



# ON-SITE RENEWABLE ENERGY GENERATION GUIDE



# INTRODUCTION

As businesses increasingly seek sustainable solutions, on-site renewable energy generation has emerged as a compelling option for businesses that own or have operational control over their premises or operational sites. By harnessing the power of natural resources, such as wind, solar, hydropower or biomass, businesses can reduce their environmental impact, lower energy costs, and enhance brand reputation.

On-site renewable energy involves generating electricity from renewable sources directly at the business location. This approach eliminates the need for traditional grid power, reducing reliance on fossil fuels and associated emissions.

Producing renewable energy does not have to be done on a large scale, and does not have to match the rate at which your organisation consumes the energy produced. The production of even a small amount of renewable energy will benefit your reduction in greenhouse (GHG) emissions.

## TYPES OF RENEWABLE ENERGY GENERATION

While there are many methods for generating renewable energy, here are a few examples that are particularly relevant for businesses:

### SOLAR

For most organisations the simplest way to produce renewable energy on-site is through the installation of solar panels. Also known as photovoltaics (PV), solar panels are one of the most widely used renewable energy technologies. They work by capturing the sun's energy and converting it into electricity, providing a clean and efficient energy source suitable for many business types.

**Ideal for:** Rooftops, car parks, and other open spaces.

### WIND

Wind energy is derived from the kinetic energy of moving air generating energy to be converted into electricity. While large-scale wind turbines are generally unsuitable for businesses in densely built-up areas and require a significant upfront investment, smaller wind turbines can still produce a meaningful amount of energy annually and can be installed in open sites, business parks and in some instances on flat roof-tops.

**Ideal for:** Areas with consistent wind speeds, such as coastal regions or rural areas.



## BIOENERGY

Biomass energy focuses on wood-fuelled heating systems, also known as biomass systems. These systems burn wood pellets, logs, or chips to power central heating and hot water boilers, offering an effective renewable energy solution for certain business operations.

**Ideal for:** Businesses with significant organic waste, such as food processing plants or farms.

# BENEFITS OF ON-SITE RENEWABLE ENERGY GENERATION

## ENERGY INDEPENDENCE

Even if your organisation is not producing 100% of its own renewable energy, producing a portion of renewable energy on-site reduces reliance on the national or regional grid. This allows for greater energy independence and provides flexibility in managing energy usage.

## ENERGY SECURITY

Similar to energy independence, if there were to be an issue with the national or regional energy grid, or with your energy supplier, a self-producing renewable energy method can act as a backup. This is crucial for industries where operations are constant, such as hospitals and data centres, or in regions likely to be affected by power outages.

## LONG-TERM COST SAVINGS

While there is often a significant upfront investment required from business when installing renewable energy technologies on-site, these allow for reduced dependence on external energy sources and protection from fluctuating energy prices. Over time, these systems can offer substantial financial benefits, including the potential to sell excess energy back to the grid through feed-in tariffs or power purchase agreements.

## ENHANCED BRAND REPUTATION

Investing in on-site renewables demonstrates commitment to sustainability and corporate social responsibility boosting brand visibility and reputation.



# WHEN ON-SITE RENEWABLE ENERGY GENERATION ISN'T FEASIBLE

## ALTERNATIVE SOURCES OF RENEWABLE ENERGY

If your business is unable to generate its own renewable energy on-site, 100% renewable energy tariffs provide a practical alternative.

 **FuturePlus offers a comprehensive guide to renewable energy tariffs and how they can support your sustainability goals. The guide can be [accessed here](#).**

## COMBINING RENEWABLE ENERGY SOURCES

It is also possible to produce your own renewable energy in conjunction with the purchasing of renewable energy tariffs. This can include directly purchasing renewable energy sources from suppliers or through renewable energy certificates.

For example, businesses can install solar panels (photovoltaics) to generate their own electricity while also leveraging renewable energy tariffs to cover additional energy needs sustainably.

## ENERGY REDUCTION INITIATIVES

Whilst renewable energy is the best option in terms of environmental impact, when this is not suitable, organisations should at minimum consider initiatives to reduce their overall energy usage, reducing greenhouse gas (GHG) emissions as a result.

 **Further guidance on energy reductions can be found in our guide [here](#)**

## NEED MORE HELP?

For more information and support, please feel free to contact us at: [info@future-plus.co.uk](mailto:info@future-plus.co.uk).

