

RC 626222

OATS GLOBAL ENERGY

MINI
PROJECTS

OATS Global Energy



Oats Global Energy is focused on delivering efficient renewable energy solutions. Our experience in the design of electrical and mechanical systems is put into advantage in championing these solutions.

By partnering with leading globally active energy companies in the generation of reliable power from solar energy, Oats Global Energy hopes to deploy the latest solar technology in appropriate locations of Nigeria at competitive prices, helping to arrest the persistent power outages currently being experienced nationwide.

In addition, Oats Global Energy can partner and work closely with government agencies, private developers, project financiers and utility companies in providing solar power solutions for Nigerians in the following spectra:

- Residential applications
- Industrial and commercial uses
- Public Utilities
- Rural and remote locations

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Overview

In this profile, our products and their application have been elaborated to specify all individual, commercial/ Industrial and rural needs or projects, keeping in mind the Green solution and environmental-friendly principles.

Our residential solar and energy power solution can power your refrigerator, washing machine, microwave, lights, fan, television and air conditioner. We have different models of products and solutions for individual homes and apartments with modules ranging from 600VA to 30kVA.

We also design to your budget and give you technical advice to suit requirement. Our design will give you the flexibility of a mixed system of PV installations with Grid power supply.

We can collaborate with residential property developers during the design stage for effective and overall efficiency of installations. Since orientation plays a major role, your requirement can be optimized if we are involved at the design stage.

From pocket calculators to sophisticated telecommunications equipment, Photovoltaic (PV) systems are a viable and cost-effective power source for many industrial uses. PV power now costs only a fraction of what it once did. Oats-Global Energy will always fit into your budget. Our solutions guarantee uninterrupted power supply with low power consumption products.

For power needs growing up to few kilowatts, we are positioned to render solar solutions that meet your need. Our Industrial PV applications include:

- Telecommunications solutions covering BTS/Microwave/Radio and TV towers, wireless phone repeater towers, computer servers, radio-controlled valves used on oil and gas pipelines, weather stations and remote data-logging equipment.
- Bus stop/Train station, Airports, Offices, Warehouses and Supermarket lighting solar solutions.
- Solar lighting systems for road maintenance warning signs, security lights, billboard lighting, gate openers and street lightings.
- Solar water heating and pumping systems for boreholes.

OATS Global Energy can provide solar solutions for rural communities or remote homes. We are able to do rural electrification of two types:

- Centralized Power Distribution at Community Level or
- Distributed system with each house provided with standard solar home system module

Our engineers are available to conduct an assessment on your existing infrastructure in order to meet your budget.

Solar Water Pumping



Photovoltaic (PV) systems are used to pump water for livestock, plants or humans. Since the need for water is greatest on hot sunny days the technology is an obvious choice for this application. Pumping water using PV technology is simple, reliable, and requires almost no maintenance.

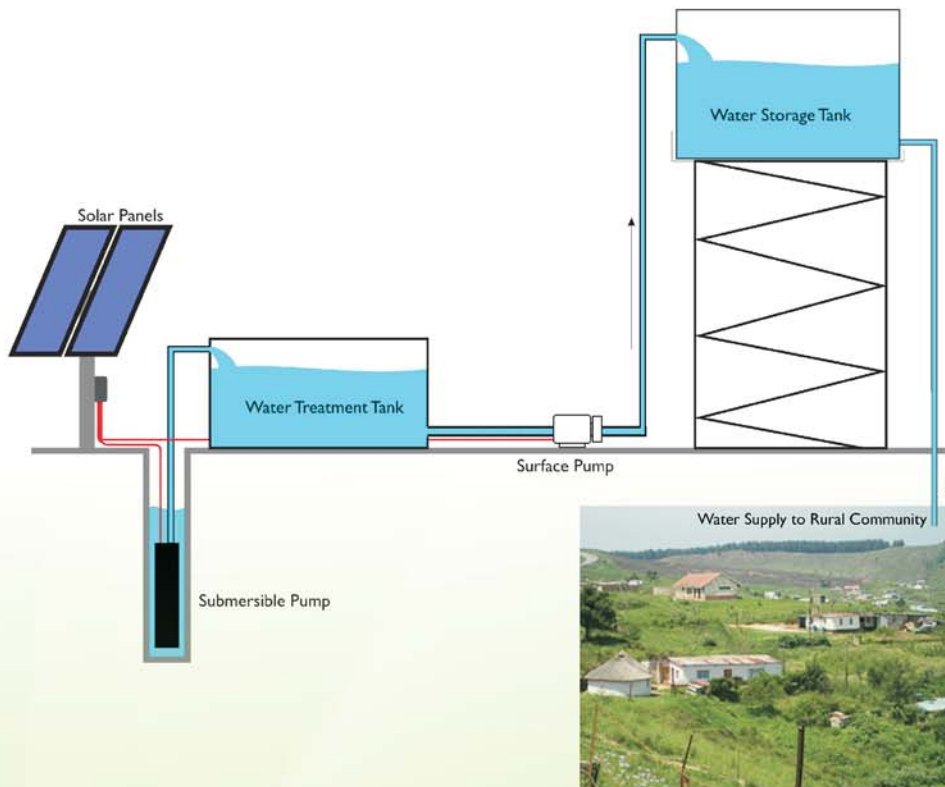
Our Solar powered water pumping systems are similar to any other pumping system, only the power source is solar energy. PV pumping systems have, as a minimum, a PV array, a motor, and a borehole pump. Solar water pumping arrays are fixed mounted or sometimes placed on passive trackers (which use no motors) to increase pumping time and volume.

