




Hybrid
Telecom Energy



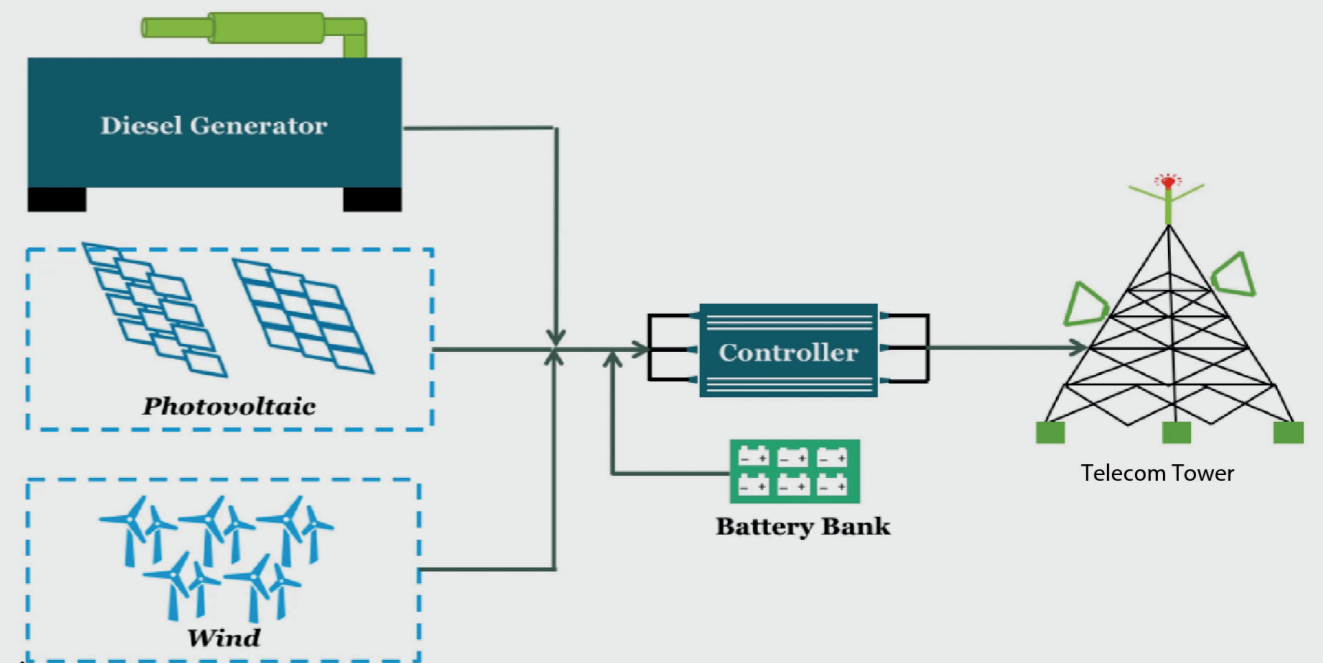
Network Base Station



Wireless Application



Off-grid network base stations



Turnkey Green Telecom Power System

Smart Telco

48VDC/36kW

Smart Telco is EnSmart Power's total hybrid turnkey green solution for telecom operators and combines Solar+Wind+Energy Storage and supports the integration of Diesel Generator as back-up. Specially designed to supply more energy and less operating costs to critical telecom applications in remote areas with unstable or no grid and aim to cut down carbon emissions. Smart Telco uses renewable energy preferentially, and schedules DG, grid, and battery to reduce operation time of DG and reduce the OPEX of telecom sites.



More Energy Less Cost

- Multiple Energy Inputs (Solar+wind+Storage+Genset)
- 98% High Efficiency
- High Efficiency Solar Module, 550wp - 21.3%
- Can be Integrated to Existing Generator Power Supply
- Opex Saving with Reduction in DG Operation by 80%
- Reduce CO2-Footprint, Noise and Air-Pollution

More Flexible

- Flexible Configuration of Solar/Wind Energy Supply Ratio, 30%-80%
- Flexible Genset Operating Modes, (Secondary or Standby)
- Lithium/SLA/AGM Batteries can be used to Store Energy

Powerful Energy Management

- Modular, N+1 Redundancy for Rectifier and Solar Charger
- Integrated Controller for all System Control
- Energy Management System for Remote Control

System Specifications

Cabinet

EMBEDED POWER SUPPLY

Rated Voltage	48V
Max Current	600A
Max PV Input	18000W
Max PV Array Short Circuit Voltage	450V
Wind Controller Power	1kW/2kW
Wind Controller Output Current	30A/50A
Diesel Generator Capacity (Optional)	7-22kVA
LLVD Breakers	125A/1P×2, 63A/1P×3
BLVD Breakers	32A/1P×3, 16A/1P×3
Communication	RS485, SNMP

