



SOLAR PV
buyers
GUIDE
agriculture





Introducing Hestia

Who are we?

We're Hestia, we're all energy and since 1993 we have spent our days committing to the UK green agenda.

We are solar PV specialists, providing quality photovoltaic solutions for farmers, home owners and businesses.

Hestia is also a respected and established provider of independent energy efficiency advice services.

What have we done?

Hestia is one of the most established renewable energy firms in the UK. We have been an Energy Efficiency Advice provider on behalf of the Energy Saving Trust for over a decade.

With the introduction of the UK Feed In Tariffs, Hestia expanded into delivering quality solar photovoltaic (PV) installations to farmers and is able to deliver nationwide.

We work with technology partners from Germany and we pride ourselves on our commitment to the environment and to exceptional service.

We are trusted by UK farmers to deliver and have strong agricultural customer references. We welcome you to visit one of our successful installations (several up to 50kW).

Our environmental agenda?

With no moving parts, photovoltaic's provide one of the simplest, most reliable and cost effective ways to reduce CO₂ emissions and future-proof farmers against rising energy costs.

Hestia is committed to a greener UK, lower carbon production and arming UK farmers with the right advice for responsible energy management. We work closely with a specialist ecologist and environmental planning consultants.

We are focussed on providing cleaner energy supplies to keep our farms working.

Hestia is a member of the NFU and CLA.



“If there are two things that were made for each other, it’s farmers and renewable energy, farmers have the land, skills and the materials to set up a renewable energy project”

Farmers Weekly

Why solar and farmers are ideal for each other

The lowdown: you and solar

Solar PV is the conversion of daylight energy from the sun, into electrical energy, which can be used to power your property and becomes the first energy source of choice for your own consumption.

A solar PV system consists of multiple components including photovoltaic panels (combined to form arrays), panel mountings, a means of converting the electrical output from direct current (DC) to alternating current (AC) through an inverter as well as metering and monitoring systems.

In the UK our daylight hours provide enough light to make enough energy to justify your investment and deliver approximately 12% return on investment.

Through the Government backed, index linked Feed in Tariff scheme, all of the electricity your system generates is paid for at a very attractive price. All energy consumed is free and any excess electricity can be fed back into the grid, attracting a further payment.

Hestia is experienced in helping UK farmers deal with a number of solar PV challenges - including large scale planning permission, financing, grid compatibility issues, asbestos roofs, roof strengthening and ammonia-rich environments.

* assumes: orientation - south; tilt - 10°; over-shadowing - none ; electricity exported - 50%; annual degradation - 0.93%; annual RPI & electricity inflation - 3%,

Solar PV benefits for farmers

The sun is one of the earth’s most abundant natural resources and a truly sustainable energy source. Solar PV is an excellent green energy option with unique benefits:

1. On-farm electricity generation is a diversification opportunity. Energy income can supplement farm income. Diversify your production and reduce your risk by producing energy to use and sell.
2. Solar PV can meet on-site electricity needs for heating, feeders, ventilation and process energy. Excellent for farms which have reasonable energy demands during the day.
3. No need for additional buildings or land - just put your roof to work.
4. An attractive multi-site income opportunity for farmers with geographically separate operations to install more solar at the higher tariff for all sites.
5. Investment returns of close to 12% per annum initially rising with annual RPI adjustments*.
6. No watering, feeding, maintenance. A safe, well proven technology. Reliable and low maintenance that comes from having no moving parts.
7. Opportunity to ‘lock in’ to current tariff structure will ensure that property values increase as a result of solar installations. As energy bills increase, in the long term, properties that already have panels will be increasingly in demand.
8. Silent operation and low visual intrusion makes planning consent a straightforward process.



"Wind, sun, methane .. may not have much in common with wheat, rape, milk and beef, but that hasn't stopped UK farmers grasping the green energy nettle with both hands."

Farmers Weekly

Finance & Policy

Policy and Incentives

The UK has tough carbon reduction targets to meet. Farmers offer a significant part of the solution to energy security, food security and tackling carbon emissions. Thanks to legislation, solar PV helps you reduce your carbon footprint and is a smart investment too.

Excellent Feed in Tariff (FiT) payments for systems up to 50kW are available. Under the UK FiT arrangements:

- Get paid an attractive price for every unit of clean electricity you produce for 25 years. This is the 'Generation Tariff'.
- Consume all energy you produce - for free.
- Feed energy not consumed back into the grid, and receive an 'export' payment.
- FiT payment income will increase annually in line with RPI.
- There are cast iron guarantees on current tariffs until April 2012*.
- Achieve approximately 12% return
- An eight year payback is achievable.

