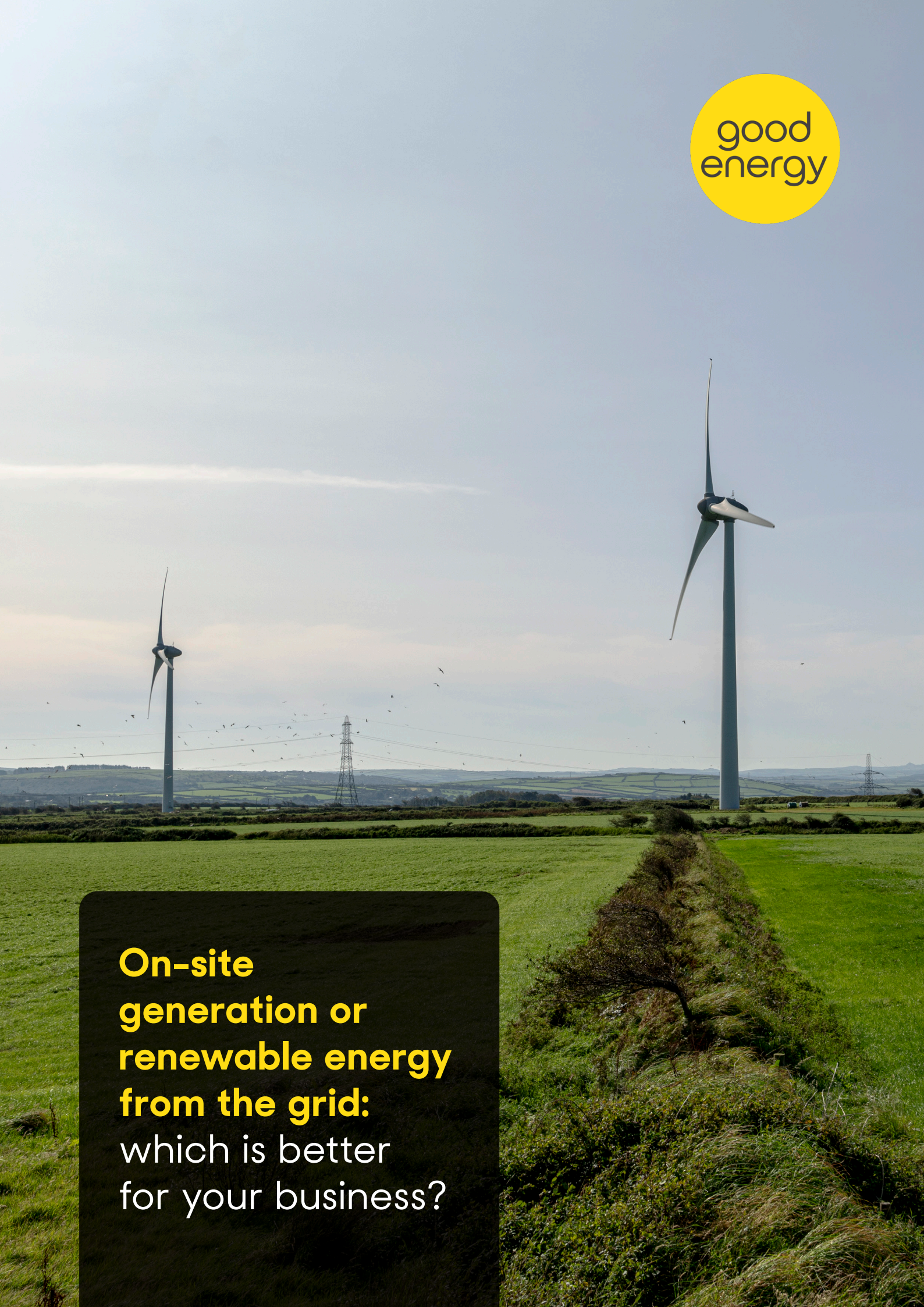

On-site generation or renewable energy from the grid: which is better for your business?

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good energy

Time to explore new options

The energy market has been extremely volatile over the past few years. In 2021, wholesale energy prices started to increase dramatically in response to countries rebounding from the COVID pandemic. In the UK, this unfortunately led to 28 retail energy suppliers exiting the market. In 2022, wholesale market volatility was intensified with war in Europe, and prices are expected to remain high throughout 2023.

Meanwhile, thousands of companies have begun to measure their energy use and carbon emissions; and are setting targets in line with ambitions to become net zero by 2050.

These changes have led to many businesses looking at their energy efficiency, energy management and supply, and exploring options for cutting carbon and shielding themselves from price volatility - such as by installing on-site generation.

Is on-site renewable generation the right option for your business?
This guide explains what you should think about when you are making that decision.