We also have mobile water pumps that can be towed to any location. They are excellent for rural communities, camps and other temporary but remote outdoor activities where water is needed.

Solar Water Pumping

APPLICATIONS

Rural Water Projects



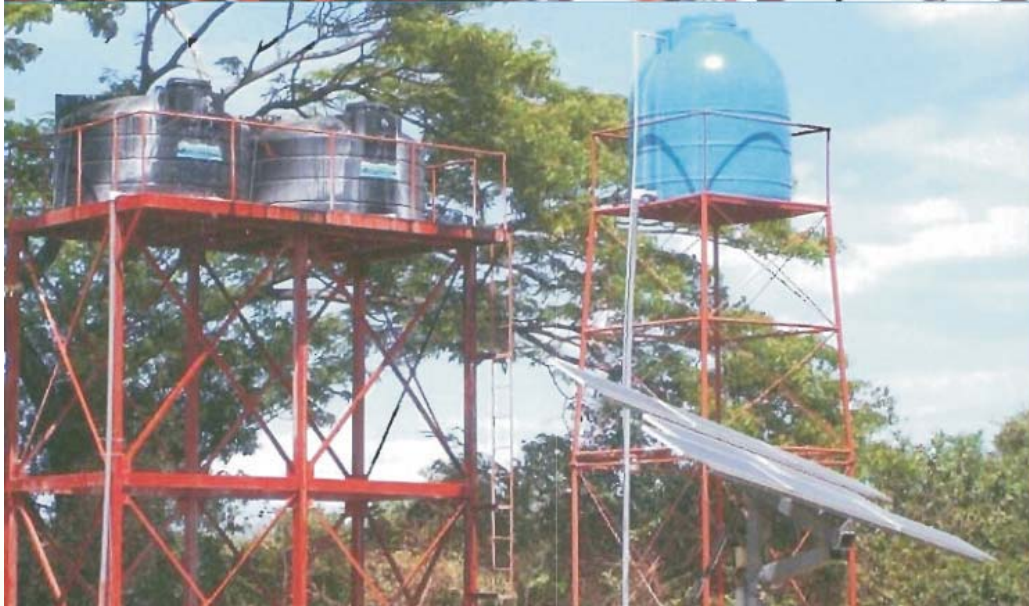
A typical application of our solar water pumping system is in the provision of pipe borne water to rural communities, health centres, schools and sub-urban areas.

It is ideal for state governments that are committed to rural development but have limited options due to the non-proximity of the villages from the electricity grid supply.

The installation may include a separate water treatment tank as a option.

Solar Water Pumping

APPLICATIONS



Large Stationery PV Water Pump with Tracking System. With the tracker the solar water pumping system can harness the sun's power efficiently and provide more energy in areas of low solar irradiation.



