



Your Renewable Energy Specialists

Our mission is to champion energy efficiency and make a positive impact on the environment and the communities we serve.



About Us

At **Eco Home Group**, we value integrity, transparency, and customer-centricity. We are passionate about educating our clients, providing personalised recommendations, and delivering exceptional service from project inception to completion.

Our team of skilled professionals shares our vision of promoting renewable energy adoption, environmental stewardship, and responsible resource management. Together, we work tirelessly to empower our clients to embrace clean energy, conserve resources, and build a better, more sustainable world for future generations.



Our History

Eco Home Group was created to help people understand energy efficiency in new ways by exploring high-tech and efficient solutions. There is a real push for more energy-efficient standards and regulations, and we want to be part of the movement. Our aim is to provide businesses and homeowners with ideas and concepts that have a positive impact.

Our Purpose

Founded in 2015, we offer consultancy services to architects, residential homeowners and commercial property owners. We'll help you harness the power of sustainable energy wherever possible and ensure energy efficiency is a top priority. Whether that means helping you to retrofit or build from scratch, we're here to provide valuable input. Our solutions can result in real and substantial energy cost savings and reduce your carbon footprint.

How We Help You

If you're looking for insight on how to make your home, commercial property or architectural designs more energy efficient and sustainable, our consultancy services are perfect for you.



Heat Pumps

Heat pumps offer a highly effective and energy-efficient way to heat your home. They work by taking outdoor heat and transferring it to water. That hot air can then be used in underfloor heating or radiators, for example.



Solar Thermal

Solar thermal panels have become more common. Not only do people see the need for them, but they recognise just how transformative they can be in terms of renewable resources for the future.



Solar PV

Solar electricity panels, or solar PV (photovoltaics), are another sustainable and renewable form of energy. With this solution, panels are attached to the roof of the home to generate renewable electricity by harnessing the sun's power.



Other Technologies

We can also advise regarding the solar power battery system, Inverter Types and Power Optimisers.

Heat Pumps

Heat pumps offer a highly effective and energy-efficient way to heat your home. They work by taking the heat from the outdoors and transferring it to water. That hot air can then be used in underfloor heating or radiators, for example. It's all about moving heat from one place – the outdoors – to another. Heat pumps are capable of getting a 300%-400% efficiency rating, which is astounding. The fact is that the heat energy a heat pump produces far exceeds the amount of energy the actual unit is using.



How Heat Pumps Work

A heat pump consists of a compressor and a circulating structure with a gas refrigerant or liquid in it. The heat pump itself uses very little electricity, especially when you compare it to a traditional electric boiler.

As the pump absorbs outside heat, it compresses and transfers it to your home. This is done via a heat exchanger. You can now use this heat to power your underfloor heating system, hot water cylinder, or radiator.

Why Choose an Air Source Heat Pump?

- ✓ **Efficiency.** When compared to traditional electric boilers, air source heat pumps are far more efficient, achieving an average efficiency rating of between 300% and 400%.
- ✓ **Environmentally Friendly.** Thanks to lower carbon emissions, installing a heat pump can help you reduce your carbon footprint and do your part for the environment and a greener future.
- ✓ **Life Span.** Most air source heat pumps will last 20 – 25 years if maintained correctly.
- ✓ **Low Maintenance.** Heat pumps are one of the most stress-free ways to heat and power your home because they require minimal maintenance.

Is a Heat Pump Right for Your Property?

At Eco Home Group, we can help you determine whether an air source heat pump is right for your home based on its size, insulation and your existing heating system.

Heat pumps are a better choice for well-insulated homes, but larger properties, including commercial spaces, can benefit too. However, more than one heat pump may be required in a larger building. The same would apply if you have higher heat demands.

Another area where insulation becomes important is heat pump efficiency. Air source heat pumps work more efficiently in homes that are well-insulated.

Lastly, homes that rely on radiators for heat may need to consider whether a larger unit or even underfloor heating is required to ensure a heat pump can supply enough heat to the home.

Heat Pump Installation and Running Costs

There is no set cost for running an air source heat pump. The size of your home, heat pump, and your existing heating system, will all play a role in the overall cost. However, here are some average costs that you can work from as you plan your next steps.

Installation Costs

Heat pump costs range from £7,000 to £15,000. The complexity of the installation, the provider you choose, and the size of the system will dictate the final cost.

Should you need to replace your radiator or install an underfloor heating system to boost heating efficiency, this will naturally increase the overall cost.

You can look into the government's Boiler Upgrade Scheme (BUS) to mitigate some of the costs.