CABINET

Inner Dimension	800mm (W) x 800mm (D) x 2030mm (H)
Outer Dimension	905mm (W) x 905mm (D) x 2335mm (H)
Base Height	200mm
Weight	<150kg (Excluding the Equipment and Battery)
User Space	45RU/19inch
Frame Material	Galvanized Steel Sheet
Panel Material	Pre-painted Galvanized Steel Sandwich Panel
Panel Thickness	1,5mm
Door Lock	Three-point Anti-theft Lock
Protection Level	IP55
Cable Inlet	8x50mm, Cable In and Out from Bottom
Temperature Controlling Mode	AC Air-conditioner
Working Voltage	220V/50Hz
Cooling Capacity	3000W@L35/L35
A/C Power	800W
Noise Level	60dB (A)

ENVIRONMENT

Operating Temperature	-10°C to +45°C
Storage Temperature	-40°C to +75°C
Operating Humidity	5%-95% (Non-Condensing)
Altitude	<4000m

Highlights



High Efficiency
98% Efficiency Rectifier and Solar Charger to make full use of DG, Grid, Solar



Multi Energy Inputs
Configuration Options for Energy Ratio of Solar, Wind, Genset

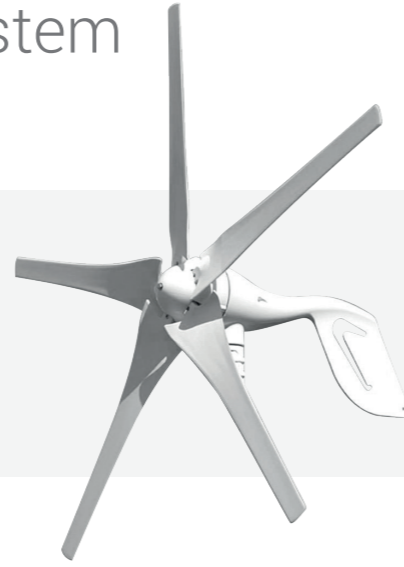


Highly Manageable
Energy Management System for Remote Control

Turnkey Green Telecom Power System

Wind Turbine Specifications

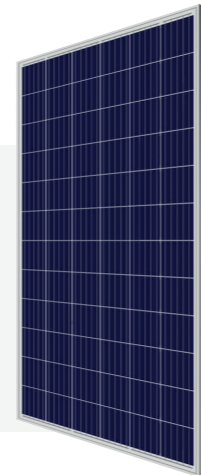
WindG 1200 Wind Turbine



Rated Power	1200W (at 12/s)
Type	3 Blades, Horizontal
Generator	Permanent Magnet, Brushless, Gearless, Maintenance-free
Blade Diameter	1.88m
Starting Wind Speed	3m/s
Charging Wind Speed (Approx.)	4m/s
Max. RPM	600
Breaking Mode	EM Brake
European Standards	CE, EN ISO 12000:2010

Photovoltaic Panel Specifications

SS550M10H-24/TH Mono Half-Cut High Efficiency PV Panels



Type	Monocrystalline 182 x 91mm
Rated power (Pmpp)	550W
Tolerance	0~ +5W
Rated current (Impp)	12.97A
Rated voltage (Vmpp)	42.4V
Short circuit current (Isc)	13.78A
Open circuit voltage (Voc)	50.2V
Module efficiency	21.30%
Module dimensions	2279 x 1134 x 35 mm

Generator Specifications

Ares AP Series Diesel Generator



Prime Power	7-22kVA
RPM	1500
Frequency	50/60Hz
Engine model	Perkins
Alternator model	Stamford
Cooling	Water Cooled
External tank	2000 liters

Battery Specifications

ELV-R Series Lithium Battery



Model	ENL-R 48100
Battery type	LFP
Nominal Voltage	48V
Nominal Capacity	100Ah
Total Energy	4800Wh
Max charge / discharge current	100Ah
Dimensions (W*D*H)	442 x 400 x 10.5mm
Weight	40kg
Cycle Life	>4000 (0.5C)
Designed Calendar Life	15 Years
Certification	CE, UN38.3

Turnkey Green Telecom Power System

Operation



Scenario

- Areas where sunshine duration fluctuates greatly in each month
- Areas having unstable grid, Solar energy acts a complement to the unstable grid
- Mountainous areas and isolated islands where the topography is complicated, and transportation is inconvenient
- Systems requiring high reliability requirements

Monitoring and Data Collection