Typical financial & performance data

System size	4kW	10kW	50kW
Generation tariff - pence per kWh	43.3	37.8	32.9
Roof space required (m ²)	26	64	320
Panels at 200W	20	50	250
Roof orientation	South	South	South
Electricity generation kWh p/a	3200	8000	40000
Total benefit (income/savings) in year 1	£1,643	£3,588	£16,052
Return on investment in year 1	11.2%	10.3%	13.4%
CO ₂ (kg) savings in year 1	1,741	4,352	21,760
Total benefit (income/savings) over 25 years	£52,948	£115,614	£517,233
Payback period (years)	8 to 9	8 to 9	7 to 8
Total CO ₂ (kg) savings over 25 years	39,013	97,533	487,663

Cash requirements for solar PV installations can be high. Hestia will consider co-investment or fully capital fund projects where this is of interest and the generating potential of your roof is judged to be sufficiently attractive.

The return on investment for solar PV will depend on roof orientation, pitch, the level of overshadowing, generating capacity and level of on-site electricity substitution.

*It is only possible to lock into current FIT rates if installations are complete before April 2012.





With an experienced partner, risks can be minimised. A few initial points to consider:

Deciding whether solar is right for you

- It is best when you have a long term view on your property ownership.
- Owner/occupiers see the highest returns.
- Do you have the necessary capital, or would you look for finance support?

Electricity networks

Does the local network have adequate capacity to export the electricity you will generate, or will it need 'strengthening'?

Hestia are able to quickly determine whether an application for the connection of your solar PV generating station by your Distribution Network Operator (DNO) is likely to be allowed. We would encourage all potential customers to establish the facts regarding local connection options at a very early stage in considering a solar PV project.

Choosing the right PV solution

- Electricity generation potential vs. on-site requirements.
- Is there adequate roof space for a 50kW system?
- Roof space or ground space available - how many panels will FiT in the area available?

Farmers can have particular issues with roofs, including:

- Is any asbestos present in the roofing material?
- Is the site an ammonia-rich environment?
- Not all roofs are suitable. The best roofs are SW through SE facing and have adequate design strength. Hestia offer solutions for solar on 'lighter' roof types.

Hestia is experienced in helping UK farmers overcome these challenges.

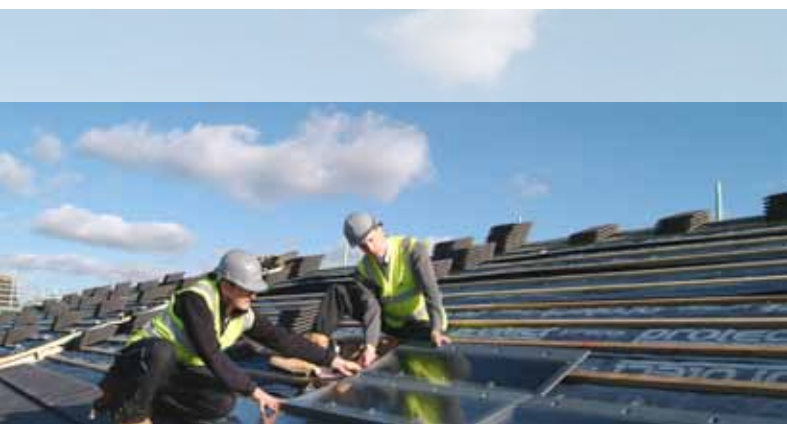
Planning permission

Planning consent will be required although in our experience, this is almost always a straightforward process. Our independent planning specialist has 100% success rate with larger scale solar installations.

SolarProspector™

Hestia has developed a proprietary online tool, which is currently the UK's most sophisticated web based technology available to assess the potential for installing solar PV on a roof.

Identify your roof using aerial imagery and overlay accurately scaled solar panels onto it. Obtain your personal report detailing potential system size, electricity generation and savings. Either try it yourself online, or one of our specialists can assess the potential for installing solar PV on your property.



“Not only will you be doing your bit for the planet, but you will be doing yourself a favour too.”

Power to the People, The Sunday Times

Installation success stories

The general process we follow will be adapted to the characteristics of your site, however we will endeavour to broadly follow the steps below.

Hestia uses a specialist solar sales team who have either lived on farms or worked with farmers for years.

We will design your system and manage the process from contract to connection, keeping you fully informed and making the installation process as easy as possible so you can get on with managing your farm and let us worry about the solar installation.

Hestia offers support for:

- Planning consent. We will put you in touch with rural and solar planning specialists.
- Finance where required.
- Permission from the Network Operator to connect to the grid.
- System design and installation.
- Commissioning and grid connection with full MCS compliance.

You are welcome to visit one of our reference farms by appointment with one of our solar specialists.



