

generate

an income from the sun...

by having a **solar PV** system installed



Stroma Solar survey, supply and install solar PV supported by leading edge performance monitoring by the energy performance in buildings experts.



STROMA[®]
SOLAR

www.stroma-solar.co.uk

From the 1st April 2010, Feed-in Tariffs (FITs) became available adding benefit to the homeowner for installing renewable energy sources, whereby energy companies are obliged to pay householders a regular tariff for their production of renewable electricity such as electricity produced from a photovoltaic (PV) array.



To qualify for the FIT scheme, renewable technologies such as solar PV must be installed by an MCS (Microgeneration Certification Scheme) certified installer.



Stroma's experience and knowledge of energy performance in buildings sets us at the forefront of the sustainability and renewables markets.

You can be assured that we have worked with single dwellings to large developments and can assist in the transition to a more sustainable built environment.

Stroma Solar connects the Stroma Network an approved solar PV surveying team who have completed training so as to become competent at surveying, designing and installing solar photovoltaic nationwide. Working with the Stroma Network means that you can be reassured that all surveys and installations conducted are maintained by a Government approved certification system; all personnel involved at every stage are certified and competent to carry out this activity.

Stroma Solar operates exclusively with MCS certified installers, ensuring that the highest level of competence and consumer satisfaction is maintained at all times. Stroma provides excellent detailed technical support to all customers, surveyors and installers to make sure that every installation project has the appropriate levels of reassurance, insurance and warranty covers in place.

Additionally, post installation performance monitoring is also provided at no extra cost to ensure the actual performance measured is in line with the design and warranty performance of equipment used.

Have peace of mind that Stroma Solar combines approved services and warranties, all certified members on the scheme ensure you receive:

- Qualified property surveys to include clear quotations, including yield and payback analysis that you can measure your actual equipment performance against
- Government backed Microgeneration Certification Scheme (MCS) approved installers and products such as photovoltaic (PV) solar panels
- Access to Feed-in Tariffs (FITs) only available in conjunction with MCS certification
- Accurately priced and fully assured service from start to finish, with an insurance backed warranty



Solar Photovoltaic (PV)

Producing FREE electricity direct from the sun

Solar PV systems utilise the sun's free potential energy and use photovoltaic (PV) cell technology to turn the sunlight into useable electricity, which in-turn can be used in a domestic capacity to run lighting systems and regular household appliances.

One of the main benefits to the UK renewable market is that you do not need direct sunlight to generate energy; the PV system has the capacity to produce a certain amount of electricity even in overcast conditions.

Photovoltaic panels (PV Cells) can be attached to your walls or roof depending on the optimum angle required for achieving the greatest energy return.

The cells are made up of double or single layers of semiconducting material which create electric fields when sunlight is applied, the greater the amount of sunlight hitting the material the more electricity (measured in kWp) will be produced, therefore increased financial savings.

Key Benefits

- **Generate an income from Feed-in Tariffs (FIT)**

Every kilowatt of electricity you produce will be rewarded regardless of whether you use it yourself, or sell it back to the grid.

- **Reduce your electricity bill**

The sun's energy is a free and renewable source, meaning that when you have covered the installation costs of the technology; your electricity bills will reduce.

- **Reduction in your carbon footprint**

Solar energy systems do not discharge any carbon dioxide (CO₂) into the atmosphere. It is estimated that a solar PV system installed on a typical residential property could save around 1tonne of CO₂ per annum.
(Source: Energy Saving Trust).



Renosola Photovoltaic Panels

With over 600MW production per year, Renosola is one of the largest photovoltaic providers in the world, exceeding \$1billion turnover, they provide first class manufacturing of mono silicone cells with a 25year MCS Certified product warranty.

The panels are designed to withstand rigorous operating conditions whilst offering a high power output. The tempered glass is designed for high transmission, with an anodized aluminium alloy frame. All panels are fitted with an ip65 rated junction box, with bypass diodes as standard.

Renosola 190w High Performance Monocrystalline Module

The PV panels offer high stability levels and weather resistance even under the most extreme conditions along with performance guarantees.