Operational Costs

Your heat pump operating costs will also depend on factors such as the size of your system, energy usage, electricity tariffs and your home's insulation. The better insulated your home is, the more efficient your energy system will be.

Combining your heat pump with additional energy-saving tactics, such as draft-proofing and smart heating, can further reduce operational costs. These work by reducing the amount of heat your home needs, which means your pump doesn't need to work as hard.

Reducing Heat Pump Costs Through the BUS

The Boiler Upgrade Scheme (BUS) is a government initiative that offers financial support to homes and businesses that choose to install low-carbon heating solutions. Reaching net zero emissions by 2050 is the goal behind the BUS.

Grants of up to £7,500 are available for heat pump installations, provided:

- ✓ You reside or own a property in England or Wales.
- ✓ An Energy Performance Certificate can be produced with no outstanding recommendations.
- ✓ The installation will replace any existing fossil fuel systems, including oil and gas.
- ✓ The system meets the full heating and hot water demands of the property.

Turn to Eco Home Group for Guidance on Heat Pump Installations

If you believe your home or commercial space could benefit from a heat pump installation, we can help get you started. We're happy to talk you through all the benefits and the next steps to take to save on energy costs and do your part to reach a net zero target by 2050. Our team has years of experience with energy-efficient systems for residential and commercial spaces.

FAQs

How much money can I save by installing a heat pump?

Heat pumps are 2-4x more efficient than a traditional boiler, but the amount of money you can save after installation will depend on several factors, namely the type, size and efficiency of the pump. Some UK customers have reported average savings of up to £200 over a 6-month period.

Do heat pumps work with radiators?

Yes, heat pumps can be used to heat a home via a radiator or even an underfloor heating system. Radiators are usually the preferred option for heating the upper levels of a home.

Can Eco Group Home install a heat pump for me?

While we don't deal with any installations ourselves, we can advise you on the best types of heat pumps to purchase for your home or commercial space, where to install them, and what products you can pair them with for maximum energy efficiency.

Why are heat pumps better than boilers?

The UK is currently working on reaching a net zero target by 2050, which is why the government has launched the boiler upgrade scheme. Heat pumps are fast becoming the preferred option for heating homes and commercial spaces because they're more efficient, the cost of gas is rising and grants are available too. There has never been a better time to meet with Eco Group Home to discuss your heat pump options.

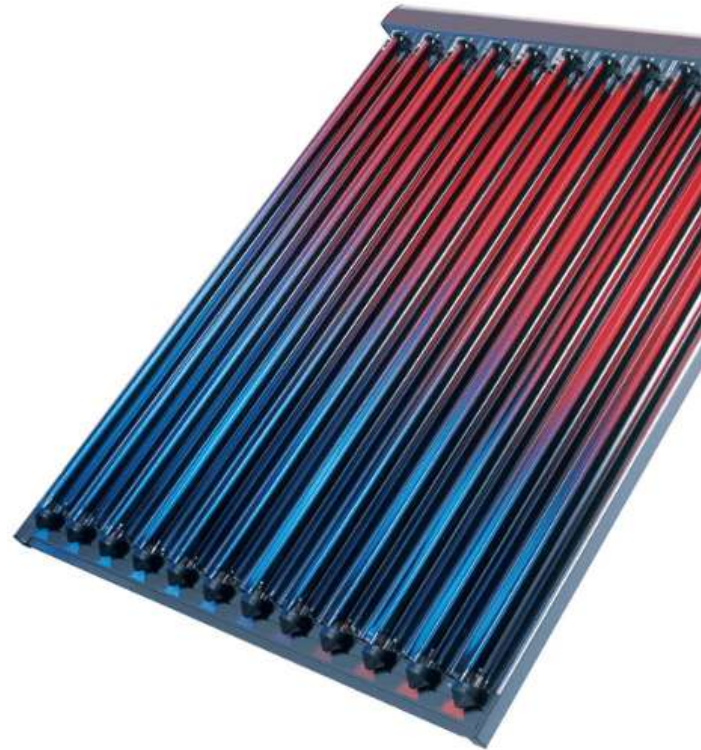
Are heat pumps a good option for commercial spaces?

Commercial heat pumps are readily available throughout the UK and are an energy-efficient way to heat your commercial space, while saving money and reducing your carbon footprint at the same time. The average commercial heat pump will only need to be replaced every 15+ years.

Solar Thermal

Solar thermal panels have become more common. Not only do people see the need for them, but they recognise just how transformative they can be in terms of renewable resources for the future. Today's solar panels are much more high-tech and impressive than the first models were, showing that renewable and sustainable energy has come a long way.