“Farmers are well-placed to capture renewable natural energy flows, contributing to national energy security while maintaining food production”

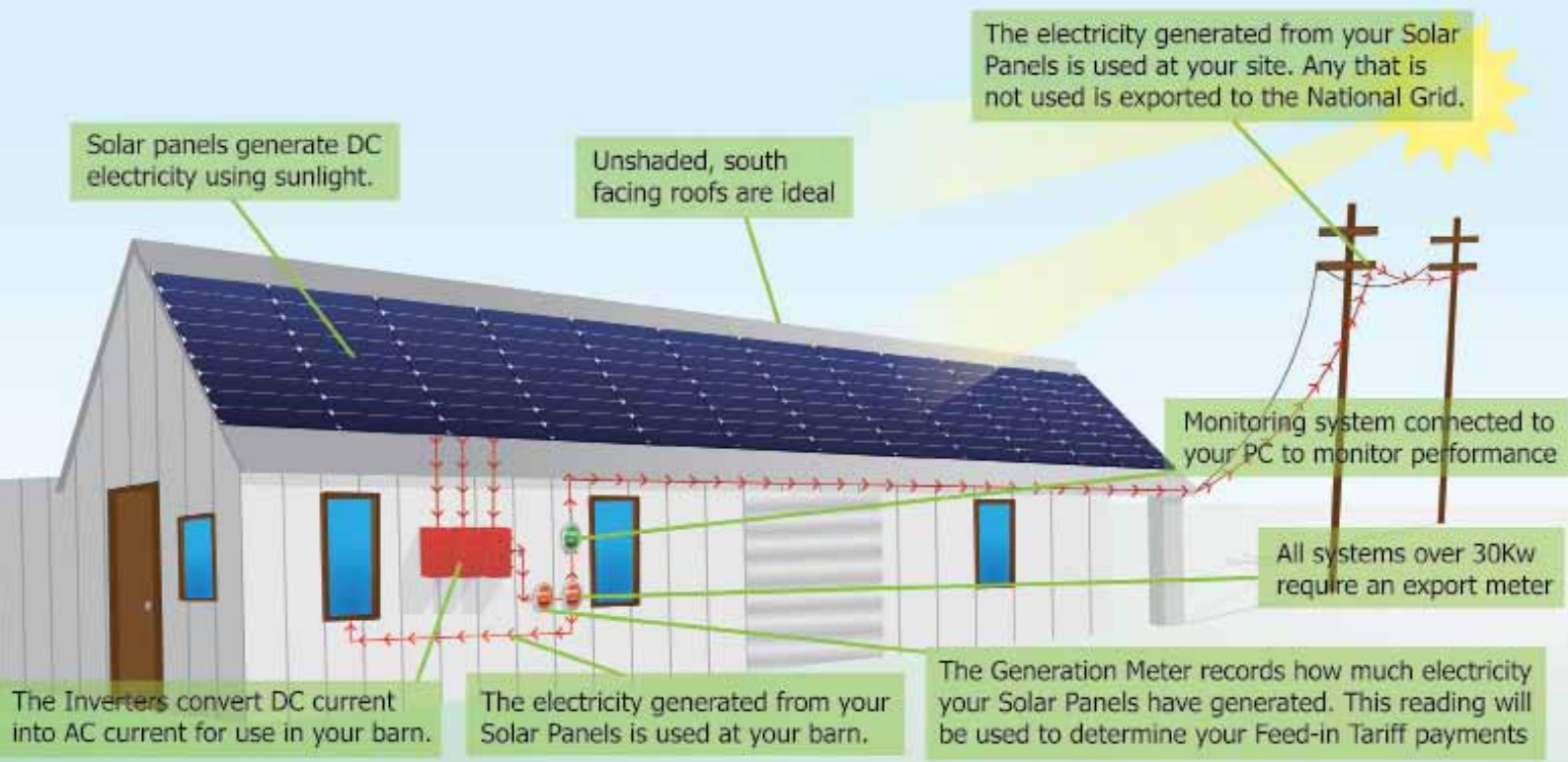
NFU

Solar PV Technology

Your solar PV installation will comprise of panels, a mounting system, inverters, a generation meter, an export meter and optional system monitoring. Hestia only uses the highest quality components. CNPV Power mono-crystalline modules are recommended based on their high efficiency and output, convenient size for efficient roof mounting and overall cost effectiveness. CNPV Power offer Hestia customers a market-leading 25 year power production warranty along with a 10 year manufacturing workmanship warranty.

