JOJUSOLAR

MAKING YOUR HOME
A SOLAR POWER STATION

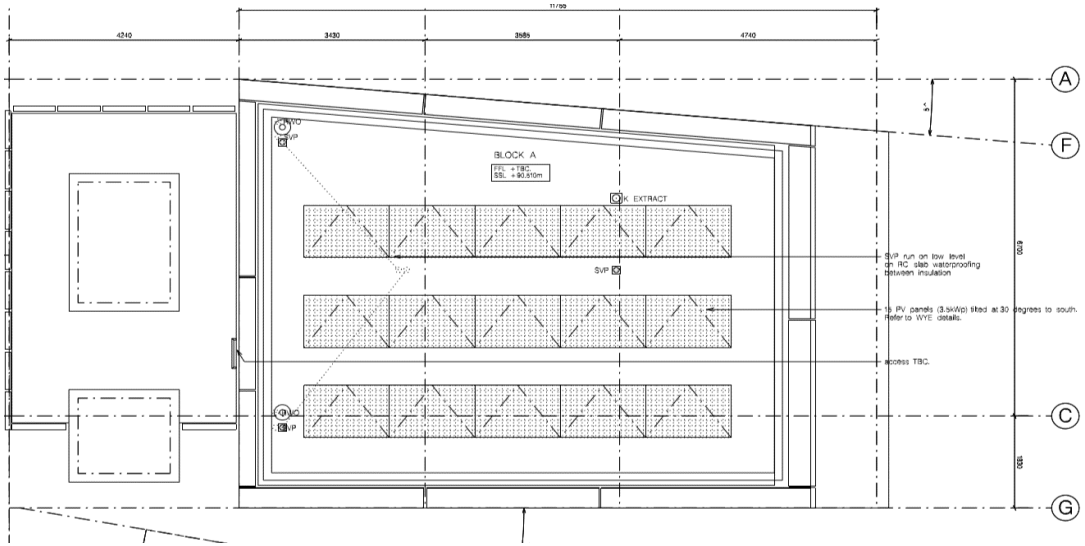
Hello!

Dear Sir/Madam,

Thank you for contacting us to request a quote for a solar PV installation for your home.

At Joju Solar we understand that choosing your solar PV system and an installer is an important decision so we've put together a detailed estimate and proposal for your roof based on our remote survey and the information you have given me. I hope that this answers your questions but if you would like any more information at all, then please don't hesitate to call or email me. My details are below.

If you would like to go to the next stage, then please contact me and I will arrange to carry out a Technical Site Visit at no cost to you. We'll then provide you with a firm proposal.



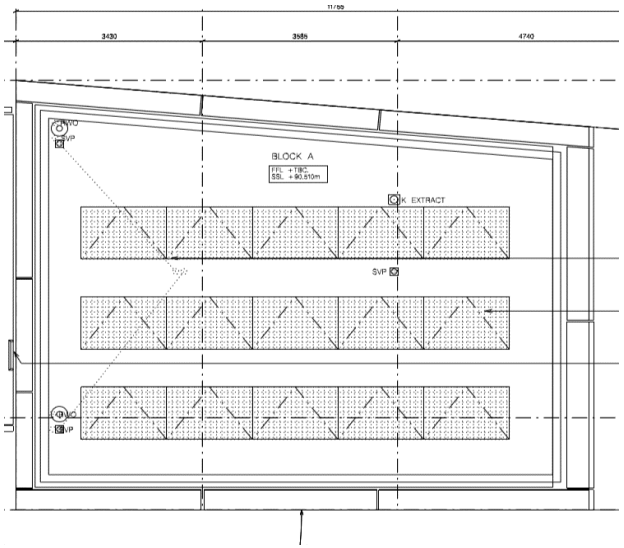
Jon Cowdrill
Sales and Project Manager
jon.cowdrill@joju.co.uk
t: 0207 697 1000
m: 07878 639 582

4.125 kWp JA Solar

JA Solar offer an excellent module which is a great balance of cost and efficiency. Perfect for residential and commercial solar installations.

Solis inverters offer excellent performance and reliability. This traditional string inverter is perfect for simple solar arrays with minimal shading and only one or two orientations. It also has the option for export limitation as standard if required.