Why look into on-site generation?

The percentage of businesses with some on-site generation capacity has been growing significantly over the past decade. Not only are more businesses installing generation capacity, but those who have the capacity are relying on it more heavily, particularly with the current volatility in the energy market.

The benefits of on-site generation make it an option worth exploring:

Lower costs. Although on-site generation requires upfront investment and incurs maintenance costs, over the life of the project you will be paying significantly less for each unit of electricity than if you purchased it from a supplier.

Predictable prices. Electricity generated on site is not affected by fluctuations in the global energy market. For many businesses, cushioning themselves from price volatility is a key driver for the move towards on-site generation.

Avoiding non-commodity costs. About 60% of a typical dual fuel bill is made up of costs that have nothing to do with the price of the energy itself. Non-commodity costs, or third-party costs, are compulsory charges added to your bill to cover things like delivering electricity to users and balancing the power load on the grid. Electricity generated on site doesnt incurs these charges.

A new revenue stream. You may be able to sell surplus energy back to the grid through a scheme such as the Smart Export Guarantee. This guarantees payment for electricity to all eligible generation projects. Various suppliers offer different import tariffs and you can pick the best deal for your business. See our quick guide to the Smart Export Guarantee for more information.

Demand-side response. Even if your on-site generation project does not fully cover your organisation's energy usage, it can still help to save you money by reducing the amount of energy you buy at peak rates. You can also participate in what the National Grid calls "demand-side response", helping the grid balance periods of high demand.

Lower emissions. Many businesses have set targets to reduce their greenhouse gas emissions, or reach net zero by a certain deadline. Generating your own clean energy will significantly cut emissions for your business, whilst supporting the UK's wider decarbonisation goals.

Cutting waste. Transporting electricity across the ong-distance transmission network and the local distribution network means that some will be lost in transit. It's estimated that the UK loses about 1.7% of the electricity from the transmission network, and 5-8% from the distribution network. The costs of these losses are passed to consumers as non-commodity charges. Having energy consumption and generation on the same site means that energy isnt wasted in this way.

Solar installation with our partner, Caplor Energy

Good Energy has partnered with Caplor Energy, who install renewable technologies for businesses and homes across Britain, including commercial solar installations paired with battery storage.

If you're not sure what size installation would work best for your business, or want support with finding the tech you need, our partner Caplor will be able to help.

Find out more about solar installation with Caplor

Demand-side response

Demand-side response (DSR) is a way of optimising electricity use to help balance supply and demand on the National Grid. The energy industry used to focus on "supply-side flexibility" (building new capacity) but in recent years it has developed new ways of providing flexibility that are focused on changing our patterns of demand to soften the peaks and troughs.

Displacing some of the demand from peak times to less busy times through mechanisms such as pricing incentives takes pressure off the grid and means cheaper energy overall. Our research has found that increasing participation in DSR would reduce the need to build many expensive new power stations in the UK.

Some very large businesses work directly with the National Grid when they take part in DSR, but most do it through third parties. Aggregators are businesses who sign contracts with multiple individual businesses and combine them to form one single DSR provider. They then work with the Distribution System Operator, taking a percentage of the value created for the grid in exchange for offering this service. By working with an aggregator, even small businesses can take part in DSR.

Whatever the size of the business, the way they participate in DSR is the same: reducing the amount of electricity they take from the grid at peak times. This might mean reducing electricity usage at peak times or moving to on-site generation – or often, both.

On-site generation projects, especially coupled with on-site energy storage, help with demand-side flexibility. If you are on a flexible tariff, you can significantly cut or even eliminate your usage of peak-rate electricity, saving your business money. By taking pressure off the grid, you are helping to maintain a cheaper and greener network for all of us.

Why choose renewables from the grid?

There are a variety of reasons why businesses choose not to go down the route of on-site generation and instead buy renewables from the grid through a green energy supplier.

No capital outlay. Buying renewables from the grid does not involve the high capital outlay required to set up your own generation system.

You can still support renewables. You can actively support the generation of new renewable energy without being a generator yourself – provided that you choose the right supplier.

The best practice guidelines from the UK Green Building Council (UKGBC) say that to be truly green, your energy procurement should have the quality of "additionality". That is, the money you spend on the energy consumed by your business should directly result in the generation of new (additional) renewable energy. Currently, only three suppliers in the whole country are recognised by energy regulator Ofgem as providing genuine additionality, and Good Energy is one of them.

No long-term commitment. If you are not investing in on-site generation, you are not taking on an ongoing commitment to manage an asset. You can just keep buying renewable energy (provided it is from a non-greenwashed supplier).

