



THE POWER OF CLEAN ENERGY SMART SOLAR SOLUTIONS

ECO-FRIENDLY ENERGY AROUND THE WORLD

PIONEERING SOLAR PROJECTS AT INTERNATIONAL STANDARDS

PV Energy Limited actively shifts the world away from the use of polluting fossil fuels toward a cleaner power supply. By combining sustainable technologies with attractive returns on investments PV Energy Limited provides, eco-friendly and bankable solutions for its global clients and partners.



■ PV ENERGY ■

- A member of The meeco Group -



CORE BUSINESS

- Developing and implementing clean energy business strategies and governmental programs.
- Creating and financing bankable renewable energy projects.
- Deploying efficient, reliable renewable energy capacity.
- Providing a range of management services to ensure ongoing operational and financial success.



“Climate change is a global concern. Many are now successfully integrating eco-friendly and reliable energy solutions within their social and economic infrastructure for a greener future.

We must reduce carbon emissions, engage with investors, governments and businesses to ensure environmental sustainability.”

Peter Virdee,
Chairman of PV Energy Limited

OUR MISSION

CLEAN AND PROFITABLE ENERGY

Our mission is to serve the world with clean, sustainable and affordable energy. Being on the forefront of creating and developing highly customised solar power generation and storage solutions we contribute to a greener and cleaner environment. By keeping the financial profitability in mind, we consider it our commitment to reduce carbon emissions worldwide. With our long-lasting experience in the field of renewable energy investments we develop flexible and tailor-made clean energy solutions while providing attractive returns on investments for our clients and partners.



BENEFITS OF SOLAR ENERGY

INDEPENDENCE FROM UNRELIABLE GRIDS AND DIESEL PRICES

To satisfy the massive and steadily increasing hunger for energy, diverse energy supplies have been established. In contrast to the fossil power sources, which are limited and polluting, renewable energies like the sun represent an unlimited and clean solution. The sun – as a tremendous and free energy reservoir – is ideal for the generation of power and offers a lot of benefits. The production of electricity can be realised directly at the place, where the energy is needed. Investors are totally independent from fluctuating electricity or diesel prices and an unreliable energy supply caused by grid failures.



THINKING GLOBAL – ACTING LOCAL

ECONOMIC GROWTH WITH RENEWABLES

Together with our local partners and through already plenty of fruitful projects, we are successfully ensuring effective climate protection at both local and global level. We are working with a variety of clients from developed and emerging countries, willing to increase their energy efficiency and reduce their emissions of greenhouse gases. In order to respond to all country-specific needs, we bank on our global network of subsidiaries. A deep bond ties us with our customers: the steady endeavour to reduce fossil fuel dependency and carbon footprint. Present on five continents, we are part of the solar powered community and share the same core values.

Environmental and social sustainability is a key component of our business ethic. With the aim of spurring economic growth by creating affordable clean energy, we are deeply committed to save resources for the present as well as for future generations. Particularly, the reliable renewable energy supply for educational facilities have a crucial impact on the socio-economic development of states. To help educational institutions taking control of their energy budgets and combat the universal challenge of global warming, PV Energy Limited has been providing during the past years customised solar power generation and storage solutions for schools in emerging countries. The challenge of bringing students and teachers out of the dark is an effort necessary for an improved quality of life ensuring stability and progress and finally allowing those schools to focus and spend more on their real priority – educating young people.

Furthermore, we involve local partners in building and maintaining clean energy solutions. In the long run green energy investments will create even more jobs than fossil fuels. Therefore, capacity building has become one of PV Energy Limited's main priorities. Being an international enterprise, we are committed to hire locally, share our passion and expertise and boost the professional skills and qualifications of our partners in every market.



Grammar School in Antigua

Socio-economic improvement through solar energy



Cecilia's Restaurant in Antigua

Achieving energy independence with sun2go xl



Clean Energy Study Tour across Europe

One-week training program organised for Caribbean partners

CORE SERVICES

- **Strategic consulting:** renewable energy policy assessments, solar (PV) program development, etc.
- **Project services:** tax and accounting implications, contract and financing structure, etc.
- **Financial advisory:** due diligence for project finance, access to debt and equity funds, etc.
- **Asset management:** bookkeeping and tax filing, electricity sales, insurance, etc.

OUR SERVICES

PROJECTS AT THE HIGHEST STANDARDS

The process of building a solar energy installation differs from state to state and from customer to customer.