5 YEAR

Full defects product warranty

10 YEAR

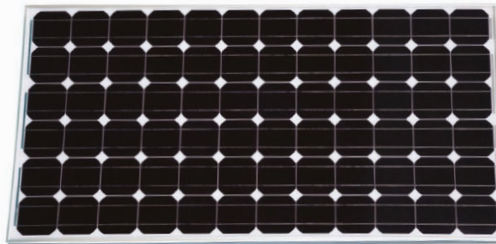
90% Performance Guarantee

25 YEAR

80% Performance Guarantee

TECHNICAL SPECIFICATION

Power Rating	190w
Module Efficiency	14.88%
Weight	16kg
Length	1580mm
Width	808mm



- Microgeneration Certification Scheme listed under certificate Number MCS PV0055/02
- High transmittance tempered glass
- Monocrystalline cells deliver high efficiencies
- Conforms to PV Standards: IEC 61215:2005, IEC 61730:2004, UL 1703



Stroma Solar ensure that the PV panels are delivered with optimum care, all batches are boxed, sealed and labeled with the site address and traceability.

SMA Sunnyboy HF Inverter



This is the new generation of isolated inverters packed full of the latest SMA technology, the Sunnyboy HF series provides the highest yields for transformer inverters of this performance class. The combination of the easy access configuration area and the lightweight of the units makes for a simple installation process.

The wide input voltage ranges from 175 to 700 Volts giving extraordinary flexibility for different system configurations, moreover, the modern graphic display and wireless Bluetooth communication system makes the device highly user-friendly with the ability to monitor the generation data in real time.

PC Tablet with Bluetooth Connectivity

Building on the strength of the inbuilt Bluetooth Connectivity contained within the Sunny Boy HF inverter, Stroma Solar shall provide a PC Tablet to all occupiers for accessing key daily profile data, current output and total energy yields. Data can be stored on the device indefinitely or on other peripheral back up device or PC. The live data can then be analysed against the predicted design output and the warranty performance levels, therefore providing reassurance of the overall system performance for the life of the system.

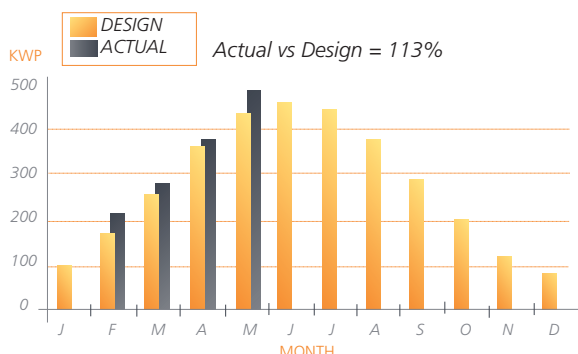


The 7" touch screen PC Tablet may also be used for all other usual PC applications such as web browsing, multimedia applications and gaming.

Monitoring Service

Post installation monitoring is included within the standard Stroma Solar PV package for a twelve-month period.

Stroma Network shall install the latest smart meter solution with an inbuilt SMS functionality; this will monitor the yield of your PV system and provide you with a monthly summary of performance against the predicted design and warranty level. All data recorded by Stroma Solar is securely stored within the data centre. If required this monitoring service contract may be extended beyond twelve-months at a modest cost.



For further details of the benefit of having data analysis please refer to the two case studies found on page 7.

APPROVED INSTALLER



Consumer Protection

Warranties

Ensuring quality assurance and consumer protection is the essence of the Certification scheme operation. Stroma Solar will bring together a number of insurance and warranties in order to provide the owner with peace of mind in their new PV solar installation.

Competent Person Scheme (CPS)

All installations will be undertaken by appropriate Competent Persons listed within the Government approved CPS. Each installation will be undertaken with insurance backed warranties for a minimum period of six-years.

Microgeneration Certification Scheme (MCS)

All products installed will include a 25 year output performance warranty for the PV panels. Furthermore, installers will be MCS certified in addition to CPS certified and shall provide Professional Indemnity for the design of the PV solution, as well as Public Liability for the physical works undertaken on the property.