Solar panels are installed on the roof of the home or commercial property and then use the sun's energy to generate heat. Heat transfer takes place in fluid and then it can be used for heating and producing energy. Besides the solar panels, this system also requires an immersion heater or collector and a boiler.



As for how much energy the panels produce, there are many factors involved. It is based on how much sun the home or commercial property gets, how many panels are attached to the roof and how big they are. The more panels you have, the more energy you're capable of producing.

We invite you to connect with us and learn more, as we take you through all the benefits of solar thermal panels.

How long does it take to install solar thermal panels?

The average installation takes 1 – 2 days, but larger installations will take longer. It should be noted that you will be without hot water during this time. Your installer will also need to register your system with the Microgeneration Certification scheme once the installation is complete. Please note that Eco Home Group cannot assist with physical installations, but we can provide you with the guidance you need to get started.

Do solar thermal panels work at night?

No, your solar thermal panels are not operational at night. However, you can still enjoy the benefits of your panels long after the sun has set. Additional components and considerations are required to make this system work correctly and efficiently outside of daylight hours, which we are happy to take you through.

Are solar thermal panels worth the cost?

Solar thermal panels are certainly a long-term investment, but the returns are noticeable, even after the first year. The average system can cater to around 60% of your hot water needs and most consumers enjoy savings of about 10% on their energy bills every month. However, this percentage will most likely rise as energy prices increase over time.

How many solar thermal panels do I need?

This mainly depends on the number of people in your household, with the average 3-person household using 7.94kWh of electricity per day and 32.87kWh of gas per day. The general rule of thumb is to install 1 – 2 square meters of thermal panels per person in your household.

Is my home suitable for solar thermal panels?

The homes that are best suited to solar are south-facing, but homes with south-west and south-east-facing roofs can still work. Roofs should also be at an angle of between 20 and 50 degrees. There is the option of installing the panels on the ground too, provided they'll receive full sun. Over and above the position of the home and its roof, you will need to take your appliances into consideration. Not all appliances are compatible with solar water heating. Eco Home Group can evaluate your home and discuss your specific requirements to help you decide on the most suitable solar thermal solution.

Solar PV

Solar electricity panels, or solar PV (photovoltaics), are another sustainable and renewable form of energy. With this solution, panels are attached to the roof of the home to generate renewable electricity by harnessing the sun's power. They do a great job at reducing carbon footprints and can result in huge energy savings.

In terms of commercial properties, a large number of these panels can be attached, thereby generating huge amounts of energy. This is not to say they're not effective for homes. They will still offer significant savings depending on how many panels are installed.

If you were to look at a solar panel up close, you would see that it is made of many layers of a material that offers semiconducting properties. Silicon is a common material used on these panels.



What's great about these panels is that you can still generate electricity on cloudy days. People are often under the impression that it has to be full sun to be effective, and that's just not the case. The stronger the sun, the more electricity you generate, but even cloudy days will give you something.

One of the biggest considerations when looking into solar PV panels is how much space you have. The more room a roof has, the better. You also want to place the panels where they will get the most sun in the day. If the roof of a commercial property or house is shaded by a chimney, other buildings or large trees, look for ways to mitigate how much shade they produce.

These are all the issues we can address as we discuss your solar PV options. This can be a great way to cut down on energy usage and realise real savings. **Contact us so we can have an in-depth discussion with you.**

How much energy can PV solar panels generate?

This mainly depends on the size of a typical system. A roof that is well equipped with PV solar panels is capable of producing over 3,000kWh per year. Other factors that can impact how much energy is available to you include your current usage as well as the placement and angle of the panels.

Are solar PV panels worth it?

Rising energy costs are encouraging countless home and commercial property owners to install PV solar panels. The average homeowner in the UK is managing to save around £350 a year on their energy bills. Over and above these savings, PV solar panels will help you reduce your carbon emissions. In most instances, you can expect to break even on your solar installation in 15 years. If you need further advice on whether solar panels are right for your property, our team of experts is ready to answer your questions.

What are the factors that affect the solar panel break-even point?

Even though the average break-even point for solar systems is around 15 years, there are a few factors that can reduce this waiting period.

- **Sunlight.** Homes that receive more sun during the day and throughout the year have the potential to generate and store more energy.
 - **Giving back to the grid.** Exporting energy to the national grid is another way that you can get money back and save.
 - **Solar battery systems.** By storing any excess energy in a solar battery, you ensure you're using all the electricity your panels generate instead of wasting it.
 - **Usage times.** The more electricity you can use during daylight hours, the less reliant you will be on the national grid. Installing a solar battery system is what will allow you to use any excess energy during the evening too.
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Is my property suitable for PV solar panels?