Support independent renewable generators: Even if you choose not to install your own renewable generation capacity, you can directly support independent renewable generators by choosing a genuinely green supplier like Good Energy.

The Smart Export Guarantee

The Smart Export Guarantee (SEG) is a scheme allowing small-scale renewable electricity projects to sell energy back to the grid via a supplier. SEG obliges all licensed electricity suppliers in the UK over a certain size to offer an export tariff to any generator which meets the requirements of the scheme. Smaller suppliers can also opt into the scheme on a voluntary basis.

The tariff can't be zero or in minus figures, which means that every eligible generation project is guaranteed some payment for the electricity they export to the grid, even when wholesale energy prices are negative.

Although solar is often the best fit for on-site generation, do not rule out other renewables such as wind power, hydro power and anaerobic digestion. These are all covered by SEG, which means the big suppliers are obliged to offer you a price for the electricity you generate in this way (provided you meet the scheme's criteria).

Choosing which supplier tariff to go for can be somewhat confusing, because it is not just a matter of picking the best price: do you want a fixed rate, or do you want a tracker rate that reflects the changing wholesale cost of electricity? Good Energy is currently working on a tariff that's easy to understand and also offers generators a fair price: sign up to find out more.

Things to consider about on-site generation

Funding models

If you have decided that setting up a new on-site generation project is the right choice for your business, you will need to decide on a funding model to cover the upfront costs of installation and the running costs. You also need to decide on who will be responsible for the day-to-day running of the project.

Here are some of the possible models.

Owning, operating, selling energy. It is possible to buy your generation assets outright and take full charge of them. This means the business owns, operates and maintains its generation equipment. You then have a potential income stream from selling surplus energy to the grid though SEG or whatever replaces it in the future.

Having a third party handle it. Your business could enter into an agreement with a third party who will build, run and maintain your on-site generation infrastructure. Your business would buy energy from them (usually as part of the agreement) but you would not be responsible for the upkeep or running of the generation project.

Outside financing. Your business could finance the purchase of its generation assets through an agreement with a third party, such as Good Energy's partner, Finpoint.

Power Purchase Agreements (PPAs) are a common way for businesses to secure the funding they need at a good rate. Through the PPA, another business makes a commitment to buy the energy your asset will generate for a fixed period of time. This guaranteed income stream makes your project a low risk to creditors, so it is easier and cheaper to secure financing. In return, you will usually commit to sell the energy at lower than market rate.

Finance your project with our partner, Finpoint

Explore simple financing options for installing solar panels and more, provided by Good Energy's preferred B2B funding platform, Finpoint.

Find out more about project financing with Finpoint

What kind of generation?

Most people think of solar when they think of on-site renewables, but it is far from the only option. Although **solar** is a popular technology choice, it is also worth exploring other types of renewables before you make a decision.

Wind turbines work particularly well on sites with high wind speeds, so they are a great way of making the most of local conditions if your site is on high ground or the coast. They produce electricity between 70% and 85% of the time, but actual output will vary depending on the size of the turbine and current wind speed. Combining your wind turbine with energy storage capacity isn't essential, but will help you get the most out of variations in output.

Combined heat and power (CHP) works by generating electricity and recovering the heat that would normally be wasted in the process to heat buildings. It's not strictly a renewable energy source because CHP systems are usually fuelled by fossil fuels such as natural gas or oil, and only very occasionally by greener sources such as renewable biogas. But it is a very efficient use of such fuels. Efficiency is typically over 80%, compared to around 50% for a normal boiler. However, a CHP system can only run at optimal efficiency if there is relatively high and consistent demand for heat and power , so you need to work out if the energy usage of your business' sites is high enough to make it worthwhile.

Anaerobic digestion happens when microorganisms consume biodegradable material in the absence of oxygen. They produce a biogas which can be burned to generate electricity or turned into biomethane, allowing it to be used in the normal gas grid. It is considered a carbon-neutral energy source because the organic matter that feeds the digester absorbs as much carbon in its lifespan as it emits when it is being broken down by the microbes.

On-site anaerobic digestion is only a realistic option if you have access to thousands of tonnes of waste material each year to feed the digester. If your business already produces a lot of organic waste (through farming, for example) then having an on-site anaerobic digester could be the ideal option because it does the job of waste disposal as well as generating power. If you are off the gas grid, it is highly likely that you are paying over the odds for your gas, which means the numbers are more likely to work out in favour of an anaerobic digester.

Your choice of renewables generation really depends on your specific business. Look at your resources, usage patterns and site suitability before making a decision.