Our Mobile PV Water Pumping System is ideal for situations where the pumping system is required in several locations. It is also a perfect solution for installations where security of the system is a major concern

Solar Water Pumping

PRODUCTS

Submersible Pumps



Characteristics

- High reliability and life expectancy
- Helical rotor or centrifugal pump, brushless motor
- High resistance to sand and corrosion
- Fits 4" and larger well casings

Application

- Deep well pumping
- Drinking water supply
- Livestock watering
- Irrigation (pressurised and non-pressurised)
- Pond management
- Irrigation etc.

PS150 C

lift up to 22 m
flow rate up to 5.0 m³/h
12-24 V DC nominal voltage

PS200 HR/C

lift up to 50 m
flow rate up to 2.7 m³/h
24-48 V DC nominal voltage

PS600 HR/C

lift up to 180 m
flow rate up to 11 m³/h
48-72 V DC nominal voltage in solar operation
48 V DC in battery operation

PS1200 HR/C

lift up to 240 m
flow rate up to 21 m³/h
72-96 V DC nominal voltage in solar operation
72-96 V DC in battery operation

PS1200 range is designed for 6-8 modules in series for a 72-96 V nominal array. This higher voltage system will allow much smaller wire sizing, decreasing system installation cost and weight. Up to 1.5 kWp can be connected

PS1800 C

lift up to 50 m
flow rate up to 22 m³/h
72-96 V DC nominal voltage

PSk series

lift up to 150 m
flow rate up to 63 m³/h
Vmp 500-600 VDC

PS4000 C

lift up to 170 m
flow rate up to 55 m³/h
Vmp > 230 VDC



**PS600
BADU
Top 12**

flow rate up to 15 m³/h
simple installation

Surface Pumps

Solar Water Heating



Our Solar water heating systems use solar panels, called collectors, fitted to your roof. These collect heat from the sun and use it to warm water which is stored in a hot water cylinder.

A boiler or immersion heater can then heat this water further until it reaches the temperature set by the cylinder's thermostat. (This should be set at 60 degrees centigrade.)

Some of the benefits of solar water heating include:

- Hot water throughout the year: the system works all year round, especially in areas with good solar irradiation.
- Cut your bills: sunlight is free, so once you've paid for the initial installation your hot water costs will be reduced.
- Cut your carbon footprint: solar hot water is a green, renewable heating system and doesn't release any harmful carbon dioxide or other pollutants

Solar Water Heating

APPLICATIONS



Domestic: Flats, Bungalows and Apartments.

Commercial: Hotels, Hospitals, Hostels and Dormitories.

Industrial: Process Industries, Preheating boiler feed water.

In domestic sector, hot water is used for bathing, washing of clothes & utensils etc. The requirement may, however, vary with the season of the year & number of family members. Our study shows that an average 30 to 35 litres of water at 50 to 55 degC is consumed by an individual. Thus for a family of 4 members, 125 Litre-per-day Solar Water Heating System is quite sufficient.

In commercial & industrial sectors, where large quantity of water is required at fairly high temperature, Our Solar water heaters are designed to meet the above requirement. Depending on the distribution pattern of hot water, the system could be either modular or a big capacity single tank system.



Pool heating is a very good solar application. The systems are simple and relatively inexpensive. The pool itself is the thermal storage for the system, and the pump you already use for filtering pool water will also circulate water through the solar collectors.



Solar Water Heating

PRODUCTS



FLAT PLATE TYPE

Features

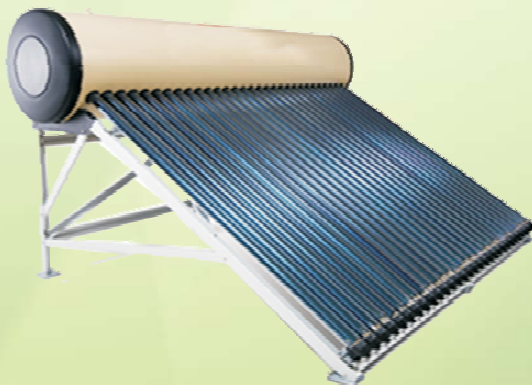
- High efficiency 9 fin collector
- Selective coated Copper-Copper collector; copper absorber laser welded to copper riser tube.
- Collector box made of specially extruded aluminum sections, powder coated
- Brass flared inlet and outlet flanges
- 4mm thick, toughened glass front glazing
- Resin bonded rockwool insulation
- EPDM rubber grommets and gaskets
- Collector area @ 2 sq.m

