

Installation of Renewable Energy

Introduction

This guide introduces the key considerations and steps involved in setting up renewable energy capacity at your organisation's office or factory. If you don't own your building, encourage your landlord to follow these steps instead.

Transitioning to renewable electricity is one of the most impactful actions you can take to reduce your organisation's emissions from energy use, and one approach to this is to install your own. This is particularly true when situated in a region with high grid energy supply emissions and/or with battery storage incorporated into the system. Any use of renewable energy, however, will help to lower emissions overall.

It's feasible with existing technology to halve emissions in most offices and factories before 2030, particularly by focusing on on-site renewable energy. Here are the most common onsite renewable energy options:

- **Solar Electricity:** Solar panels are ideal for businesses with high daytime electricity use and sun-exposed roofs or other available land (e.g. car parking areas). The payback time is around five to 10 years (depending on price of electricity and feed-in tariffs), with low running costs. Leasing your roof space for someone else to install and own the panels is also an option. This reduces the initial financial burden while still cutting your emissions and electricity costs. Find case studies of how SMEs have installed solar panels on their facilities in our learning tool [Climate Fit: Climate Action for your operations](#).
- **Solar Thermal:** This system uses sunlight to heat the water in your hot water tank, so it's best for businesses that use a lot of hot water, like those in the agriculture, hospitality, and leisure sectors. The payback time is approximately five years, with low running costs.
- **Air Source Heat Pumps:** These capture outside air and use it to heat the water supply or heating system. They're relatively small and work even when the outside air isn't warm, making them suitable for most buildings. However, they do have running costs as they use electricity to operate. The payback time is around five to 15 years.
- **Geothermal:** These pumps extract heat from the ground and transfer it to the water or heating system. They can be used in most regions but need outdoor space for underground tubes. Like air source heat pumps, they also have running costs due to electricity usage. The payback time is approximately 15 years.

Measure and Understand

Start by working out your annual consumption of each different type of energy you use (electricity, district heating, fossil gas, steam, district cooling). This is information that can be provided by your utility suppliers. Use a smart meter to collect data on the energy use by your organisation, and consider how it may change in the coming years. Knowing your usage is essential as supplier options and prices often depend on volume.

Energy delivered through grids is typically measured and sold in kWh. So, to track your progress in switching to renewables, look at the percentage of your purchased energy (in kWh) that comes from renewable sources.

Key Actions

Follow these steps to install and operate a renewable energy system. Processes may vary by country, so be sure to also seek advice from national or local government websites. There may even be grants, tax rebates, and other incentives for renewable energy investments and energy efficiency measures.

1. Explore Options for Renewable Energy Installation

Explore the renewable energy options available to you. Determine the potential energy production and how it aligns with your current and future energy needs. You can contact a renewable energy provider to conduct a site survey for you (see example of a solar site survey [here](#))

2. Choose the Best Solution

Based on the step above, select the most suitable renewable energy solution. Consider factors such as your building, site, energy needs, planning permissions, building regulations, initial and ongoing costs, and the lifespan of the systems.

3. Investigate Financing Options

Look into available tax rebates, grants, loans, incentives, and feed-in tariffs. These vary by country and region. Consult your local government and financial institutions to find out about potential financing options.

4. Contact Certified Installers

Get quotes from several credible installers (ideally certified if your country has a certification scheme). This ensures quality and reliability in your installation process.

5. Secure Necessary Permissions

Apply for any required planning permissions and building warrants.

6. Implement and Maintain Your Project

Once all the planning and permissions are in place, proceed with the installation. After that, ensure regular maintenance to keep the system running efficiently.

Engage with Employees

Reducing your energy consumption makes it easier to meet your needs with your renewable energy production. Involve your employees in identifying energy-saving initiatives and encourage them to propose ideas for improving energy efficiency within the organization. Consider implementing energy awareness campaigns, providing training sessions, and recognizing employees who contribute significantly to energy-saving efforts.

Cost Implications

Installing on-site generation of renewable energy will require an initial investment cost, but will often lead to long-term cost reductions. The expected payback time for the listed options is included above. Although renewable energy systems typically have low operational costs, there are ongoing expenses to consider, such as maintenance, repairs, insurance, and any necessary upgrades.