

R.B. Grant

Electrical Contractors



Solar Panel Installers Scotland Brochure



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VAT REG NO : 271 6048 65



Why choose R B Grant ?

We are a family run business established in 1974 who are trusted installers of Photovoltaic solar panel systems in Scotland and beyond . For the home , commercial and industrial environments , we can provide solar panel systems from 1kw to 50MW , so whatever your solar panel requirements are , you can trust RB Grant to provide a quality and professional service .

We supply and specify a wide range of solar panels and inverters . At RB Grant we can find which solar panel is the best for you . We choose from a range of solar power products to provide the most effective and efficient solar pv panel system for all our customers .

Our fully qualified team of designers , installers and certifiers deliver a quality solar panel installation at a competitive cost . All our installations are covered by a 5/10 year product , 10 year workmanship and 25 year output warranty .

R B Grant Electrical Contractors are members of MCS , REAL and NIC EIC and as such follow a strict code of conduct ensuring that we engage our business in a fair , honest and professional manner , our customers can rest assured that every effort will be made to ensure that their installation will run smoothly as possible .

R B Grant Electrical Contractors offer a free site visit and provide you with a quote to meet your individual needs . Our qualified solar pv installers will discuss and assess the most suitable installation for you and your property



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How do photovoltaic's work ?

Solar Photovoltaic systems (Solar Panels) use energy from the sun to create electricity used to run household appliances and lighting . Using a renewable energy can save you money and help reduce climate change . We are certifiers of construction and carry out the complete installation and design .

Our MCS approval allows our customers to access the " Feed in Tariff " for 25 years . This helps to reduce the payback time to around 8 to 10 years and then the solar panels will make you money for the remaining period . With the rising energy costs and the peak value for the " feed in tariff " , there is never a better time to consider a photovoltaic solar panel system .

When sun light shines on a Photovoltaic / pv panel and an electric field is created across the cell and the electricity will flow .

The advantages of Solar Electricity :

- Reduce your Carbon footprint
- Store electricity
- Reduce electricity bills
- Obtain a solar panel grant or loan
- Sell electricity back to the grid via the feed in tariff at 21.00p
- Renewable and reliable solar energy
- Low maintenance solar
- Silent - No noise pollution

Is your home in a suitable location for Solar panels :

- Ensure your home is not overshadowed by trees or buildings . This can reduce the output of the system
- Do you need planning permission ?

Always obtain planning permission from your local government authority, in case the property is a listed building or in a conservation area . We can help with this

- Is your roof strong enough ?

Solar panels and the mounting can be heavy , the roof must be strong enough to take their weight . We can arrange a structural engineer report

Solar panels come in a variety of styles :

- Grey 'solar tiles'
- Transparent solar panels - For use in conservatories and glass
- Coloured panels
- All black solar panel for a discreet installation
- Hybrid Cells : thin film and crystalline Solar Cells

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Financial Benefits

Photovoltaic panels (PV Panels) convert the suns energy into electricity . The solar system then powers your home and exports any extra electricity to the national grid .

The government have set up the Feed in Tariff to encourage people to generate their own electricity . The electricity that is produced from the solar panels will be metered and will evidence for claiming the Feed in Tariff . The money made will reduce the payback period for your initial supply and installation cost .

You must employ a MCS registered installer for Photovoltaic solar panel systems to qualify for the Feed in Tariff .

R B Grants can help provide the Feed in Tariff using our MCS registration and will supply a estimated payback period .

<u>System Power (kwp)</u>	<u>Generation tariff @ 21.00p/kwh</u>	<u>Export Tariff @ 3.10p/kwh</u>	<u>Electricity Savings</u>	<u>Total Benefits</u>	<u>Payback time</u>	<u>Profit over 25 year period</u>
2.16	£365.80	£35.10	£87.79	£488.69	13 Years 3 Months	£14,493.76
3.96	£670.63	£64.35	£160.95	£895.93	10 Years 7 Months	£30,554.67

** The performance of solar PV systems is impossible to predict confidently due to the variability in the amount of solar radiation (sunlight) in certain locations throughout the year . This estimate is based upon the retail prices in 2012 and is given as guidance , depending on the style and size of the solar system . It should not be considered as a guarantee of performance . Tariffs shown assume installation is between 12 December 2011 and 31 March 2012 . **

- The Generation Tariff : You earn a fixed income for every kilowatt hour of electricity you generate and use in your property.
- The Export Tariff : You earn an additional fixed income for every kilowatt hour of electricity you generate and sell back to the grid.