Hot Water Tank

- Stainless steel SS 304/316 tank, 1 or 2 mm depending on capacity.
- PUF / Rockwool insulation
- 'SMART' tank shape (100, 200 & 300 Litres per day Zing models only)
- Stainless steel or power coated galvanised iron outer cladding, plain or stucco finished.
- Sacrificial anode to prevent galvanised corrosion
- Back heater for heating water on cloudy or low sunlight days

Product Range

Hermosyphon & forced flow systems for domestic, commercial and industrial applications ranging from 100 to 3000 Litres per day



EVACUATED TUBE COLLECTOR TYPE

Features

- Concentrated borosilicate glass tubes 1500 x 47 mm; vacuum between tubes
- Graded Al-Ni/Al magnetron sputtered absorptive coating
- Heat loss coefficient < 0.85W/sq.m/degC
- High impact resistance
- 14 tubes per 100 LPD system

Hot water tank

- SS 304 Non-Magnetic or Mild steel with Ceramic/ Glass Coating from inside
- Insulation PUF 55 mm thick
- Back heater for heating water on cloudy or low sunlight days

Product Range

Standard sizes for domestic application from 100 to 500 Litres per day. Larger capacity systems/forced flow systems using tube manifolds

Off-Grid Solar Solutions



Our solar generators don't rely solely on the Sun. All of our systems can be charged by grid power, or with a traditional generator on those days that the sun does not shine. And with only a handful of moving parts, few things will ever have to be replaced during the units' life.

The beauty of our solar generators lies in their simplicity.

Even though the original cost for a solar generator is higher than some diesel generators, it will save you money in the long run. These units will last longer, require less maintenance, and don't rely on increasingly expensive fuel.

With solar panels designed to withstand extreme weather, and inverters built to stand up to rugged conditions, these solar generators will go the distance and perform for decades. Owning a solar generator is very beneficial, whether you're saving money on fuel or simply showing your customers that you care about the environment.

Off-Grid Solar Solutions

APPLICATIONS

Home Application

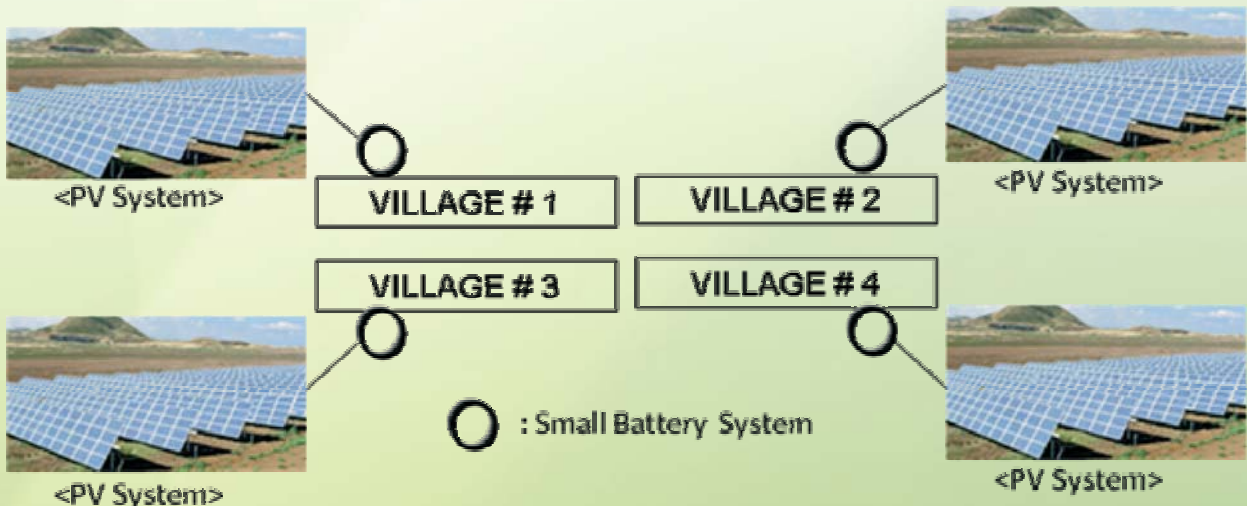


Solar electricity works exactly the same as the electricity you buy from the utility company. You turn on lights, plug in lamps and power appliances the same way you do right now. In fact, if you didn't see solar modules on the roof, you'd never notice any difference except a lower electric bill.