Due to distinct legislations, funding programmes and financial preconditions the planning and implementation of an energy turnkey solution requires profound knowledge, expertise and time. With our long-lasting experience and our large international network we find the best customised solution for every scenario.

We work with our Principals, partners and investors to make sure every aspect of our clients' needs are met.



INVEST INTO GREEN

MAKE YOUR MONEY WORK UNDER THE SUN

The decision to acquire a solar energy solution is not only a question of environmental sustainability but also of a promising investment with attractive returns. Investing into a photovoltaic installation means getting involved in a long-term and low risk investment, as the sun represents an unlimited and boundless source of energy, unlike fossil fuels.



Green conscience



Constant development



Low operating risk

The solar energy sector offers numerous profitable opportunities for investors that would like to take part in solar projects and thus, benefit from financial profits without having to forego industry standard returns. PV Energy Limited is experienced in the field of financial advise and seeks for the best and most bankable renewable energy project for each client. To support our investors in the financial and planning process we manage all the administrative formalities, from the very beginning of identifying a suitable project to the final commissioning.

SOLAR ENERGY TURNKEY SOLUTIONS

SWISS DESIGN AND GERMAN ENGINEERING

With our wide range of diligently developed and tested solar energy generation and storage products, we address the requirements of vastly different customer groups, such as individuals, businesses, communities and utilities. By identifying the best energy generation and storage solution for our clients, we tackle the most challenging and remote environments and make power generation and energy storage possible anywhere. PV Energy Limited combines top-tier technologies from Germany as well as other European countries with excellent implementation services whilst always fostering high innovation in both products and processes. Suitable from on-grid to off-grid use our solar energy turnkey solutions are highly customisable and match diverse energy requirements.



sun2live

Power production & storage system

Small-to-medium scale power generation and storage solution for grid-connected and off-grid use. Fully reliable high-end solar power generation designed for hotels, households and businesses.



sun2go

Portable solar energy solution

PV-based portable power supply comprised of a foldable PV module and a wheeled trolley containing a battery, inverter, charge controller, cooling fan and air filter.



sun2safe

Energy management system

Fully integrated power conversion, storage and management system, which can be used in combination with any kind of power production. Equipped with remote service and monitoring facilities.



sun2water

Off-grid water treatment

Solution to purify and desalinate various sources of water with solar power generation. State-of-the-art battery storage and inverters, GSM and web-based monitoring.



sun2com

System for telecommunication

Custom designed off- as well as on-grid solution to power remote and inner-city telecommunication sites. The installation can substitute the use of fuel generators.



sun2light

Solar LED lighting

Sustainable outdoor as well as indoor lighting solution run by solar power. Combination of LED lights with photovoltaic modules, a battery bank and a smart lighting controller.



sun2flow

Water pumping solution

Connection of high-end solar modules with proven water pumping and irrigation devices. Ideal solution to pump water for irrigation or cattle needs in off-grid areas.



sun2grow

Photovoltaic greenhouses

Specially designed greenhouses using frameless and integrated PV modules or non-integrated rooftop PV modules. High energy production and optimal cultivation conditions.



sun2live

ENERGY GENERATION & STORAGE

sun2live ENSURES 24 HOURS POWER SUPPLY

PRODUCT FEATURES

- Two standard sizes: 6 kW / 16 kWh and 12 kW / 32 kWh
- Standard and custom solutions can incorporate a variety of:
 - Battery sizes, capacities, and technologies
 - Power inverter and charge controller sizes and brands
 - Wind turbine, hydro power and fuel generators

With the aim to create a clean energy system for a reliable 24 hours power supply PV Energy Limited developed the power generation and storage solution sun2live. Suitable for both grid-connected and off-grid use sun2live combines three components: Photovoltaic modules, batteries and an inverter. Distributed in different sizes the sun2live fits for small-to-medium scale projects and provides electricity to households, businesses and communities.

sun2live utilises photovoltaic as the primary energy source. The solar modules can be mounted on the ground or a roof. To ensure a reliable energy supply during cloudy or night-time conditions the produced energy can be saved through our variety of power storage technologies.