Feed-In Tariff (FITs)

The value of the FIT is index linked to the Retail Price Index (RPI) for 25 years from the date of notification, defined by the MCS installer and is regulated by Ofgem.





Performance Monitor Analyser (PMA)

The performance monitor analyser (PMA) provides you with a web enabled remote monitoring and analysis tool for all your installed solar PV systems.

Data includes:

- Electrical yield
- Actual performance versus predicted design performance
- Accumulated FIT generation
- CO₂ savings

Within the report writing function it is possible to analyse the actual performance measurements against the designed system (which includes all relevant details such as orientation and shading), the results of which can be exported into any common file outputs such as excel or word.

The PMA database performs a monthly data analysis to ensure each installation meets the designed output. Alarms may be set at the operator's discretion (say, 90% of design output over a three month period) to alert the operator of a dip in output performance.

Performance data may be interrogated across any given data set with similar parameters, for example analysing yield performance for all south-facing installations in a certain geographical area.

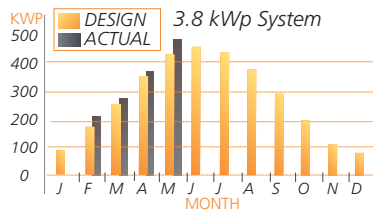


CASE STUDY 1 MR PARKER, NORTH YORKSHIRE

System Size	Mono Crystalline 3.8 kWp
Roof Orientation	South
Angle of Tilt	30 degrees
Shading	Little or none
Location	Harrogate, North Yorkshire
Design Output	3,262 kWh/year
Cost of Equipment	£11,970
Theoretical Payback	6 years 7 months
Actual Performance vs Design	113% Measurements taken February to May 2011. Accrued FIT generation for January has been ignored for this analysis, due to installation mid-month.

"I [Mr.R.Parker] have no hesitation in recommending Stroma Solar to anyone looking at PV, the entire team have been courteous and professional in all they have done.

I would particularly like to thank the technical after sales department who have been fantastic in assisting me and my partner with all our queries."

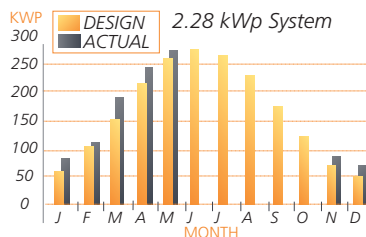


CASE STUDY 2 MS CARSON, NORTH YORKSHIRE

System Size	Mono Crystalline 2.28 kWp
Roof Orientation	South
Angle of Tilt	30 degrees
Shading	Little or none
Location	Skipton, North Yorkshire
Design Output	1,957 kWh/year
Cost of Equipment	£7,980
Theoretical Payback	8 years 5 months
Actual Performance vs Design	117% Measurements taken November to May 2011. Accrued FIT generation for October has been ignored for this analysis, due to installation mid-month.

"I [Ms.Carson] would like to express my gratitude in regard to the professional manner displayed by the Stroma Network surveyor and installation team.

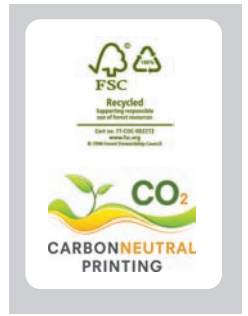
We have been monitoring the performance of the PV system by the Bluetooth system supplied and are extremely pleased with the overall performance, which has consistently outperformed the original design, which in itself was extremely competitive as it had a payback of 8 years."



If you are interested in a renewable technology solution with the added benefit of a monitoring management software tool for your properties, please contact Stroma Solar to arrange further discussions to determine your requirements and suitability.

Please also visit www.stroma-solar.co.uk for further information.

FIT into renewables with Stroma Solar



CERTIFICATION



VOTED BEST ENERGY ASSESSOR SCHEME FOR:



TECHNOLOGY

OVERALL SCHEME

TRAINING

TRAINING



For further information please contact the Stroma Solar team on 0845 621 11 16 or email solar@stroma.com.

Stroma Head Office,
Pioneer Way, Castleford,
West Yorkshire, WF10 5QU

www.stroma-solar.co.uk