Things to consider about buying renewables from the grid

Avoiding the REGO greenwash

If you choose to buy renewable electricity from the grid, you will need to do your research to ensure that what you are getting is truly renewable. Existing regulatory loopholes allow electricity suppliers to buy energy from the open market (which contains electricity from a mix of sources, including fossil fuels and nuclear), then market it as "green" or "renewable". This greening of dirty power is done through the purchase of certificates known as REGOS, or Renewable Energy Guarantees of Origin, which are issued to green electricity generators by the regulator Ofgem. However, they can be sold on separately, which has created a secondary market fuelled by suppliers who want an easy way to claim they are selling green power.

The prevalence of greenwashing means you have to ask suppliers directly how much of their electricity is sourced from renewable generators via direct agreements. Good Energy is completely transparent about our procurement of renewable power. Every unit of electricity we sell to customers is matched by a unit sourced from renewable generators with whom we deal directly. We currently have agreements with over 1,700 renewable generators around the UK.

Getting the greenest gas possible

We have explained that biomethane gas can be described as carbon-neutral because the organic material has already absorbed carbon from the atmosphere equal to the greenhouse gases it gives off when decomposing.

However, in the UK, we only produce enough biomethane to meet less than 1% of demand for gas. It gets put into the national gas grid and forms a tiny part of the mix. This means that most suppliers offering "green gas" are achieving this through offsetting. When you are comparing different green gas suppliers, the type of offsetting is crucial.

The best way to offset natural gas so that you can market it as green is to actually invest in truly green gas elsewhere. Good Energy can guarantee that for every unit of our green gas you buy, we have invested in the generation of a unit of biomethane gas overseas. (We do this through the respected international offsetting organisation Climate Care.) Other types of offsetting, such as investing in new solar projects or tree-planting, may be good projects in themselves, but they have no connection to biomethane and do nothing to boost the global supply of truly green gas.

Tariffs

As well as choosing the greenest possible energy sources, you need to pick the tariff that is the best fit for your business. Is it important for your business to pay a consistent and predictable price for its energy so that you can budget in advance? Or are you prepared to tolerate the risk of higher prices for the potential reward of bigger savings?

Could you save money through a dynamic tariff that offers cheaper rates at off-peak times? And if so, are there ways that you could maximise savings through changing the way the business runs? For example, if you have a fleet of electric cars, then you could charge them overnight when rates are lower. Or perhaps there is certain machinery that could run only at off-peak times. Battery storage can also help your business optimise the timing of its energy use.

Conclusion

On-site generation and renewables from the national grid are two great options for businesses. Switching to a renewable supplier is the quickest way to decarbonise your energy supply, whilst investing in on-site generation could lower costs long-term and offer a new income stream for your business.

However, when you look at the needs of your business and the realistic possibilities open to you, you may well find that the best option is to choose both. Most businesses with on-site generation assets still use energy from the grid as well as generating their own.

Because switching to a genuinely green supplier is a much more straightforward course of action, you could do this first, while you are still exploring the option of self-generation. Even if it takes a long time to get a generation project up and running, or it turns out not to be right for your business, you have still taken steps to reduce your emissions.

Common energy myths

"Having on-site generation means going off-grid."

Most businesses with on-site electricity generation capacity are still connected to, and drawing power from, the grid. Self-generation helps a business to optimise its use of the grid to take the load off at peak times, pay less for the grid electricity it does use and protect itself from price volatility. You may also choose to sell power back to the grid through a scheme such as the Smart Export Guarantee. Building a generation project definitely does not mean disconnecting.

"All renewable tariffs are equally green."

It is currently possible for a supplier to market a tariff as renewable without having any direct agreements with renewable generators. This means that as the customer, you need to do your homework to ensure that your money really is supporting new renewables.

"We'll never get planning permission for a wind turbine!"

Planning permission is one of the potential problems that discourages businesses from exploring the option of a wind power project, and it is true that there are various regulations surrounding the installation of turbines. However, that does not mean it is as difficult to secure permission as some think, and many wind power projects get the go-ahead from UK councils every year.

In England and Scotland, certain types of wind turbine do not even need planning permission at all, as long as they fulfil a list of criteria. However, it is always best to check with the local authority, let them know the size and type of the intended turbine, and make sure it does not require permission before you go ahead.

In Wales and Northern Ireland, you are legally obliged to seek planning permission no matter what the turbine or the intended site is like.

"We won't need to worry about energy efficiency once we're generating our own energy."

Having your own generation capacity does not mean there is suddenly no limit on your energy usage. Many businesses with on-site generation find that it doesn't fully cover their own use, which means buying some energy from the grid. It is a waste of money and resources for a business to spend on energy that does not need to be used in the first place, which is why it is important to make your business as energy efficient as possible. Reducing demand through efficiency measures will at the very least cut bills and may even allow you to generate a surplus which can be sold to the grid.

Contact us for a quote or to discuss your renewable generation project

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