For the mounting system we have selected K2 S Dome. It is suitable for nearly all types of flat roofs due to its low ballast requirements and aerodynamic optimization. The roof will need to support up to 40 kG per SQM. If you need a lighter solution, let us know.



System Specification

15 x JA Solar 275W Poly 5BB Cypress
1 x Solis 3.6kW 4G Dual MPPT - Single Phase with DC
K2 S Dome mounting system
Peripherals included
Elster A100-C Generation Meter
Scaffolding Not Included
Immersion Controls: No
SolarEdge Export Meter: Yes

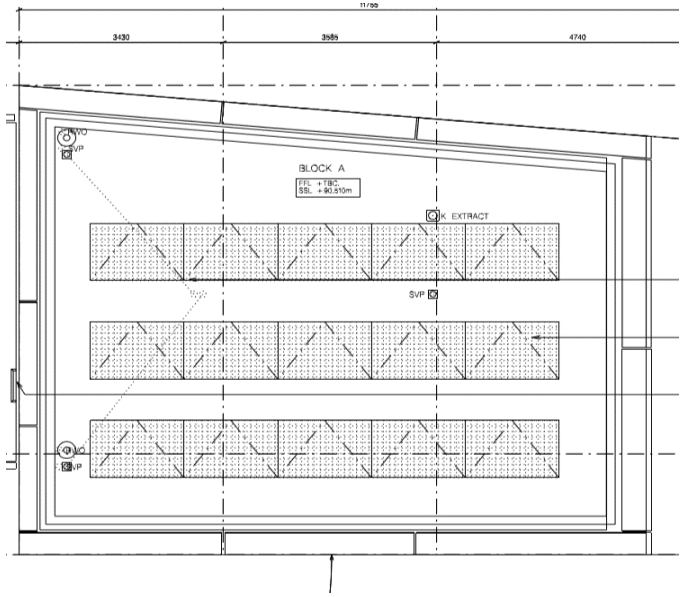
Price: £5,631.62

0% VAT: New Building

4.125 kWp JA Solar

15 x JA Solar 275 W. JA Solar offer an excellent module which is a great balance of cost and efficiency. Perfect for residential and commercial solar installations.

To minimise the effect of shading and significantly improve the performance we have configured the system with Solar Edge Inverters and Optimisers. Optimisers reduce the impact of shading allowing each module to operate as individual unit.
For the mounting system we have selected K2 S Dome. It is suitable for nearly all types of flat roofs due to its low ballast requirements and aerodynamic optimization. The roof will need to support up to 40 kG per SQM. If you need a lighter solution, let us know.



System Specification

15 x JA Solar 275W Poly 5BB Cypress
1 x SolarEdge 3680w HD Wave Inverter
K2 S Dome mounting system
Peripherals included
Elster A100-C Generation Meter
Scaffolding Not Included
Immersion Controls: No
SolarEdge Export Meter: Yes

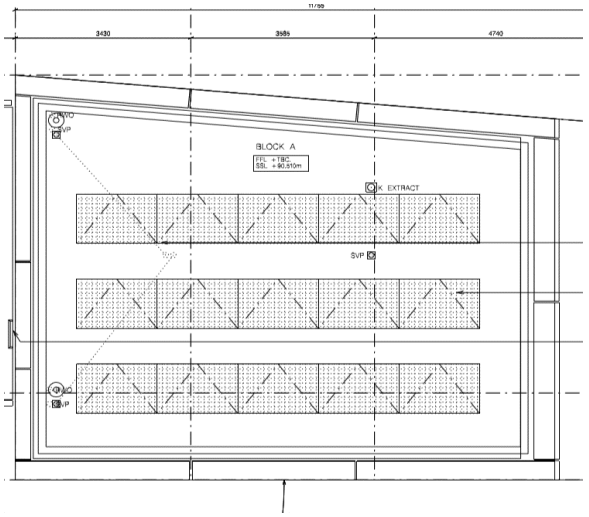
Price: £6,922.11

0% VAT: New Building

4.725 kWp Q Cells

15 x Q Cells315 W. Q Cell Solar Panels are designed in Germany and manufactured in South Korea. This All Black Module is a great balance of cost and efficiency.

