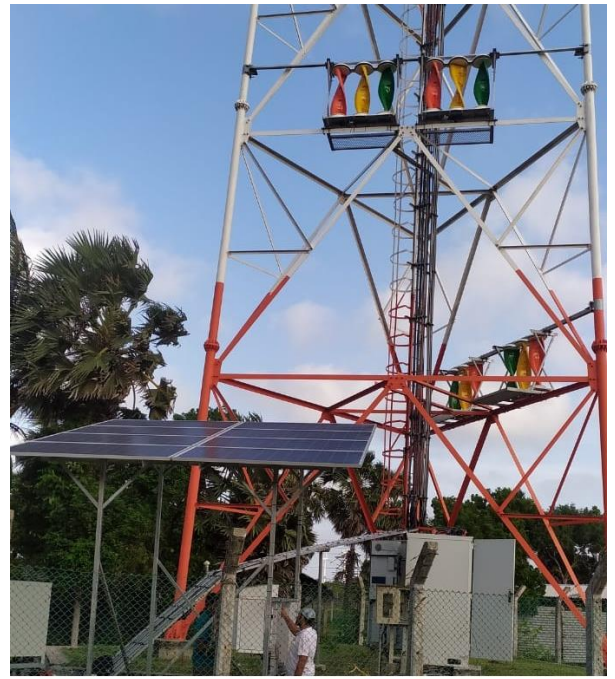
Solutions for Powering

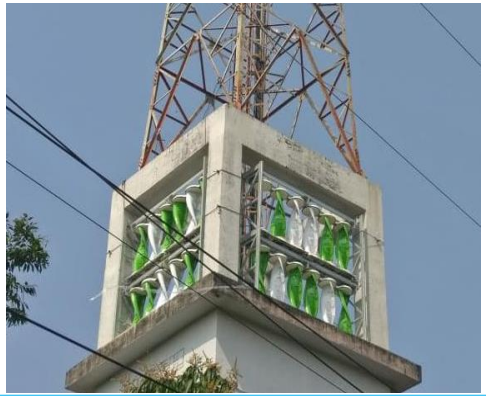
- Mini-Grid for Shelters
- Battery Charging Equipment
- Communication Towers
- Defence post
- Mobile Generator
- Security Tower

Telecom Solutions:

Solution that is:

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





Fisheries & Marine Solutions

Solutions for Powering:

- Fish Farming
- Boats and Ferries
- Freezers
- Water makers
- Ice plant
- Fishing villages

Railways

Solutions for Powering

- Station electrification
- Signalling
- Level crossing
- Railway offices

Rural Development & Health care

Solutions for Powering:

- Streetlights
- Hamlets
- Village electrification
- Cottage industries
  - Spinning
  - Weaving

Education

Solutions for Powering

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

Can also be used for

- Lab Demos
- Social experiments for students

Agriculture

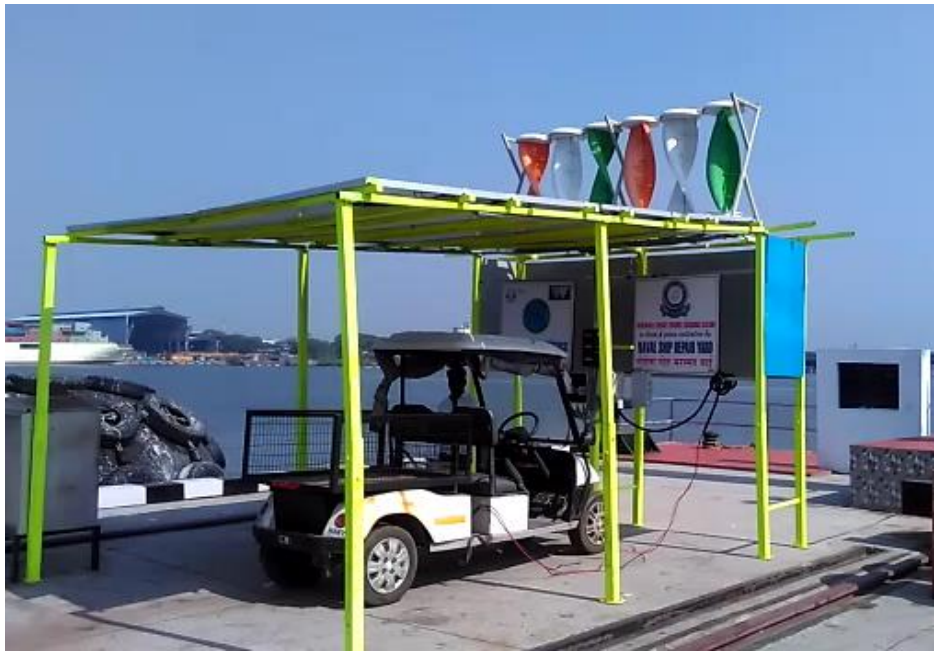
Solutions for Powering:

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

E- Mobility

Solutions for :

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



Aviation

Solutions for Powering:

