



*Cleaner Air*  
SOLUTIONS UK LIMITED  
0800 061 2041

clean energy for eons to come

# about us

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*Cleaner Air Solutions UK Limited, has been established to provide a bespoke service providing specialist Solar Energy Systems to the private and public sector, companies and individual property owners.*



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Cleaner Air Solutions prides itself upon its professional, attention to detail. We always ensure that our clients receive only the highest standards of quality in everything we do, from answering the initial phone call or email, through to the final commissioning of their system and the back up service that follows on.

The power of the sun is free to all of us. We at Cleaner Air Solutions simply help to provide you the systems to harness that power, each and everyday, in a variety of ways. Whether you want Solar PV Panels/ Modules to generate electricity, a Wind Turbine Generator, or a combination hybrid system, ie Solar PV linked to a Wind Turbine.

Cleaner Air Solutions can offer you options to maximise this free source of energy, saving your costs and the planet at the same time.

## *Why Cleaner Air Solutions?*

Simple really, we decided that we would challenge ourselves to create a company bringing this technology to the public at large. It seemed to us that there was a lot of talking about it, but very little in the way of direct action, resulting in the low number of Solar Panels on homes and business's.

Our aim is to see the Solar Panel on properties, very much in the same way that people now take for granted seeing a Satellite TV dish. The difference, however, being the Solar panel is the power source for the Satellite dish receiver, TV and DVD, as well as all of the other household electricals that we all now take as standard in our homes.

Cleaner Air Solutions believes that given the right message, backed up with the right quality of product and service, we can harness the power of Mother Nature, today, tomorrow and for - "Eons to come".

The team at Cleaner Air Solutions very quickly realised

that given this new technology, it needed to be conveyed to each customer - "individually". Each one of us, has our own preferences and opinions, so when it comes to investing in Solar solutions, we treat every case - "individually".

This has allowed Cleaner Air Solutions to establish itself in the market place based on quality and not just the fact that we use the market leading products on our installations. Quality of service is our standard, "Second best is not an option".

Cleaner Air Solutions; a breathe of Fresh air, for everyone, turning tomorrows technology into reality today.



“delivering,  
tomorrows  
solutions  
today”

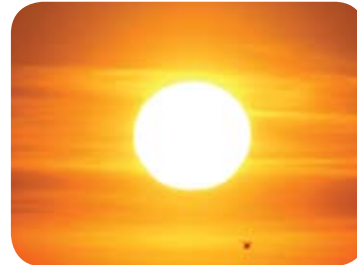
# renewable energy

## Did you know?

For every 1000 kilowatt hours of mains generated electricity it produces approximately 430kg of carbon emissions. By installing even a 1kw solar PV array in just 10 years you would prevent over 3 tonnes of carbon emissions - saving the environment and saving you money.

## Solar

*We've used the Sun for drying clothes and food for thousands of years, but only recently have we been able to use it for generating power.*



The Sun is 150 million kilometres away, and amazingly powerful.

Just the tiny fraction of the Sun's energy that hits the Earth (around a hundredth of a millionth of a percent) is enough to meet all our power needs many times over. In fact, every minute, enough

energy arrives at the Earth to meet our demands for a whole year - if only we could harness it properly. **NOW YOU CAN!!!**

A Solar Photovoltaic (PV) module, which is made up of Silicon cells, prepared in such a way that when the sun's rays pass over them they

become "agitated" creating an electric charge, which is then fed to a cable output. This electric current is in DC (Direct Current) format.

It is then converted via an inverter to AC (alternating current) which is compatible with our mains electricity supply.

“clean and inexhaustible energy!”

## Wind

*We've used the wind as an energy source for a long time. The Babylonians and Chinese were using wind power to pump water for irrigating crops 4,000 years ago, and sailing boats were around long before that.*



Wind power was used in the Middle Ages, in Europe, to grind corn, which is where the term "windmill" comes from.

The UK is the windiest country in Europe, so much so that we could power our country several times over using this free fuel.

A modern wind turbine is designed to run continuously for over 20 years, or for 120,000 hours. By comparison, the design life time of a car engine is 20 times less at only 4,000 to 6,000 hours. Wind turbine generators, range from 500 watts power

through to those capable of generating up to 30 mega watts (enough to supply 10 average UK households). Wind turbine generators are now lighter and far more efficient, with greatly enhanced reliability, and far less service maintenance required.

## Hybrid Systems

Solar PV electric systems, coupled to the right small scale wind turbine provide a real viable option to provide electrical energy solutions for various applications, especially, if you

want alternatives to standalone diesel electric generators. Together they compliment each other to provide a virtually uninterrupted energy supply.