To minimise the effect of shading and significantly improve the performance we have configured the system with Solar Edge Inverters and Optimisers. Optimisers reduce the impact of shading allowing each module to operate as individual unit.
For the mounting system we have selected K2 S Dome. It is suitable for nearly all types of flat roofs due to its low ballast requirements and aerodynamic optimization. The roof will need to support up to 40 kG per SQM. If you need a lighter solution, let us know.



System Specification

15 x Q Cells 315W Mono Q Peak Duo G5 All Black
1 x SolarEdge 3680w HD Wave Inverter
K2 S Dome mounting system
Peripherals included
Elster A100-C Generation Meter
Scaffolding Not Included
Immersion Controls: No
SolarEdge Export Meter: Yes

Price: £7,474.89

0% VAT: New Building

How much will my system produce?

All MCS accredited installers are required to give you an estimate of energy generation based on a standard government approved model called "SAP". This estimate is based upon the standard MCS procedure and is given as guidance only and should not be considered as a guarantee of performance.

This model is based on the survey and the level of solar radiation (sunlight) received in your particular post-code area. It is adjusted by the following factors:

- The size of your system in kWp
- Orientation (direction) of your roof
- Pitch of the Roof

Detailed shading analysis is undertaken using the standard MCS procedure; you can see this shading analysis on the design pages. It is estimated that this method will yield results within 5% of the actual annual energy yield for most systems.

The amount of energy that your system should produce is measured in kilowatt-hours (kWh). 1 kWh is the same as 1 unit on your electricity bill.
The average home uses 3,300 kWh per year on lights and appliances.
(Source: Ofgem 2011).

	4.125 kWp JA Solar	4.125 kWp JA Solar	4.725 kWp Q Cells
Installed Capacity (kWp)	4.13	4.13	4.73
Orientation	30	30	30
Inclination	10	10	10
Postcode Region	1	1	1
Unshaded Yield (kWh/kWp)	887	887	887
Shade Factor (%)	5%	5%	5%
Established Annual Output (kWh)	3476	3476	3982

"The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the standard MCS procedure is given as guidance only. It should not be considered as a guarantee of performance."

Benefits of your Solar Roof

We have made a financial model to predict the savings you are likely to see from your PV system over the next 25 years - the warrantied lifetime of your system. In practice, we would expect your PV system to keep generating and saving you money even after this.

We show:

- The total benefits of the system over 25 years.
- All benefits are due to bill savings.
- The levelised cost of energy is the price of electricity generated by the system. You will see this is nearly half the price of buying electricity from the grid (about 15p/kWh). Solar really is the cheapest way of powering your home.
- The rate of return is a measure of the profitability of the system. This percentage value is the equivalent interest rate you would need from a bank to return the same profit.
- It's not all about the money - solar PV benefits the environment too. We also show the annual CO_2 savings of your system.

"It does give you a fuzzy glow to know you are producing your own electricity. It's almost a game trying to minimise grid electricity – a bit like driving the hybrid car, when we sort of consider it a failure to use fossil fuels"

Chris, Joju customer

	4.125 kWp JA Solar	4.125 kWp JA Solar	4.725 kWp Q Cells
System Cost	£ 5,631.62	£ 6,922.11	£ 7,474.89
Total financial Benefit	£ 14,103	£ 14,103	£ 16,154
Levelised cost of energy (p/kWh)	6.48	7.97	7.51
Rate of Return (%)	6.6%	5.0%	5.4%
CO_2 saving (tonnes)	1.84	1.84	2.11

Energy Savings

Electricity bill savings are now the greatest financial benefit of having solar panels. It is important that we provide honest and accurate information.

Once we know how much your system will generate we use simulation software to predict how much energy will be used in your home and how much will be exported to the grid. the more energy you use at home, the more you will save on your bills.