The only time a home or building wouldn't be suited to PV solar panels is if the roof is north-facing. Solar panels that don't receive enough sunlight aren't a good investment. If your roof does tend to get a lot of shade, regardless of its direction, you can always consider power optimisers. The Eco Home Group team can gladly take you through your options upon evaluating your home or commercial space.

Can solar panels increase the value of my property?

The current climate crisis and rising energy costs mean solar panels can increase the value of your home. These low-maintenance energy solutions can boost your Energy Performance Certificate rating by up to two grades, which is attractive to potential buyers.

Other technologies

Solar Power Battery System

Solar power batteries work by storing any excess energy generated by a home. For example, if your solar panels can generate more power than your home or building needs – which is possible – the solar battery system stores it. That same power can be used to power things such as small appliances. Backup power also comes in handy during power outages, cloudy days and overnight hours.

Inverter Types

Solar inverters are an important part of your quest for a more energy-efficient home or commercial property. Inverters work to transform the power that is being produced by solar panels into usable energy. Without an inverter, the power generated by your solar panels can't be used. Generally speaking, there are three types of inverters available, namely microinverters, string inverters and power optimisers.

Power Optimisers

Power optimisers are a type of inverter that is used in conjunction with a solar panel system. These work by optimising or boosting the current that is being fed to the central inverter. They are more cost-effective than micro-inverters and more efficient than traditional string inverters. These are explained as DC-DC converters, working to change the voltage. They collect and then feed the property's solar energy production.

Solar Power Battery System

FAQs

How many solar batteries do I need to power my home?

The average UK household will only need one solar power battery system. However, larger households that require more PV solar panels may benefit from having two to three.

Are solar battery systems worth the investment?

Without a solar battery, you are wasting the additional electricity that your solar panels are producing every day. Solar batteries will make you far less reliant on the national grid and can potentially reduce your solar break-even point.

How long can a solar battery run my home?

If you don't run any major appliances, you can power your most essential electrical systems for about 24 hours, provided the solar battery is fully charged. If you use the battery while it's still receiving energy from your solar panels, it can last even longer.

Can solar batteries be used in commercial spaces?

Commercial solar battery systems are readily available in the UK, ensuring you can still keep your business going using essential electricity systems during an outage. Commercial solar batteries are designed to store and provide more electricity than a standard household battery and will usually require more solar panels. We are happy to provide you with more guidance on what would work for your commercial space to reduce energy costs and efficiency.

What can reduce solar battery life?

The average battery has a lifespan of about 15 years, but there are several factors that can reduce this. One is its cyclic life. Depending on the type of battery, it can last anywhere between 300 and 5000 cycles before it needs to be charged. Once the cycle limit is reached, the battery will no longer be able to store or discharge energy. Another is discharge depth. You want to make sure you're staying between 50% and 80% to prolong battery life. Lastly, there's battery temperature. Your battery can last longer if it operates at 20°C (68°F) or lower.

Inverter Types

FAQs

How do I calculate what size inverter I need?

Inverter size depends on the power in watts or amps of the appliances you need to operate. You can find this information on the specification labels. Inverters can range from 50 to 50,000 watts, but anything over 11,000 is generally used in commercial and industrial buildings. Eco Home Group can help you determine the type of inverter you need based on your specific power requirements.

Is an inverter necessary if you install solar panels?

Yes, an inverter is essential for running your solar energy system. It's responsible for converting direct current (DC) electricity, which is generated by the solar panels, into alternating current (AC) electricity, which is what your home or property needs to run electrical systems.

What does a typical inverter cost?

Smaller inverters, which last anywhere from 10 – 25 years, start at around £20 and can cost us much as £1500. For larger inverters, which last at least 25 years, you could spend anything between £1200 and £1500.

What can damage an inverter?

Overloading and voltage spikes are some of the most common reasons why an inverter wouldn't last as long as it could. Installing an inverter in a space that gets too much sun could cause it to overheat, which can also lead to lasting damage. The same applies if you install your inverter in an area with high moisture and humidity levels. Lastly, there are power supply problems. If the power supply to your inverter is unstable, it can cause damage.

Where should I place my inverter?

In most instances, inverters are installed in a garage or utility room. They can also be mounted outside, provided they're not exposed to excess heat and moisture. If you have any questions about the best place to install your household or commercial inverter, Eco Home Group is available to guide you.