# types of system

## grid-connected

This is when Solar PV modules are mounted or integrated onto or into a building. This is the most common form of Solar electrical installation, which is then connected to the Mains Grid Supply, hence the name 'grid-connect'. The PV system is connected via the relevant

Isolators and metering systems to the building's electricity supply and from there into the local electricity network. The Solar generated electricity is used to supply your requirements, or when there is little or no requirement, is transferred back to the mains grid and sold to

the utility companies. Outside daylight hours electricity is taken back from the mains grid. A grid-connected Solar PV system directly saves electricity produced by coal, oil, gas or nuclear power stations.

## autonomous

A PV system is autonomous (stand-alone) when it is used 'off-grid'. The electricity is stored in batteries, providing a constant

supply of DC electricity. These systems are most commonly used in remote locations where other energy sources are not

readily available, or where there is a need for the device to be portable.

## hybrid

Combining grid-connected with autonomous systems can provide a consistent source of electricity. Integrating an additional source

of power generation, such as wind turbines, could further enhance the benefits of using renewable energy.

# shapes & sizes

PV cells generally come in the form of rectangular panels of variable sizes, or in the form of individual solar slates/tiles, that are usually installed on the roof in very much the same way as roof slates/tiles.

the larger panels can either be mounted onto a framework which is secured to the roof or integrated in a similar fashion to the slates/tiles.

Both the rectangular panels and the individual solar tiles, are invariably fitted in multiples. They can be configured to fit in portrait or landscape format as well as varying shapes to avoid obstructions such as roof lights/chimney stacks, or in a random format for aesthetic functionality.

Cleaner Air Solutions use the latest Solar PV technology which allows more flexibility in the methods and location of fitting. This means a wider range of applications can be covered such as conservatory roofing, cladding, the frontage of buildings and more.

The solar slates/tiles are always integrated into the roof, but

The chosen installation method has no effect on the output of the panels.



# lifespan

All of the solar PV modules we supply and install come with a 25 year manufacturer's warranty, with an installed working lifespan believed to be

up to 50 years (although output efficiency may reduce in latter years). Similarly today's Wind turbine generators are now lighter and far more efficient,

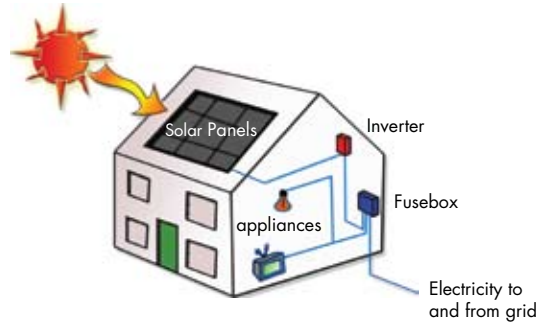
with greatly enhanced reliability, and far less frequent service maintenance required.

“  
in 40 minutes,  
the sun's rays  
on earth's  
surface  
provides  
enough energy  
to power the  
world for a full  
year  
”

# how it works

The power of the Sun's rays, if harnessed by Solar Photovoltaic Panels generates electricity that is Clean, efficient and infinitely—Renewable.

This technology is available to you today, Cleaner Air Solutions will design, build and install an energy generating system tailored to meet your needs, that is a safe, reliable, source of electricity for years to come—without costing the Earth.



1



## Solar Cell (PV) Modules

A photovoltaic module transforms solar energy into electricity.

2



## Inverter (Power conditioner)

The inverter converts DC electricity generated by the PV module into AC electricity and automatically controls the entire system.

3



## Indoor Mains distribution panel

The panel delivers appropriate loads to household electrical appliances.

4



## Watt-Hour meter

The amount of excess electricity sold and electricity purchased are calculated from the respective watt hour meters.

By investing in the latest technology, from the world leading manufacturers, we ensure that we are at all times, maximising our customer's utilisation of these renewable natural resources.

Solar PV - modules, panels, tiles and a combination of these can be blended together to provide a highly efficient source of electricity in Grid Connected systems, where customers have access to the national grid.

Or, for those who need a Stand Alone source of electricity

generation, we can also tailor a system that combines several of the available technologies - Wind Turbine generators, ranging from 500K/w power through to those capable of generating up to 30 mega watts. When coupled with a quality Solar PV system they compliment each other to provide a virtually uninterrupted electricity supply. These are "Carbon Neutral", so will continue to generate electricity, requiring relatively low levels of maintenance throughout their lifespan.

Cleaner Air Solutions systems are all backed up, by not only the equipment manufacturer's warranty, but also our own extendable warranty packages, to give you - our customer "Total peace of mind - for Eons to Come".

Now would you like to know how you can make a difference - by investing in a renewable energy system today—saving our planet for future generations?

“ Just 10 kilowatts of solar PV power offsets the emissions of 100 cars ”

## what domestic grants are available?

Government grants are available to help cover the cost of a PV installation.

For domestic properties, the grant can be up to 50% of the total cost.

We can help process grant applications on your behalf.

Grants are on a first come first served basis.