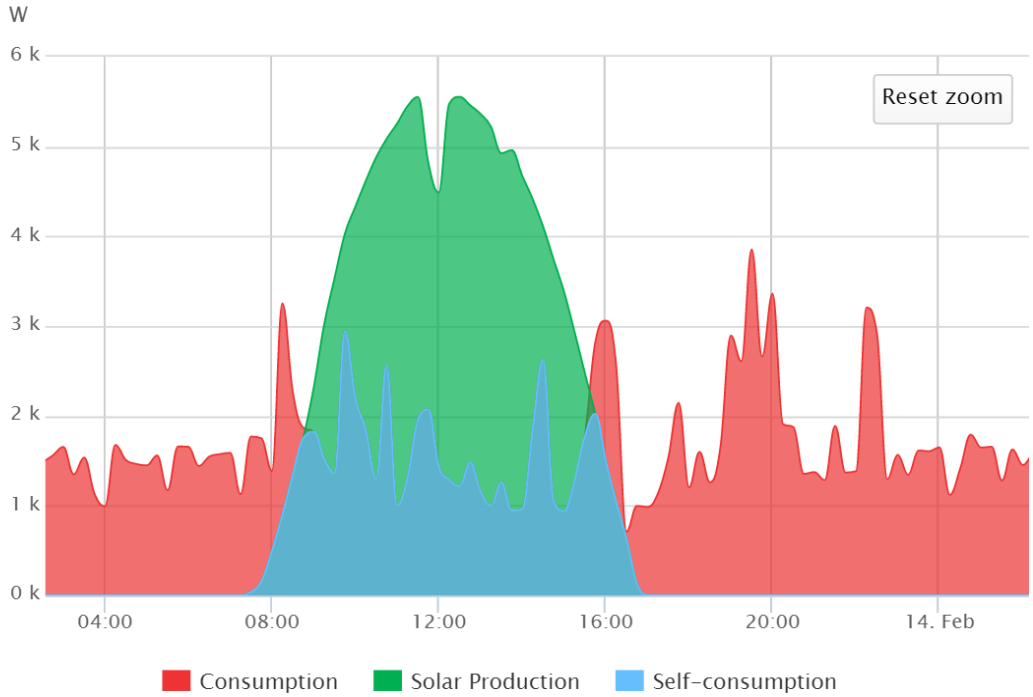
We can estimate the energy savings with the addition of various battery storage technologies and different levels of energy demand.

For this model, we have estimated that 50% of the solar energy generated will be used in your home.

We try to be conservative with our saving estimates. When assessing various quotations, make sure you understand how the energy savings have been calculated, as overstating the amount you use on site can make your system look better than it actually is.

If you are charging an electric vehicle during the day, our modelling shows a typical 45% on site consumption.

Battery systems are designed to increase the amount of solar electricity you can use yourself. Installing a battery alongside the PV will raise your self-consumption to about 70% over the year.



Q Cells Solar Panels

Proven quality,
Q CELLS were established in 1999 and have gone onto become one of the biggest manufactures of solar panels in the world. The award winning panels are engineered in Germany and manufactured in South Korea. They are a good quality , mid-range panel with an excellent balance of cost and efficiency.

All Black Aesthetic Appearance:
Q CELLS produce an attractive “all black” solar panel which means the frames, back sheet and mono-crystalline cells give the panel a uniform, black appearance.

Brilliant service, quick and efficient installation and a good range of prices and model options are given to us to choose from. Excellent all round.

5 Stars, Yougen

Engineered in **Germany**

Sunpower solar panels

More energy from less space:
Sunpower manufacture the most efficient modules on the market. If you find a commercially available solar panel with higher efficiencies, produced by another manufacturer we'll eat our hats.

For our breakdown of the most efficient solar panels available have a look at our top ten here.

More Peace of Mind:
Sunpower have industry leading, 25-year product and performance warranties. They will pay for the labour and scaffolding if a panel needs replacing. It's the strongest product warranty in the game, and demonstrates Sunpower's confidence in the technology.

For more information you can see a vidoe about the Sunpower modules on our downloads page. Click here

SUNPOWER®
Premier Partner

SolarEdge optimising inverters

All SolarEdge inverters are installed with optimisers which track the maximum power output of each panel individually. This means if one panel is partially shaded or facing a different direction it will not negatively impact on the performance of other panels.

SolarEdge inverters come with built in monitoring. You will be able to see the performance of your solar array right down to individual panel output.

We can also install a SolarEdge export meter which will enable you to see imports and exports to the grid as well as how much solar energy you are using yourself.

Have a look at the design pages to see if an export meter is included.