There are two basic components in our Off-Grid Solar Solution,

1. Solar Module: Sunlight falls on the modules, which contain silicon solar cells. The energy in the sunlight is absorbed by the cells and frees electrons which flow along the array wiring. Electricity is the flow of electrons.
2. Control Box: This consists of the charge controller, inverter and circuit breakers

Remote/Rural Electrification



Our off-grid solar solutions also include provisioning of centralized and de-centralized packages for rural and remote communities. We can provide small solar power plants of up to 3MW

Off-Grid Solar Solutions

PRODUCTS



Solar Panels	200Wp
Inverters	High frequency pure sine wave
Batteries	Deep Cycle Batteries (100 - 200Ah)
Charge Controllers	4.5 to 60 Amp Solar controllers
Control Box	Steel box of zinc-plated and lacquer-coated

Solar Street Lighting



Solar Street Lights for commercial quality lighting systems, residential streets, parking lots and security lighting using high quality of solar systems.

The applications for solar powered outdoor lighting systems are endless. These units can be used for: Security and safety lighting, rural area lighting, Dock lights, Park lighting, Parking lot lighting, Parkway lighting, Walkway lighting, Street lighting, Transit Lighting, Outdoor area lighting, Military and civil security and so on. The costs of trenching and installing underground wiring often make a solar street lighting system an economically feasible lower cost option.

Solar Street Lighting

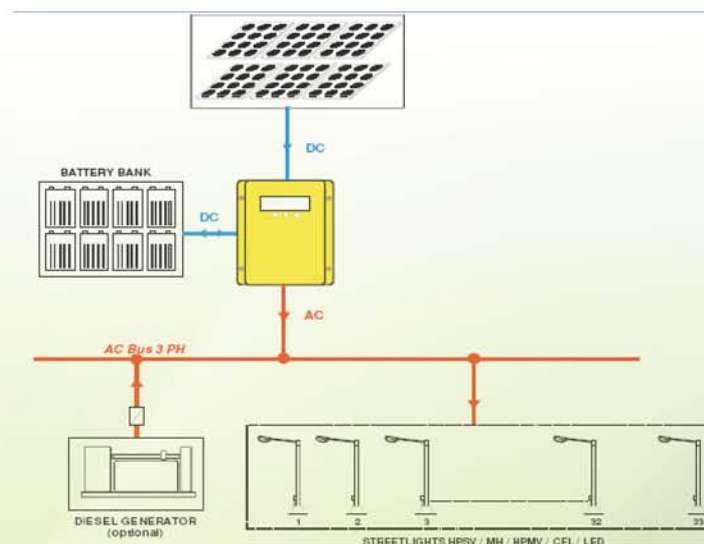
APPLICATIONS

The Solar Street light Islands

The Solar Street light Islands consist of a centrally located Solar Power Plant feeding a group (a string) of street lights. Solar Panels and Batteries are therefore not required on individual street light pole.

This concept can be applied where:

- Security is a concern
- A refitting of existing hardware is possible
- Higher Wattage lamps are required



Key Benefits of the Solar Streetlight Island

- Only the solar panels of the solar power pack need be installed in a clear shade free area. The streetlights can be installed / located anywhere.
- Ease of maintenance and safety of assets since the panels, batteries & BoS components are at a central location
- System output is 230VAC allowing user flexibility in lamps to be used
- Should the inverter fail, the load can be operated on an auxiliary supply
- During periods of inadequate sunshine, the batteries can be charged on aux AC supply.

Solar Street Lighting

APPLICATIONS

Stand Alone Systems



Our Solar Street lights are also available as standalone systems for:

- Highways
- Motorways
- By-Lanes & Secondary Roads
- Townships
- Parking Areas
- Industrial Yards
- Intersections
- Rural Electrification

Solar Street Lighting

PRODUCTS

Compact Fluorescent Lamps

Our range of Compact Fluorescent Lamps based solar street lights are a cost effective option to provide non critical lighting. The Compact Fluorescent Lamp of the Solar Streetlight gives out warm white light with good colour rendering characteristics.