	Mono Panels	Thin Film	Mounting	Inverters	Monitoring	Export/ Generation Meter
Brand	CNPV	Unisolar	Click Con	SMA	SMA	Elster/EDMI
Efficiency	Very high efficiency and output	Lower efficiency but better for indirect sunlight	Efficient mounting systems allow PV panels to be installed neatly and quickly	Very efficient - converts DC to AC current. Compatible with single and three-phase supplies		
Warranty	25 year power production warranty along with a 10 year manufacturing workmanship warranty	25 year power production warranty along with a 5 year manufacturing workmanship warranty		5 year manufacturing warranty (can be extended)		
Certification	MCS certification, IEC61215, IEC61730 & CE	MCS certification, IEC61646, IEC61730		G59/G83 (grid interface) and EN 60950-1 (electrical safety)		OFGEM approved
Other	Convenient size for efficient roof mounting and overall cost effectiveness	Very lightweight (3.5kg/m ²) and performs well in shade or indirect sunlight. Provides a solution where monocrystalline modules cannot be used	Can be configured to suit specific roof conditions, e.g. to allow greater air circulation where ammonia build-up is possible	Can provide grid protection for systems up to 50kW without the need for costly G59 relays	Monitors and records the performance of the system. Allows regular checking of performance via the internet	All PV systems over 30kW require an export meter in addition to the generation meter





Hestia's installation will include components required to complete a fully functioning MCS compliant system which meets all relevant electrical and building standards. On completion, we will provide you with evidence that the system has been installed to the required standards together with a complete set of manuals and documentation.

Hestia will undertake the installation with due consideration and compliance with all relevant Health & Safety legislation. This will include protecting all workers at the site from falls and may necessitate edge protection - for which we will use a reputable local scaffolding contactor to put rails in place.

There is no risk to the integrity or waterproofing of the roof. During the warranty period, Hestia will undertake monthly monitoring checks for 5 years on the output from the system and replace any faulty equipment without charge within 14 days subject to the availability of parts.

You can rely on Hestia staying in business for the entire period of the warranty. The system will carry a full Hestia 'parts & labour' warranty for 5 years. CNPV Power premium solar modules carry limited performance warranties specifying that units will achieve a minimum of 90% output performance over 12 years and 80% over 25 years.

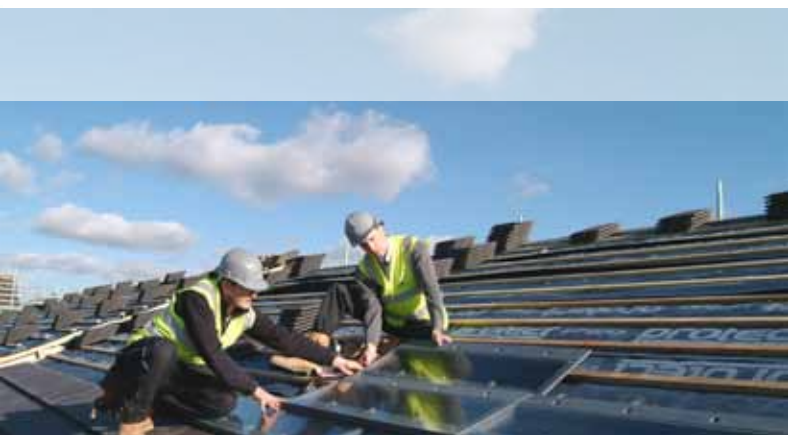


“If you think installing solar panels is only for those committed to ecological issues, a new government scheme designed to increase uptake of renewable energy may make you think again”

The Telegraph

Making it easy for you

1. Call us for an initial discussion with a specialist who can provide you with an indication of cost and performance as well as discuss finance options.
2. If you wish to move to the next stage we will arrange a site inspection to discuss your potential project in detail. We will then prepare a full quotation detailing contract terms and performance warranties.
3. Hestia will contact the electricity network operator to confirm that your supply capacity is adequate and will arrange planning consents.
4. A structural survey will confirm that your roof is suitable for the additional loading from the solar installation. Again, this is something that we can do.
5. We will then re confirm our offer and make any final amendments.
6. On your acceptance of our offer we will take full responsibility for the smooth transition of your site into a profitable generating system.
7. The panels will be delivered to your site and our installation team will begin work (a 50kWp site would take approximately three weeks). Hestia will not cut corners on workmanship or system components.
8. On completion of the works which are non-intrusive, we will make final tests followed by a grid connection and provide you with full documentation and an MCS registration, certificate.
9. During the warranty period we will monitor the performance of your installation against forecasts.
10. Sit back and enjoy your warranted solar electricity for 25 years.





European Business Park
Taylors Lane
Oldbury
West Midlands
B69 2BN

T: 0800 043 2410
E: info@hestiaservices.co.uk
W: www.hestiaservices.co.uk



Printed on 100% recycled paper.