For more information you can see a vidoe about the SolarEdge optimiser system, on our downloads page. Click here

A little bit about Joju Solar

Joju Solar has a long and successful track record as a solar installer , indeed, we are one of the longest standing MCS-accredited installers in the country.

Our customers are truly at the heart of everything we do and we are committed to providing you with an excellent product and service from design through to completed installation.

Perhaps that is why Joju Solar has so many happy customers. In fact, lots of them have taken the time to recommend us enthusiastically.

We pride ourselves on being true solar experts: leaders in the field. That's one reason why we are approved installation partners to the leading names in solar.

Extremely efficient and friendly service, competitive pricing, and, miracle of miracles, punctual and polite workmen (including scaffolders!). Thoroughly recommended.

5 Stars Google

Our design philosophy

Every one of our installations is designed individually to suit your property and your budget. Our design philosophy means that we only use high-quality and proven equipment, selected in each case by our trained designers and fitted by our own experienced installers.

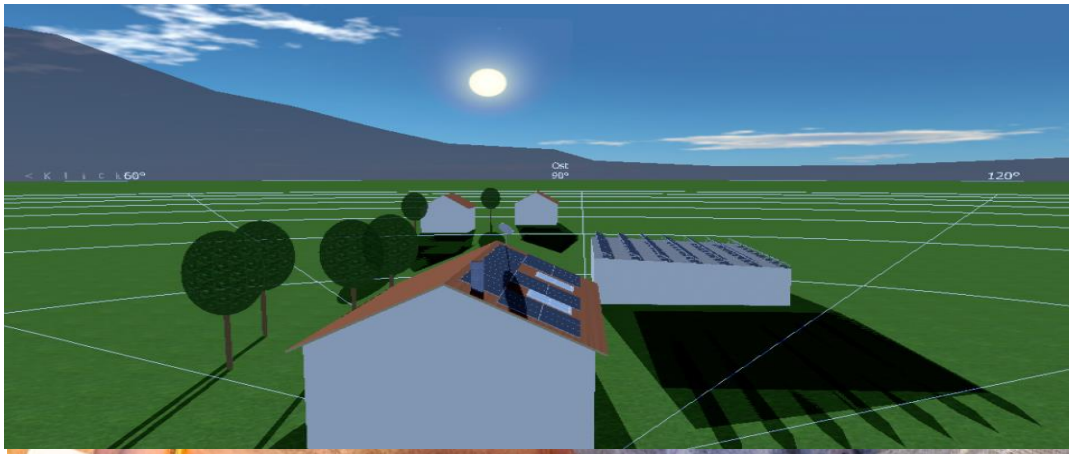
We carry out detailed shading and orientation analysis of your property using specialised solar simulation software. This allows us to calculate the best panel layout and inverter configuration to suit your requirements., and ensure ongoing performance meets your expectations.

If you would like to understand more about our design choices, please feel free to ask.

We never forget that this is your system.

Joju Solar have proved highly competent and helpful in all respects from initial consultation, through structural engineering; design and implementation.

5 Stars, Yougen



Working together

Joju Solar is fairly unique in the solar industry in the way in which we work with our customers. Most companies employ teams of salesmen to sell PV systems and then get the designers once sold. We're different - the people who talk to you and survey your home are the technical experts. That means no hard sell from us, and we will be able to answer any questions you may have.

If you like what you see in this quote, then there are a number of steps to go through before we can install your system.
You will need a Home Energy Assessment for your property if you do not have one. See overleaf for more details.
Planning is not required for most properties, but there are exceptions if your building is listed. If your system is much larger than 4 kWp then we will need to organise grid approval for you and the applications can take up to 8 weeks.

Once this is done, and you have formally accepted the quote, our surveyor will fully brief our delivery team. Your project manager will be in touch to agree a mutually convenient installation date. Our standard lead times will be 4 weeks from all the paperwork being approved. In some situations, we can install faster than this if we have space in our calendar. They will book the installation teams and the scaffold installation (which will go up the day-or-so before). Most installations are complete in one day, and we will tell you if this is not going to be the case.
As your project manager, you can contact me at any time with any questions you would like to ask.

Our promises

We promise to give our customers an excellent service from beginning to end

We promise the be straightforward in how we talk to you

We promise to listen to what you want and to work with you to try and make it happen

We promise to give you a fair price that is easy to understand with no hidden extras

We promise to keep trying to do things better – we know we are not perfect

Your Home Energy Assessment

Government rules mean that you can only claim the full Feed-in Tariff if your home reaches certain a certain level of energy efficiency.