PRODUCT BENEFITS

- Reliable electricity on-demand
- Wide range of power and storage capacity (1-100 kWp, 3-30 kWh)
- Seamless switching between output sources to eliminate power interruptions
- Engineered to be installed quickly and operated/maintained easily
- Online 24/7 performance monitoring to maximise uptime

Level 1
Relation to grid



Grid-connected



Off-grid

Level 2
Installation surface



Ground



Rooftop

Level 3
Installation size

6 kW
16 kWh

12 kW
32 kWh

custom



INTELLIGENT POWER MANAGEMENT VERSATILE SUSTAINABILITY

As the costs of fossil fuels are increasing, investors and homeowners are more and more interested in finding smart and green energy solutions. PV Energy Limited's central energy storage and management system sun2safe is perfectly suitable for customers, who want to reduce their reliance on diesel or the electrical grid. The sun2safe is a fully integrated power conversion and management system, which can be used with multiple energy sources, such as the sun. The combination of our solar power generation system sun2live with the sun2safe

sun2safe

PRODUCT FEATURES

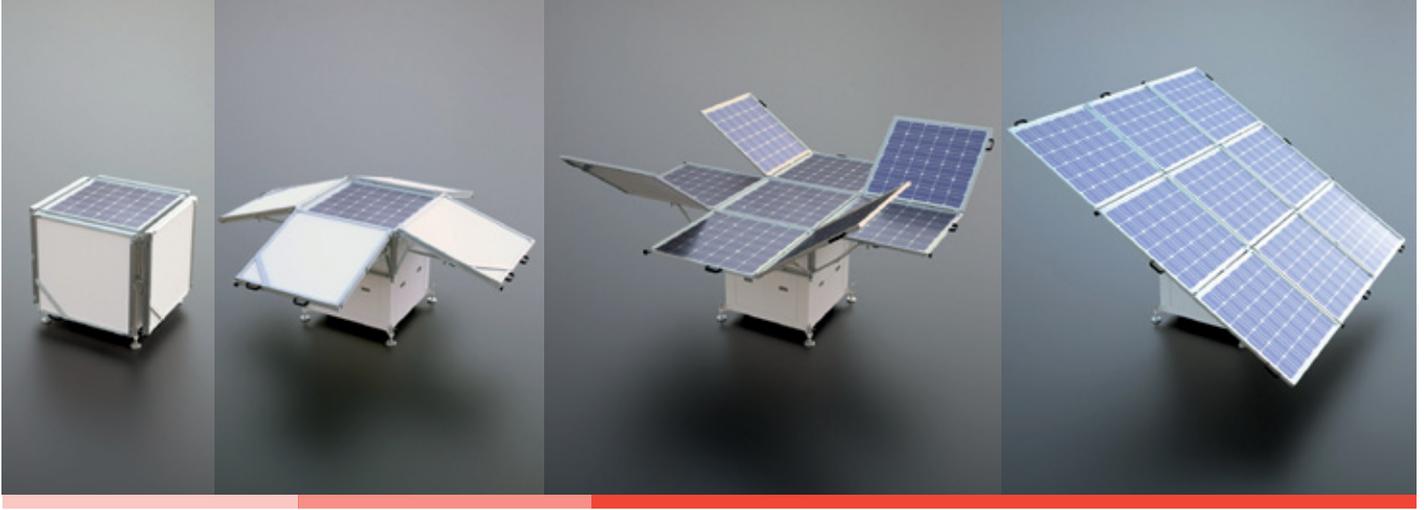
- Charging the batteries by using the solar energy, the grid or other means such as diesel generators
- Keeping the PV live by removing the need for a counter current
- 7" touch screen display allows a simple parameter consultation
- Inverter with pure sinusoidal output, powered by battery or AC line

PRODUCT BENEFITS

- Providing energy to the point of consumption without interruptions
- Ensuring predictable energy input, as well as immediate and long-term cost savings
- Continuous insight into critical equipment and environmental conditions through intelligent controls, real-time metering, production and power usage statistics and enhanced monitoring devices



ensures a sustainable and independent energy supply. The sun2safe unit is equipped with high performance batteries that can be charged by the sun2live as well as by the grid or by other means such as diesel generators. By utilising this efficient hybrid concept a steady and reliable energy supply can be guaranteed – 24 hours, 365 days a year, even during cloudy days, the winter season or in cases of blackouts.



sun2go xl

PRODUCT FEATURES

- Required space:
 - Dimensions: 1.27 x 1.27 x 1.20 m
 - Max Weight: 500 kg
 - Surface of the PV Sail: 9 m2
- Off-grid power supply
- Available as mobile kit version and semi-mobile solution
- Communication tool