Zero-interest loans of up to £2000 are available for Scottish householders to help them install heat and electricity generating renewable systems

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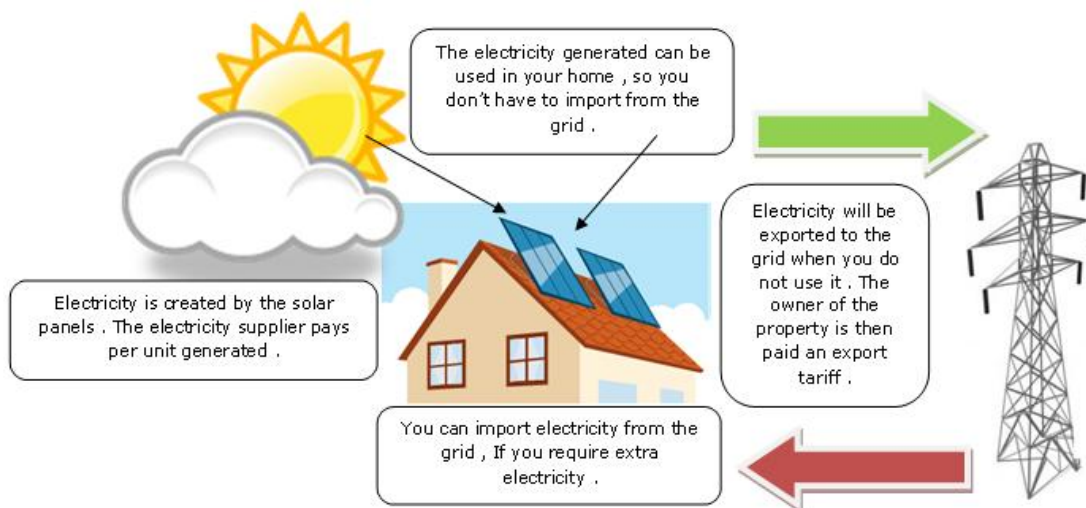
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Design and Installation Process

- Site assessment to system design , supply , installation and maintenance of pv
- Full site suitability survey - no obligation and free
- Help with application of solar panel grants and interest free loans
- Assessment of likely solar panel energy generation and savings
- Advice on planning and building warrant issues
- Site preparation for solar pv installation
- Assistance with connection to grid and the Feed in Tariff
- Full installation service and full in-house certification
- 5 year product and 10 year installation warranty
- Annual maintenance contracts and support



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Which solar panels are best for you?

There are so many different solar panels to choose from , which solar panel is the best for you ? There are 3 main categories of Photovoltaic solar panels used in the UK which are Poly , Mono and hybrid . You want your solar panels to perform well over the 25 year Feed in Tariff period so knowing the best the best option is important for your investment . By choosing the correct system you really can make money producing your own electricity . It is very important the system is installed by a registered MCS Photovoltaic solar panel installer who will provide a reliable service .

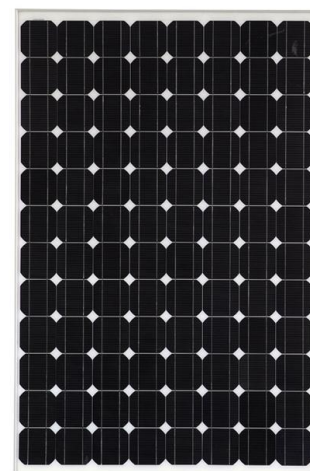
Polycrystalline solar panels

Polycrystalline solar panels are one of the first solar panels to be produced . They incorporate multiple small silicon crystals , normally produced from the left over silicon from monocrystalline solar panels . The advantage of Poly PV panels is they are very cheap to produce and are the most cost effective choice . They are however not as efficient as mono and hybrid panels are normally larger for the same KW output . The panels are normally blue in colour and have the look of broken glass stuck together . For someone who is thinking about installing solar panels on their home or commercial premises , a poly-panel are very cost effective initially but will not provide an optimum yield over 25 years . It can however be used effectively when there is no problem with a space factor on the roof or ground mounted .