You need to have an Energy Performance Certificate or EPC (like the one on the right) with a rating of “D” or above. The certificate needs to be dated before the commissioning date of the solar array and so the certificate cannot include the solar in the assessment.

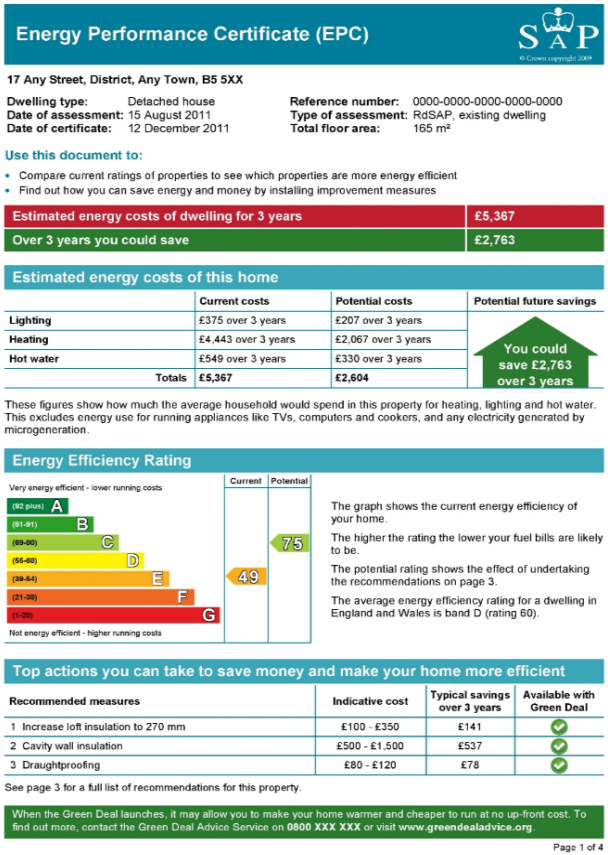
But don’t worry, we will take care of this for you.

We will check to see if you already have a valid EPC. If not, we will organise one to be completed before we start work.

An EPC is included in our price by default - if you don't need one we'll drop the price.

“Helpful, professional and expert at what they do. I’d have no hesitation in recommending them.”

Yougen review



Energy Performance Certificate (EPC)

SAP

17 Any Street, District, Any Town, B5 5XX

Dwelling type: Detached house
Date of assessment: 15 August 2011
Date of certificate: 12 December 2011
Reference number: 0000-0000-0000-0000-0000
Type of assessment: RdSAP, existing dwelling
Total floor area: 165 m²

Use this document to:

- Compare current ratings of properties to see which properties are more energy efficient
- Find out how you can save energy and money by installing improvement measures

Estimated energy costs of dwelling for 3 years	**£5,367**
Over 3 years you could save	**£2,763**

Estimated energy costs of this home

	Current costs	Potential costs	Potential future savings
Lighting	£375 over 3 years	£207 over 3 years	You could save £2,763 over 3 years
Heating	£4,443 over 3 years	£2,067 over 3 years	
Hot water	£549 over 3 years	£330 over 3 years	
Totals	**£5,367**	**£2,604**	

These figures show how much the average household would spend in this property for heating, lighting and hot water. This excludes energy use for running appliances like TVs, computers and cookers, and any electricity generated by microgeneration.

Energy Efficiency Rating

	Current	Potential
Very energy efficient - lower running costs		
(92 plus) A		
(81-91) B		
(69-80) C		75
(55-68) D		
(39-54) E	49	
(21-38) F		
(1-20) G		
Not energy efficient - higher running costs		

The graph shows the current energy efficiency of your home.

The higher the rating the lower your fuel bills are likely to be.

The potential rating shows the effect of undertaking the recommendations on page 3.

The average energy efficiency rating for a dwelling in England and Wales is band D (rating 60).