Power Optimisers

FAQs

When would I need power optimisers?

Power optimisers are designed to boost solar panel capabilities. They're ideal for roofs that are partially or heavily shaded in certain areas. You would only need to attach power optimisers to solar panels that don't get full sun during the day.

How long do power optimisers last?

Most solar power optimisers come with a 10 – 25 warranty, offering you many years of energy savings. They're also easy to install and uninstall, so you can take them with you to a new home if need be.

Are power optimisers worth the extra expense?

Power optimisers ensure that all your solar panels are working as efficiently as possible, including those that receive more shade during the day. They're also a good investment if you have a more complex roof layout, boosting the efficiency of your entire solar power system.

What is the difference between a micro inverter and power optimisers?

A micro inverter will convert DC energy into AC energy at the panel site. Power optimisers, on the other hand, are located behind a solar panel and will boost the efficiency of a panel – it won't be able to convert electricity alone. Power optimisers work with inverters to complete the energy conversion process.

What do power optimisers cost?

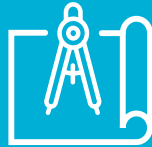
The average power optimiser costs about £40, but keep in mind that you won't need an optimiser for every solar panel, only the panels that don't get as much sun. If your roof receives enough sun throughout the day, you may not need power optimisers at all. If you're feeling unsure about the efficiency of your solar panels, contact Eco Home Group.

Who We Work **With**

We are committed to helping you find reliable, efficient and convenient renewable and sustainable energy options. Maybe you've started research and need a little help getting to the finish line. Or, perhaps you're coming to us with no background information at all.

Besides lowering your carbon footprint, transitioning to renewable energy provides cost savings, which means more money left in your household or business budget.

No client is too big or small. Let us show you just how helpful we can be thanks to our quality consultancy services.



Architects

Here at Eco Home Group, we want to work with you. By delivering insights, sharing our many years of experience, knowledge and skills, and providing you with the data, we can help you transform your designs.



Domestic

Are you a homeowner that wants to do more for the environment? Do you want to find a way to lower your home heating and energy costs? Do you want to ensure that your home will be able to adhere to the rules and regulations that will come into place over the coming years? We can help you with all those issues and more.



Commercial

Commercial property owners play a big role in helping the UK reach its net zero goal by 2050. Without them being onboard, the goal will be impossible to reach. If you own a commercial property, we urge you to reach out and speak to us about your many options.

Group Companies



CosyPanels®

CosyPanels® are exclusively engineered and manufactured to insulate conservatory roofs. Certified for UK weather, they combat the inherent issues of temperature control, UV Glare and noisy outdated polycarbonate roofs.



All Seasons Roof

All Seasons Roof is one of the UK's leading conservatory, roofing and insulation companies. They're a nationally recognised and award-winning, customer-focused company. They're also fully accredited and have strategically positioned offices in Harrogate, Cardiff and Dorset, covering England and Wales.



Case Studies

Mr Parker (Redhill)

Heat Pump

Mr Parker was off the grid for his gas supply, which required organising and resulted in volatile costs. Mr Parker wanted an energy source that was cleaner and more efficient with better reliability. After exploring the alternatives, including Biomass and solid fuel, Air Source Heat ticked all the boxes. The incentives were very encouraging, and the timing was perfect to make the move to renewable energy, which was cleaner and more reliable. The results were better than expected, and, in his words, "I don't know why we waited to do this".

- ✓ 3 bedroom Chalet Bungalow
- ✓ 3390 kg/yr Saving
- ✓ LPG Gas Boiler (Original Heating)
- ✓ **36% Saving on Heating and Hot Water**
- ✓ 16KW Heat Pump (New Heating)

Mr Taylor (Brighton)

Solar PV

Mr Taylor was limited in terms of roof space but really wanted to reduce his dependence on the national grid. He wanted to adopt solar PV to achieve this. Our specialist roofing and PV engineers took the time to assess the roof and advised on some options available to utilise the roof space. Upon presenting the design, Mr Taylor considered a range of alternatives, including a wind turbine, but our recommendations were accepted as the best option, so we progressed with arranging the installation and notifying the grid. Mr Taylor really loved the idea of sending excess energy back to the grid as he spent all his life drawing energy from it. He has always wanted a better level of independence, and solar PV really was the answer.

- ✓ 2.5KW PV System
- ✓ 1236 kg/yr CO2 savings
- ✓ 2146 KWH (MCS Estimate)
- ✓ **Estimated On-Site Savings of 40%**
- ✓ 2795 KWH (Manufacturer Estimate output)

Let's Talk



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