Monocrystalline solar panels

Monocrystalline solar panels are made from a single silicon crystal unlike poly panels with multiple . The Mono solar PV panel are more expensive than the poly to produce and are more therefore more expensive to buy . The biggest advantage of Monocrystalline PV panels is the efficient output which will provide a greater yield during the 25 years of Feed in tariff. The mono solar panels are also available in a number of colours but are commonly black . If you initially have more money to invest in a solar power system then a Mono panel will be a better choice for gaining a bigger profit over 25 years .



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Hybrid Solar panels

Hybrid solar PV panels incorporate and combine the advantages of both organic and inorganic semi-conductors . Hybrid PV panels have the advantage of being highly efficient and also small in size with a greater Kilo Watt rating per square metre than poly or mono. They are commonly more expensive than both mono and poly solar panels but can be used where the position is optimum and the space factor available is limited . The disadvantage to Hybrid panels is not just the cost but this is a relatively new technology although many of the leading manufacturers have or are building efficient and reliable models .



So what PV solar panels are the best for you ? At RB Grant we pride ourselves in finding the best solar power system for our customers. We provide a free estimate and design for all solar panel systems in Scotland . All services are provided by our company from roofer , scaffold erection and qualified electricians and photovoltaic panel installers . Contact us below for the solar panels installers in Scotland you can trust



Solar water heating systems (Thermal)

R B Grant Electrical Contractors supply and install solar hot water heating systems throughout Scotland from our Fife base and are MCS approved. The solar water heating system consists of a solar water panel and a storage water tank . Solar water heating systems are an effective way of using renewable energy from the sun to produce hot water .

Solar panels do work in the Scottish climate as they are powered by the suns radiation . Throughout summer months solar panels can produce around 60% of the hot water required , depending on the size of your system .

During the winter months the solar system is not as sufficient as in the summer , therefore the conventional heating system will be used to produce hot water . The solar system will still work in conjunction with the conventional heating system throughout winter , reducing your winter bills .



Solar cylinder hot water systems :

- Separate solar cylinder
- A twin-coil cylinder
- Combi boiler

Solar water heating is used for :

- Heating hot water
- Heating water for swimming pools etc
- Solar water heating is the cheapest renewable installation for the home
- Solar can also easily be added to other heating systems

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Types of solar water heating :

Flat plate :

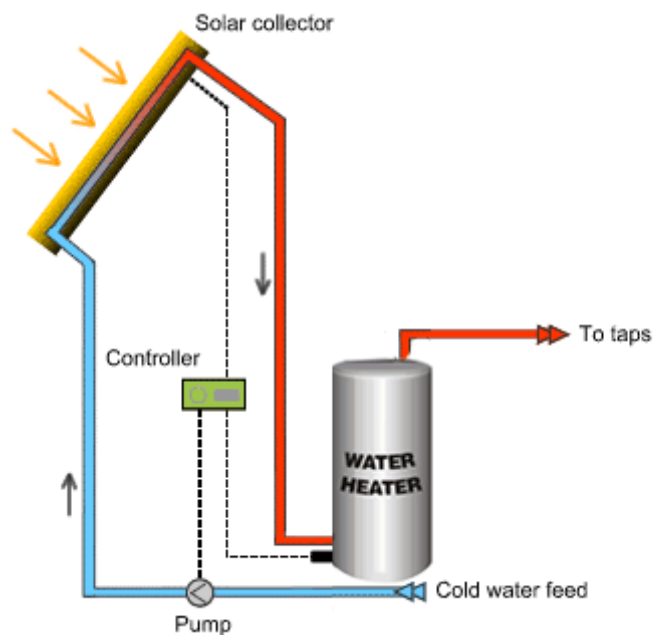
- Most common
- Cheaper
- More robust

Evacuated tubes :

- More efficient
- Can be sited on flat roofs

Installation involves :

- Fitting system to roof
- Connection into the house hot water system
- Power to the pump
- Controls and sensors



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