Top actions you can take to save money and make your home more efficient

Recommended measures	Indicative cost	Typical savings over 3 years	Available with Green Deal
1 Increase loft insulation to 270 mm	£100 - £350	£141	✓
2 Cavity wall insulation	£500 - £1,500	£537	✓
3 Draughtproofing	£80 - £120	£78	✓

See page 3 for a full list of recommendations for this property.

When the Green Deal launches, it may allow you to make your home warmer and cheaper to run at no up-front cost. To find out more, contact the Green Deal Advice Service on **0800 XXX XXX** or visit **www.greendealadvice.org**.

Page 1 of 4

Maintenance

The solar panels themselves are very durable with no moving parts. They are warrantied to last at least 25 years and are expected to last even longer.

Inverters typically come with a 5-year warranty and are expected to last 10-15 years. You should, therefore, count on having to replace the inverter once over the lifetime of the panels.

An exception is a SolarEdge inverter which comes with a 12-year warranty as standard.

Inverter prices and technology are likely to improve significantly in 12 years. There is a chance the inverter will not need replacing at all. However, we do recommend keeping a maintenance kitty of 5% of the installation price after the inverter warranty runs out.

Whilst maintenance is minimal, we do recommend you keep an eye on the performance of your system to ensure all is working correctly. At its simplest, this may just be checking for a green light on your inverter, or ensuring your generation meter readings are going upwards.

For more detailed monitoring, we offer a range of monitoring portals, with comprehensive data logs and analysis.