# ***making change***

Want to know more about how you can make a difference?  
Today, tomorrow and beyond, to your electricity bills, the planet, the future?

## five **easy** to do energy saving actions



- 1.** Energy saving light bulbs,
- 2.** Loft and cavity wall insulation
- 3.** Double or triple glazing
- 4.** Switching off appliances
- 5.** Closing doors

## ***five steps to your own clean energy solution***



Mr and Mrs Average live in a 3 bedroom house in Anytown. They are conscious of their environment. They want to "do their bit" to reduce climate change.



They also want to save money on their energy bills.... particularly on their electricity which has increased by around 20% each year.



They have already taken the 5 easy steps to reduce their electricity usage.



Cleaner Air Solutions offered a solution. They fit a combination of solar panels and wind turbines to create a continuous 240v electricity supply, enough for their requirements.



All for the same cost as a fitted kitchen or a new car.

## **where do your priorities lie?**

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clean energy for eons to come

“  
a report by  
the sustainable  
consumption  
roundtable  
envisages a  
future where  
households  
generate their  
electricity at  
home, using  
wind, solar  
and heat  
energy”

# commercial/industrial

Cleaner Air Solutions can provide a wide range of options for both commercial and public sector buildings encompassing the requirements in line with the central government's policies on sustainable energy.



## carbon neutral vision

Whether it be a small type industrial unit, or a larger scale site such as factories, office buildings, utility buildings, (eg libraries, hospitals and medical centres). We can develop solutions to cover the latest

requirements of the carbon neutral vision thereby assisting business users to meet their targets for reduced emissions. Saving money and actively contributing to reducing climate change.

Understanding the build process and working closely with architects and developers, or as part of the design team, allows Cleaner Air Solutions to deliver cost effective solutions without causing delay to the building programme. If you

are considering renewable technology as part of a building's design, the earlier you consult us the more scope you will have to fully integrate the system avoiding excessive 'mark-ups' and keeping costs under control.



## autonomous systems

In many applications power has to be supplied in a remote area. Often the cost of laying mains cables to the site is high and the power requirement is low. This is when a solar PV system can offer the most economical solution.

Cleaner Air Solutions have found that in installations requiring less than 1kilowatt peak, the cost of the solar PV system is generally less than the cost of laying a mains cable for only 100m.

Solar PV modules can provide both an economical and reliable solution to the issue of remote area electrical supplies.

## shapes, sizes and fitting

Cleaner Air Solutions use the latest Solar PV technology which allows more flexibility in the method and location of fitting.

This means a wider range of applications can be covered such as conservatory roofing, cladding, the frontage of

buildings and many more. The chosen installation method has no effect on the output of the panels.

## what commercial grants are available?

Government grants are available to support large scale Solar PV and hybrid renewable energy systems

Please contact us for the latest information.

“  
consumers  
can see a  
significant  
reduction on  
their annual  
electricity bills  
”

# answers

to some commonly asked questions..

## *What are the key benefits of a PV system?*

Once installed and commissioned, you own the system, having control of a long term free source of electricity that presently is exempt from VAT and price increases. You are not only saving money but actively saving the environment we live in. As the system has no moving parts they require minimal maintenance, have a long lifespan, generate no emissions and no noise - producing clean energy for eons to come.

## *What grants are available?*

Government grants are available to help you cover the cost of a PV installation.

For domestic properties, the grant can be up to 50% of the total cost.

For the latest information please contact us. We can help process grant applications on your behalf.

Grants are on a first come first served basis.

Grants for commercial installations are also available, please contact us for details.

## *How much electricity do I use?*

We have a number of systems but an average 3 bedroomed house can typically use between 2500 to 4000 Kwh (or units) per year. Which is around 10-12 Kwh per day.

## *What is a Unit or Kwh (Kilowatt Hour) of electricity?*

Units are how you are billed for electricity. These are examples of 1 unit or Kwh.

A 1 bar electric fire running for one hour. A 100w lightbulb running for 10 hours.

## *Do I need a south facing roof and how big does it need to be?*

South, SW or SE facing is fine. A typical installation needs about 15-20Sq metres of roof space. Other roof orientations are much less effective.

## *What will it generate?*

We hope to survey your house and size the system PV and Wind to meet 85-90% of typical electricity needs.

## *Can I generate cash and electricity back to the grid, so my system is not wasted when the weather is good for generating power?*

Yes. We can also help you to manage your relationship with your electricity supplier so you get the best price for the electricity you generate.

## *What does a typical System cost?*

It varies, by size and is dependant on our detailed survey.

**for more information or any other questions you may have,**

**please log on to:**

**[www.cleanerairsolutions.co.uk](http://www.cleanerairsolutions.co.uk)**

**or call us on freephone**

**0800 061 2041**

Cleaner Air Solutions Limited are proud to be associated with:

**SHARP**

**Fronius**



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