The standalone solar photovoltaic street lighting system comprises of a compact Fluorescent Lamp (CF Lamp) as light source, re-chargeable lead acid battery for storage, PV modules for charging the battery, suitable electronics for the operation of the lamp and safe charging and discharging of the battery and mechanical hardware for fixing these sub systems.

The solar streetlight is available either with automatic dusk to dawn operation or with a pre-set timer; and in 4 models depending on the wattage of the lamp, SPV module & battery capacity.

Key Highlights:

- Modular Design
- Low cost of ownership
- No trenching, tunnels or cost to rip up and repair/re-landscape site
- Virtually maintenance free

Benefits of Solar Streetlights

- No trenching, tunnels or cost to rip up and repair/re-landscape site
- Virtually maintenance free
- No electrical wiring cost to/from power grid, meters required
- No power company bills or charges to bring electricity to site
- Weather and corrosion resistant
- Custom-designed for your location and requirements
- Clean and independent source of power



Features

- Energy efficient compact fluorescent lamp that emits white light
- Instant Lamp turn ON
- Field adjustable lighting controls
- Automatic dusk to dawn operation with internal seasonal time variation compensation
- Automated micro-electronic illumination
- Pre assembled kits that can be easily attached to poles with suitable foundations.

Lamp	SSL-4A	SSL-4B	SSL-4C	SSL-4D
Light Sources	CFL	CFL	CFL	CFL
Lamp Wattage	9W	11W	18W	22W
Lumens	500	900	1000	1800
Lamp head	Weatherproof outdoor type			
Power Supply				
Solar Panel	75Wp	80Wp	120Wp	120Wp
Battery	12V 75Ah	12V 80Ah	12V 100Ah	12V 120Ah
Charge controller	PWM Controlled with battery undercharge and overcharge protection			
Ballast	Full potted water resistant electronic ballast			
Battery Enclosure	GI or Aluminium suitable for outdoor installation			
Operating Voltage	12V	12V	12V	12V
Operation	Automatic Dusk to Dawn or timer controlled			
Autonomy	3days no sun			
Mounting				
Pole	4 m	4 m	4 - 6 m	6 m
Lamp Height	4 m	4 m	4 - 6 m	4 - 6 m
Arm	0.5m or as specified by customer			

Solar Street Lighting

PRODUCTS

High Density Lamps

Our High Density Lamp is a unique solar powered HiD street light solution, an attractive and highly cost effective alternative to conventional lighting especially for new infrastructure development. These lamp provides clear visibility,unparalleled security and safety for the motorist. They are immune to power outages and are environmentally friendly,an ideal solution for lightening roadways like.

- Highways
- Motorways
- Secondary Roads

It comes along with complete design and installation tailored to your requirements. All our street lights are integrated using state of the art components from the leading solar systems manufacturers.



Key Highlights:

- Modular design.
- Low cost of ownership.
- No trenching,tunnels,or cost to rip and repair/ re- landscape site.
- Virtually maintenance free.
- Proprietary ballast & reflector.

Benefits of Solar Streetlights

- No electrical wiring costs to/ from grid,meters required.
- No power company bills or changes to bring electricity to site.
- Weather and corrosion resistant.
- Custom designed for your location and requirements.
- Clean and independent source of power.

Features

- Patented HiD Arc lamps that emit white light with excellent colour rendering features
- Instant Lamp turn ON
- Field adjustable lightening controls
- Maximum area illumination
- Automatic dusk to dawn operation with internal seasonal time variation compensation
- Superior lamp head with full cut off optics & dark sky compliant
- Automated micro-electronics illumination (does not use a photocell)
- Pre assembled kits that can be easily attached to poles with suitable foundations.

Lamp	
Light Source	HiD Arc Lamp
Lamp Wattage	38W / 50W
Lumens	3600 / 5400
Lamp head	'Cobra head' with cut off optics; Protection Class IP 55
Power Supply	
Solar Panel	Crystalline Si 130 Wp
Battery	12V 100 Ah sealed maintenance free
Charge controller	12V 20A; PWM Controlled; Battery deep discharge and overcharge protections
MPPT Charge Controller	Optional
Ballast	Full potted water resistant electronic ballast
Battery Enclosure	Weather proof Aluminium with front access
Operating Voltage	12V DC
Operation	Automatic Dusk to Dawn or timer controlled
Autonomy	3days 'no sun'
Mounting	
Pole	GL 8m
Lamp Height	7m
Arm	Gl 0.5 m to 4 m

Solar Street Lighting

PRODUCTS

LED Lamps

Our LED range of solar streetlights uses state of the art Energy Efficient LED Lamps that deliver bright white light.