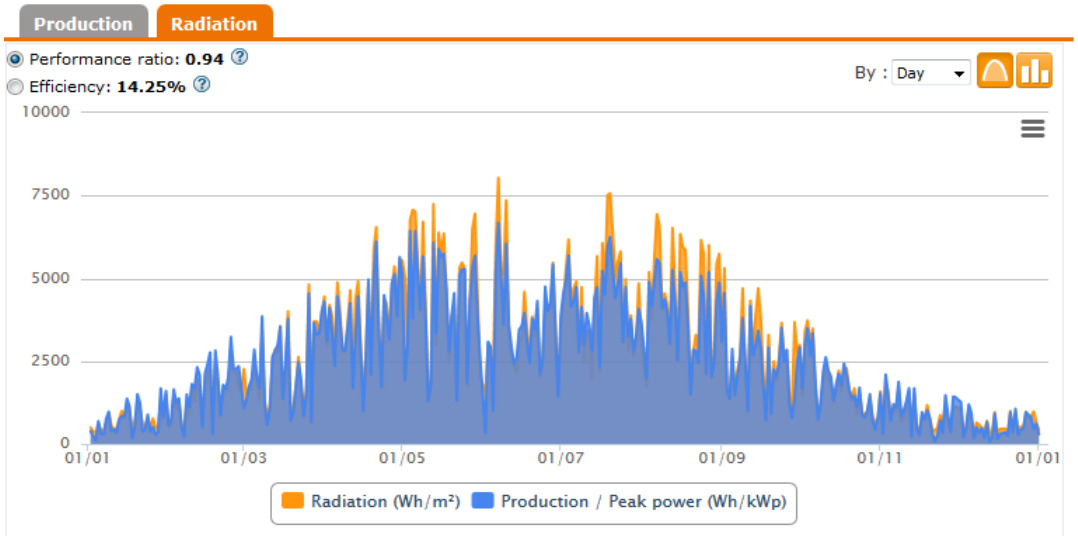
Additional Options

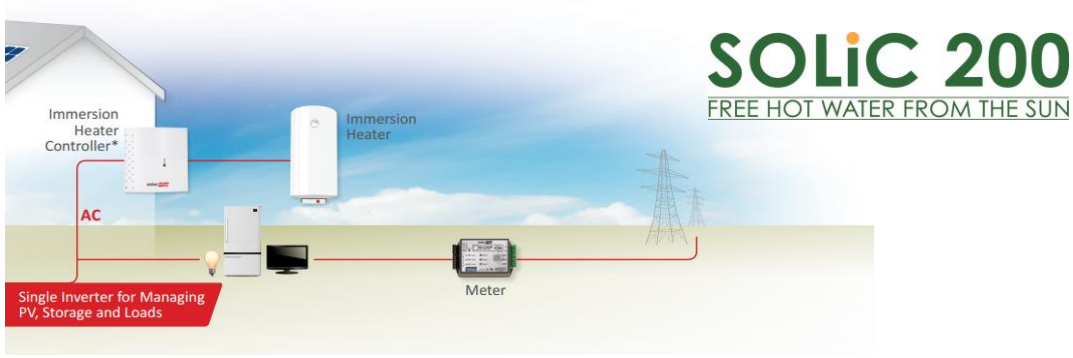
Advanced Monitoring from RTONE

For those of you really interested in the data and performance of your system, we can offer advanced metering from RTONE. This portal compares your system generation to satellite solar radiation data, allowing you to see the efficiency of performance. It can be a useful check on the operation of your system, as it can differentiate between low performance due to poor weather, or a technical fault.

Immersion Controls

We have seen that if you want to get the most out of your solar generation it is best to use it yourself rather than export it back to the grid. The immersion device diverts any electricity that would otherwise be exported into your hot water tank via a smart immersion heater, pushing you to 100% self-consumption. This is particularly beneficial if you currently use electricity or heating oil to provide for your hot water needs. We offer a variety of controls ranging from the no nonsense Solic 200 to the SolarEdge linked hot water controls which will allow remote access to your hot water via the SolarEdge app.





Further Technologies

It's not just solar PV. Joju is offering a range of technologies all with the vision of reducing CO2 emissions and helping you play a role in a smart electric future.

Home Batteries

Joju Solar are UK leaders in domestic battery storage technology. We have installed batteries on high-profile field trials since 2011, and are now selling these directly to residential customers. As such we have probably installed more batteries than any other installer in the country.

Under the terms of the Renewable Energy Consumer Code, batteries need to be quoted in a separate document, so please talk to your project manager if you would like a quotation for batteries as well.

Electric Vehicle chargers.

Vehicles are going electric - it's cleaner at the point of end use and if powered renewably offers zero-carbon transportation. That requires a huge change in infrastructure - instead of petrol stations, these vehicles will be charged by a network of electric vehicle charge stations. We can install electric vehicle charge points for your home, as wall mounted or post-mounted units.

Some legal bits and pieces

Please make sure you read our terms and conditions. You can find these by clicking here. Those Terms and Conditions set out our respective rights and responsibilities if you order an installation from Joju.

The Joju Solar Warranty

Our confidence and experience means that we provide a five year workmanship warranty for all our installations. That warranty covers all our work and all the materials we supply.

Importantly our warranty is fully insurance backed. If for any reason, we are not able to meet our obligations under this warranty then you are protected by the Renewable Energy Consumer Code backed Deposit and Workmanship Warranty Insurance Scheme. We pay for this for every single customer.

Panel, inverter and battery Warranties

All our panels come with at least a ten-year warranty and a 25-year energy output and performance warranty from the manufacturer. All our inverters come with at least a five-year product warranty (or 12 years for SolarEdge) from the manufacturer. Our Tesla, LG Chem and Sonnen batteries come with a 10-year warranty from the manufacturer.

Awards and Accreditations

We're very proud of the awards we have won in recent years. The foremost industry awards, the Solar Power Portal Awards, awarded us Highly Commended for Residential Energy Project of the Year in 2016. We have also been nominated 3 years running for Installer of the Year.

We have full set of accreditations,and were one of the first companies in the country to be certified under the Microgeneration Certification Scheme (MCS), and we adhere to the Renewable Energy Consumer Code (RECC)

Health and Safety are very important to us, and we are CHAS registered and approved under Exor and Safecontractor schemes.

And we are trusted by major brands within the industry, being Tesla Certified installers and Premium partners for Sunpower.

Awards

SOLAR POWER PORTAL AWARDS

2016 HIGHLY COMMENDED
Residential Energy Management Project

2015 WINNER
Best Community Benefit Project

2015 HIGHLY COMMENDED
Installer of the Year

2015 HIGHLY COMMENDED
Best rooftop project <250kW

MCS Registered

MCS

Accreditations

CHAS Accredited Contractor www.chas.gov.uk

exor APPROVED

Safecontractor APPROVED

NICEIC APPROVED CONTRACTOR

RECC RENEWABLE ENERGY CONSUMER CODE

YouGen

Checkatrade.com

Partnerships

TESLA ENERGY CERTIFIED INSTALLER

SUNPOWER Premier Partner