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

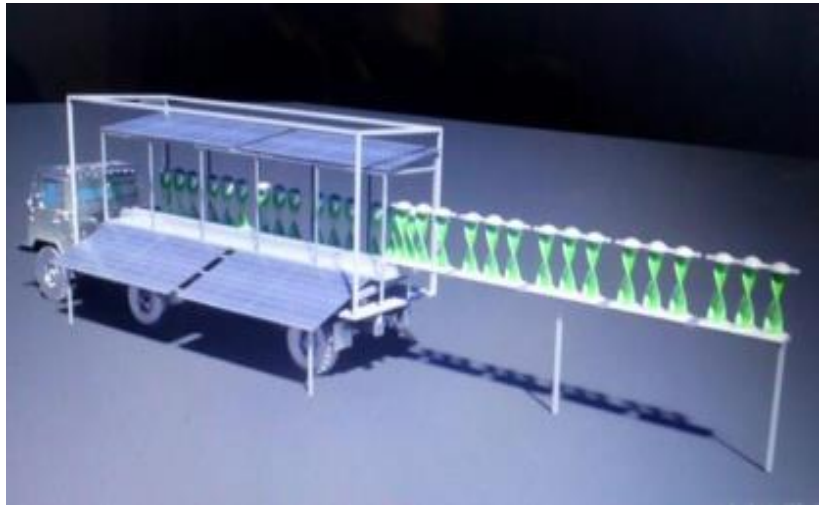
Mobile Power Plants

Solutions for Powering:

- Powering Defence exercises
- Tactical location

Solutions for :

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



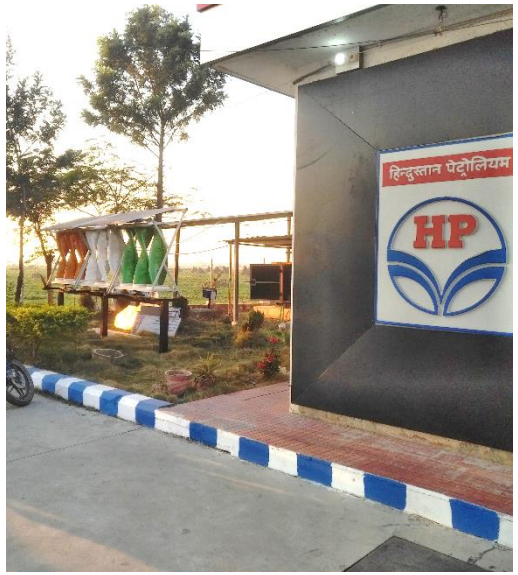
Business and Residential

Solutions for Powering:

- Non Critical loads
- Common lighting
- Street Lights

Solutions for

- On-Grid
- Off-Grid
- Net metering applications



Soon Will Be Powering for Generation of Green Hydrogen

Govt Of India and Industry affiliations

Business Affiliation:

भारत इलेक्ट्रॉनिक्स
BHARAT ELECTRONICS

GeM
Government
e Marketplace

Approvals From :

सत्यमेव जयते
Ministry of New and Renewable Energy
Government of India

राष्ट्रीय पवन ऊर्जा संस्थान NATIONAL INSTITUTE OF WIND ENERGY
नीवे NIWE

ADB
ARMY DESIGN BUREAU

Technology Affiliation:

राग्रावि पं रासं
NIRDPR

nimsme

Centre for Innovation and Agripreneurship (CIA)
MANAGE मैनेज
MANAGE, Hyderabad

Certifications from:

एन एस आई सी
NSIC
National Small Scale Industries Corporation

CII

IGBC

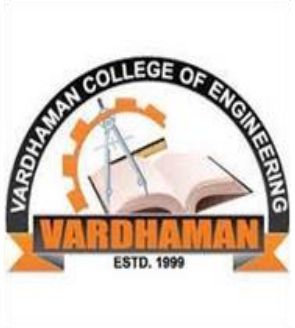
CERTIFIED ISO 9001:2015 COMPANY

QCI
Quality Council of India
Creating an Ecosystem for Quality

Academic affiliations

Mahatma Gandhi Institute of Technology (MGIT)

Chaitanya Bharati Institute of Technology (CBIT)



Vardhaman College of Engineering

TKR Educational Society

Projects being taken up:

- Design stabilization
- Study of Savonius wind turbine and its behaviour
- Usage of 3D printing in Wind Turbines
- Design and development of micro Generators etc.,

Awards and Accomplishments

Government Clients

Other Clients

TATA
TATA POWER
Mahindra
BOSCH
IGT
mantri
Kuwait Oil Company
e.co
enabling connectivity
adani
JPS
Jamaica Public Service Company Limited
CHANGING LIVES WITH OUR ENERGY
ENERGY INNOVATIONS
JAYABHERI
Capgemini
SCI
mobily

Across The World

- Indonesia
- Nepal
- Bangladesh
- Papua New Guinea
- Singapore
- South Korea
- UAE
- Saudi Arabia
- Lebanon
- Kuwait
- Philippines
- Bahrain
- Ukraine
- Khazkisthan
- Germany
- Japan
- Finland
- Italy
- Nigeria
- Malawi
- Myanmar
- Somalia
- Kenya
- Tanzania
- Mauritius
- India
- Sudan
- USA
- Canada
- Jamaica
- Malaysia
- Sri Lanka
- Haiti
- Honduras
- Argentina

35
Countries

400
Locations

2640
MW Hours

As on Mar 2022

CONTACTS

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WindStream
Decarbonizing Planet Earth

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Email: sales@windstream.tech
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