The standalone solar photovoltaic street lighting system comprises of a high efficiency LED Lamp as the light source, re-chargeable lead acid battery for storage, PV modules for charging the battery, suitable electronics for the operation of the lamp and safe charging and discharging of the battery and mechanical hardware for fixing these sub systems.

The solar streetlight is available either with automatic dusk to dawn operation or with a pre-set timer; and in 4 models depending on the wattage of lamps, SPV module & battery capacity.

Key Highlights:

- Modular design
- Low cost of ownership
- No trenching, tunnels, or cost to rip and repair/ re-landscape site
- Virtually maintenance free.

Benefits of Solar Streetlights

- No trenching tunnels, or costs to rip up and repair/ re-landscape site
- Virtually maintenance free
- No electrical wiring costs to/ from grid, meters required
- No power company bills or changes to bring electricity to site
- Weather and corrosion resistant
- Custom designed for your location and requirements
- Clean and independent source of power



Features

- Highest luminous efficiency
- Field adjustable lightening controls.
- Automatic dusk to dawn operation with internal seasonal time variation compensation
- Automated micro- electric illumination
- Pre assembled kits that can be easily attached to poles with suitable foundations.

Lamp	SSL3A	SSL3B
Light source	LED	
Lamp Wattage	25W	50W
Lumens	1512	2150
Lamp head	Aluminium die cast; Protection Class IP 66 (nom.)	
Power Supply		
Solar Panel	SSL 3A-80 Wp	SSL 3B 160 Wp
Battery	SSL3A 12V 100Ah	SSL 3B 12V 180 Ah
Charge controller	PWM Controlled with battery undercharge and overcharge protection	
Ballast	Full potted water resistant electronic ballast	
Battery Enclosure	GL or Aluminium suitable for outdoor installation	
Operating Voltage	12V	
Operation	Automatic Dusk to Dawn or timer controlled	
Autonomy	3days no sun	
Mounting		
Pole	4 - 6 m	8 m
Arm	0.5 m or as specified by customer	6 - 8 m

Solar Street Lighting

PRODUCTS

SoX Lamps

Our range of Low Pressure Sodium Vapour Lamp based solar streetlight is a cost effective option to provide lighting in traffic and pedestrian areas.

They are immune to power outages and are environmentally friendly, an ideal solution for lightening roadways like.

- Motorways
- Secondary Roads
- By- Lanes

The yellow/ orange light of the SoX lamps is ideal for locations prone to fog or haze. The standalone solar photovoltaic street lighting system comprises of a SoX Lamp as the light source, re-chargeable lead acid battery for storage, PV modules for charging the battery, suitable electronics for the operation of the lamp and safe charging and discharging of the battery and mechanical hardware for fixing these sub systems.

Key Highlights:

- Modular design
- Low cost of ownership
- No trenching, tunnels, or cost to rip and repair/ re- landscape site
- Virtually maintenance free.

Benefits of Solar Streetlights

- No trenching tunnels, or costs to rip up and repair/re-landscape site
- Virtually maintenance free
- No electrical wiring costs to/ from grid, meters required
- No power company bills or charges to bring electricity to site
- Weather and corrosion resistant
- Custom designed for your location and requirements
- Clean and independent source of power



Features

- Highest luminous efficiency SoX lamp (200 lumen/Watt) more light in less power
- Automatic dusk to dawn operation with internal seasonal time variation compensation
- Pre assembled kits that can be easily attached to poles with suitable foundations.