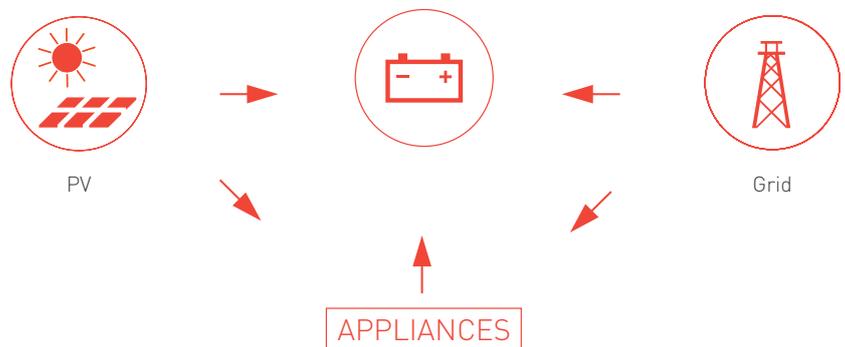
PRODUCT BENEFITS

- Extremely easy installation and low maintenance
- Independence from grid unreliability
- Independence from dirty fuel generators and fuel prices
- Flexibility through mobility

ENERGY THAT MOVES

AUTARKY FROM GRID AND DIESEL PRICES

With its easy installation, its high flexibility and its low maintenance the sun2go xl energy generating and storage system perfectly fits to different customer requirements. Private houses, shops, construction sites, small hospitals, emergency stations – the energy supply through the sun2go xl is offering a crucial benefit to all of these applications: total independence from the grid!



MOBILE OFF-GRID SOLUTION

The sun2go xl is available in two different versions: a mobile kit version with folded PV modules and a semi-mobile version with external PV modules, that can be anchored to the ground. Each type consists of PV modules for the energy generation, a battery to store the produced energy and a communication tool to facilitate the monitoring of the system. The sun2go xl modular concept enables all users to customise the performance according to the energy consumption requirements. By substituting the use of fuel generators sun2go xl is providing all the advantages of a sustainable electrical power generation. With a maximum weight of 500 kilograms and a PV surface of nine square metres the sun2go xl combines everything customers require to produce, store and consume their own energy.



SOLAR WATER TREATMENT

OFF-GRID SOLUTION FOR CLEAN WATER

As precondition for human life clean and drinkable water is essential for the development of cities, touristic infrastructures and industrial sites. Particularly in remote areas or on small islands without any connection to the grid the treatment of water represents a real challenge. The off-grid water treatment solution sun2water – jointly developed by PV Energy Limited and The meeco Group – provides potable water to communities and businesses dependent on unreliable, expensive or difficult-to-maintain water and power sources.

sun2water solutions are custom-designed, utilising a variety of water treatment, power generation, and energy storage technologies to meet local water and energy requirements while minimising investment, maintenance, and operating cost. Our sun2water turnkey solution integrates proven technologies and utilises industry-leading equipment. Thus, a wide range of water treatment technologies can address different local water conditions and requirements:

- Decarbonation
- Reverse osmosis
- Nano filtration
- Ultra filtration (UF)
- Micro filtration
- Specific ion removal
- Chlorination



PRODUCT FEATURES

- Solar photovoltaic (PV) power generation
- Supplemental power sources (in case of low irradiation)
- State-of-the-art battery storage technologies
- Web-based system monitoring and failure prevention
- Top-tier electrical components

PRODUCT BENEFITS

- Wide range of possible water sources
- Self-cleaning system
- Reliable electricity 24/7
- Customised solutions to minimise investment and operating costs
- Engineered to be installed quickly and operated/maintained easily

REFERENCE PROJECTS

OUR SOLUTIONS FOR SPECIFIC REQUIREMENTS

With highly customised solar energy solutions and projects from small to large-scale PV Energy Limited can serve different types of customers.



LARGE-SCALE PROJECTS V.C. BIRD INTERNATIONAL AIRPORT ANTIGUA

The sun2live solar plant installation at the V.C. Bird International Airport Antigua, developed and constructed by PV Energy Limited, plays a pivotal role in the clean energy strategy for Antigua and Barbuda. The increasing industrialisation and regional development of the Caribbean twin islands state caused a risen energy demand of more than 30 per cent in only one decade. Therefore, the Government of Antigua and Barbuda strives to augment the fossil fuel based energy supply by renewable energy in order to bridge the power gaps and reduce the twin-island's reliance on crude oil.

