Suttle Stone Quarries

Low Carbon DORSET

Project cost
£50,789

Estimated Savings
£6.8K (£900 LEDs, £5.9K solar PV) / 31 tonnes of CO_2e* per year

Equipment / Installer
60 kWp solar PV (Wessex Eco Energy), LED lighting (HES Ltd)

Grant awarded: £20,079

Estimated Annual Savings: £6.8K / 31 tonnes of CO_2e*

The Project

Throughout 2019 and 2020, as part of a wider drive to reduce their carbon footprint and energy costs, Suttle Stone Quarries installed over 60 kWp of solar PV at two of their sites in Dorset.

The project, that was carried out over two phases, also included the installation of LED lighting for their workshop. Combined, these measures will save an estimated 31 tonnes of CO_2e a year and will reduce Suttles' annual energy bills by around £6.8K.
It's expected that this project will pay for itself in just four and a half years!

Getting started

Since acquiring Swanworth Quarry in 2011, Suttles has been making significant progress in reducing the environmental impact of their operations. The Dorset based firm has already invested in the electrification of a large part of their vehicle fleet. In 2019, they purchased 13 electric and hybrid vehicles – reducing their footprint by an estimated 30 tonnes of CO_2 a year. They have also converted most of their power-hungry diesel machinery to electric, including the large crusher at their Swanworth site.

By making this switch to electric, Suttles were in an excellent position to decarbonise their operations and

*CO_2e, or carbon dioxide equivalent, is a term used to describe different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact. And allows us to express a carbon footprint consisting of lots of different greenhouse gases as a single number.

reduce their reliance on fossil fuels. By generating their own electricity on-site renewably, rather than importing electricity from the grid, Suttles could make significant savings in both carbon and costs. So, with help from Low Carbon Dorset, they began mapping out their electricity demand (half hour by half hour) to understand exactly how much solar PV they would need to make the best possible business case.

Solar PV

In 2019, with the help of a Low Carbon Dorset grant, Suttles installed a 49 kWp solar PV array on the roof of their Swanworth workshop. It is anticipated that the 120 panels installed will generate around 41,500 kWh a year, but in fact, in 2020 they exceeded this by an extra 7,000 kWh!

Financial savings made from solar PV vary depending on how much of the energy you generate you can use yourself. Companies that can use a large amount of the electricity they generate make the biggest savings as they no longer need to buy this electricity from their energy supplier.

The Suttles PV project is a great example of this as their peak demand for electricity is during daylight hours when a solar array would be generating the most electricity. It's expected that Suttles will use about 75% of the energy they generate at Swanworth, saving them around £4K a year on electricity costs and reducing their carbon emissions by 21 tonnes of CO_2e a year.

After seeing the financial and environmental benefits of one solar array, Suttles decided to apply for a second grant from Low Carbon Dorset to install a smaller array (11 kWp) at their nearby Dawkins Road site.

It is expected that they will use around 94% of the energy they generate at this site, bringing the payback period for the panels down to just 4 years! This PV now powers the workshop and some of their electric vehicle charging and will save them a further 6 tonnes of CO_2e a year.

LEDs

Whilst installing PV at their Swanworth site, Suttles also decided to replace 21 old light fittings in their workshop with highly efficient LED lights. Switching to LEDs is a quick and relatively cheap way to reduce electricity bills and carbon emissions.

This switch to LEDs is expected to save Suttles around £900 a year in electricity costs, and with the help of a 40% grant will pay for itself in just two years.

Next Steps:

Now Suttles have installed solar PV at both of their Dorset sites, they are hoping to further decarbonise their operations through the electrification of both their mobile plant and van fleet. This will help them to further utilise the electricity they are now generating on site.

'Low Carbon Dorset not only committed significant amounts of grant money to our project, but also, importantly, had the expertise and experience to let us know how we could achieve the project in the most efficient way.'

John Suttle, Director – Suttles

European Union
European Regional Development Fund