Lamp	SSL2A	SSL2B
Light source	Low Pressure Sodium, Vapour SoX	
Lamp Wattage	18W	26W
Lumens	1800	3700
Lamp head	Full or Semi cut of optics; Protection Class IP55 (nom.)	
Power Supply		
Solar Panel	75Wp	80Wp
Battery	12V 100Ah	12V 120Ah
Charge controller	PWM Controlled with battery undercharge and overcharge protection	
Ballast	Full potted water resistant electronic ballast	
Battery Enclosure	GL or Aluminium suitable for outdoor installation	
Operating Voltage	12V	
Operation	Automatic Dusk to Dawn or timer controlled	
Autonomy	3days no sun	
Mounting		
Pole	5m	7 m
Arm	0.5 m or as specified by customer	

Power Inverter Solutions



Power inverter is a system solution whereby it is used as a back up power device that facilitates continuity of electricity when the mains power fails. They are supported by batteries as power source when charged by the main electricity supply when it is available. They come in use when power fails by converting the DC power produced from the batteries to meet the AC load requirement, acting as an emergency back up or power supply for long hours according to customer specifications. This also depends primarily on the rating and type.

An inverter solution has a wide range of application covering home and office equipment.

Power Inverter Solutions

APPLICATIONS

Uninterruptible Power Supply for Homes and Offices



With our Inverters you can provide backup & power for your lights & home appliances which include Air conditioners, Televisions, Refrigerators, Computers etc.

Critical Applications



Our Inverters can serve as backup power in emergency or critical situations in Hospitals etc.

Back Up Power for Displays



Backup power for LCD Displays (used for adverts etc) can be provided by our Inverters ensuring/guaranteeing uninterrupted power.

Power Inverter Solutions

PRODUCTS



600VA

Display: LED
Waveform: Modified Sinewave
Input range: 110 - 310 V
DC Input: 10.5 - 14.2 V

Efficiency > 92%
Charger Current: 6.5A
Protections: Overload, Short Circuit



800VA

Display: LCM
Waveform: Sinewave
Input range: 90V - 290V
DC Input: 21 - 28.4V

Efficiency > 92%
Charger Current: 10.0A
Protections: Overload, Short Circuit



1400VA

Display: LCM
Waveform: Sinewave
Input range: 90 - 290 V
DC Input: 21 - 28.4 V

Efficiency > 92%
Charger Current: 10.0A
Protections: Overload, Short Circuit



3kVA

Display: LED
Waveform: Pure Sinewave
Input range: 110 - 295V
DC Input: 40 - 55.2V

Efficiency > 82%
Charger Current: 10.0A
Protections: Overload, Short Circuit



5.5kVA

Display: LED
Waveform: Pure Sinewave
Input range: 110 - 295V
DC Input: 80 - 114V

Efficiency > 82%
Charger Current: 10.0A
Protections: Overload, Short Circuit



8kVA

Display: LED
Waveform: Pure Sinewave
Input range: 110 - 295V
DC Input: 124 - 150.2V

Efficiency > 82%
Charger Current: 10.0A
Protections: Overload, Short Circuit



10kVA

Display: LED
Waveform: Pure Sinewave
Input range: 110 - 295V
DC Input: 160 - 233V

Efficiency > 82%
Charger Current: 10.0A
Protections: Overload, Short Circuit

Engineering and Design

Our Engineering Design Team is made up of proven engineers who are experts in their fields. We have the capabilities to design to your specifications. OATS Global Energy can take your project through all the necessary phases, from customer verbal specification, to written specification, to design and all the way through construction and commissioning. We have the expertise to deliver quality design services.

Our approach is always customized to meet the specific requirements of our customers. At OATS Global Energy, our attention to detail and quality ensures our work will always meet and often times exceed our customers' expectations. Our projects are supervised by professional engineers to ensure success and customer satisfaction.

QUALITY ASSURANCE POLICY

We are proud to produce work of high quality, within the programmed time, to standards greater than expected by our Clients, Consultants and Communities.

We adopt the principle of "First Time Right". We are committed to ongoing learning and will continuously improve our standards and work processes. The Directors, Management and Staff of the OATS GLOBAL ENERGY LTD. are committed to the implementations, maintenance and continual improvement of a documented quality system.

The quality control system is an internally created process based document which is specific to the methods and best practices implemented by the company, conforming to recognized QA principals. Through the implementation of the Quality Control Systems, we are able to provide customers with a consistent service, which complies with contract specifications.

The implementation and maintenance of the system is institutionalized through the following:

1. A quality control department, which performs internal quality audits.
2. "Key performance indicators" measurement of all management staff.
3. Internal and external customer evaluations.
4. Leadership assessment on an annual basis of all management.
5. Quality control testing by the externally qualified laboratories.
6. Commitment of all staff to total quality management.