A major part of this visionary energy approach, represented the installation of the large 3 MWp solar energy plant in Antigua realised through PV Energy Limited. More than 12,000 top-tier polycrystalline photovoltaic panels have been installed by our team generating up to 4.645 MWh per year and therefore saving a substantial 3.019,50 tons of CO₂ emissions during the same period and thus contributing to the goal of reducing the carbon footprint of the twin island state.

To supply the airport with eco-friendly and clean solar power was a mission, which required diligent and farsighted analysis and preparations. In this context, we have carried out specific glare studies, in order to avoid any glare hazard issues for pilots and to ensure the safety regulations of the airport. The PV installation at the V.C. Bird International Airport has also been structurally combined with PV Energy Limited's energy management and storage system sun2safe. This all-in-one converter/inverter/storage solution provides backup power during the night-time and bridges interruptions of the grid, enables an optimal management and energy efficiency of the airport.

SITE OVERVIEW

Location	Coolidge, Antigua & Barbuda
Coordinates	17.129°N - 61.809°E
Average global Irradiance	6 kWh/m ² /yr
Average temperature	24.5 °C / 80.3 °F
Average precipitation	60.25 mm/yr

INSTALLATION OVERVIEW

Date on stream	30 th November 2015
Turnkey solution	sun2live/sun2safe
Panel type	oursun, ESP 250
No. of installed panels	12.078
Total output	3,019.5 kWp
Size of PV park	3.86 ha
CO ₂ -savings/year	3,019.5 tons
Approximate annual energy production	4,645 MWh



MEDIUM-SCALE PROJECTS DIGICEL (ANTIGUA)

As a leader in renewable energy, we support wireless service providers and infrastructure suppliers to power their telecommunication stations (BTS) with solar energy. For the Caribbean mobile phone network provider Digicel we installed two sun2com solutions in St. Johns, Antigua. sun2com – developed by PV Energy Limited and The meeco Group – is a solar power system composed of PV modules, a lithium battery and a power management and monitoring tool. By providing clean and reliable energy to the BTS, sun2com can substitute the use of fuel generators reducing the dependence from rising fuel prices and increasing delivery costs. Furthermore, Digicel benefits from lower maintenance requirements and contributes to a sustainable development of the whole of the Caribbean.

INSTALLATION OVERVIEW

Date on stream	14 th April 2016
Turnkey solution	sun2com
Panel type	Poly ESP 255R
No. of installed panels	20
Total output	5 kW
CO ₂ -savings/year	4.062 kg
Approximate annual energy production	7.66 MWh



SMALL-SCALE PROJECTS BEACH HOUSE HOTEL BARBUDA

The installation of a sun2go xl solar generating and storing solution at the Beach House Hotel in Barbuda shows how private investors can optimise their energy supply by using the power of the sun. The hotel owner was seeking for a clean and affordable energy solution to manage the restructuring of his premises. Available in both mobile and semi-mobile version the sun2go xl meets diverse energy requirements, such as off-grid power supply. For the Beach House Hotel, the sun2go xl modular concept represented the optimal solution, offering the possibility to customise the performance according to the energy consumption. The nominal capacity of 1,4 kWp of the mobile unit enabled the hotelier to light the building and to operate all the necessary power tools during the construction.

INSTALLATION OVERVIEW

Date on stream	1 st February 2016
Turnkey solution	sun2go xl
Panel type	Mono 115 M
No. of installed panels	9
Total output	3 kW
CO ₂ -savings/year	1.133 kg
Approximate annual energy production	2,13 MWh



ABOUT US

EXPERT FOR INTERNATIONAL PV PROJECTS

PV Energy Limited is a UK-based globally active renewable energy generation and storage company. We are focused on the development, building, operation and sale of solar photovoltaic (PV) as well as hybrid and trybrid energy projects.

With our flexible but structured business approach in the field of property and clean energy development and investment, we bring efficient client renewable energy generation and storage solutions to businesses, house owners, governments and communities. Thanks to our experience in the renewable energy market and our global network of subsidiaries, we offer clients and customers access to international premium renewable energy generation and storage project investment opportunities.



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