

Project cost
£275,961

Estimated Savings
196 tonnes of CO₂e* / £35K per year

Equipment / Installer
400kW solar PV rooftop array (1,130 panels), Clean Earth Energy

Grant awarded:
£110,384

Estimated Annual Savings:
196 tonnes of CO₂e* / £35K

The Project

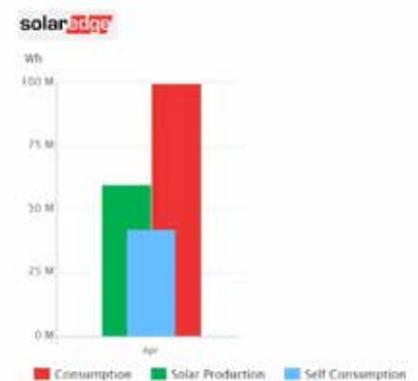
William Hughes is a Dorset based designer and manufacturer of custom-made springs, wire forms and assemblies for the automotive and aerospace industries. The firm currently occupies a factory in Stalbridge, Dorset.

In 2020, William Hughes installed a 400kW solar PV array on their factory's expansive roof. This installation of 1,130 solar panels was part funded by Low Carbon Dorset and will provide around 25% of William Hughes' electricity demand. The installation of renewable energy at the site will protect the firm from rising electricity prices and reduce their carbon footprint by 195 tonnes of CO₂e.

Getting started

William Hughes first approached Low Carbon Dorset for support in September 2019. The North Dorset based firm had already recognised the potential benefit of installing solar PV but needed financial support to get the project up and running.

Prior to seeking support, William Hughes had already taken steps to improve the energy-efficiency of their site, an important thing to do before installing any renewable energy. These measures included switching to LEDs,



*CO₂e, 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, CO₂e signifies the amount of CO₂ 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.

installing occupancy sensors (to ensure lights aren't left on when spaces aren't being used), and updating their process machines.

Solar PV

A site visit from Low Carbon Dorset's technical officer confirmed that the Stalbridge site and William Hughes' current electricity demand would make an excellent financial and environmental case for installing solar PV. Low Carbon Dorset was able to offer a grant to cover 40% of the project costs.

The installation of the panels was originally scheduled for summer 2020, but the project came to a rapid halt when the Covid-19 pandemic hit. But, as restrictions began to lift, they quickly got the project back on track and the installation was rescheduled for October of the same year.

1,130 panels were installed on the available factory roof space in Stalbridge. The system will generate 378,412kWh of useable

electricity per year, around 71% of which will be consumed onsite by William Hughes.

Thanks to the 'Solar Edge' software provided by the installer of the panels, William Hughes can monitor how much energy their array is generating day-to-day, versus the amount they are consuming. It even shows them how much electricity they are exporting to the grid daily.

According to the installer (Clean Earth Energy), William Hughes will pay an equivalent forward buying price of just over 3p per kWh for the system's 25-year lifetime. On average UK manufacturers pay 9p per kWh**, which means William Hughes will save around £35k in electricity costs in the first year alone.

The full cost of this installation would take 6 years to pay for itself, with the help of a Low Carbon Dorset grant this payback period has been reduced to just under 4 years.



**Source: BEIS report, September 2020

Other recommended measures:

During the site visit it was identified that, although most lights in the factory had been switched to LEDs, there were still some old light fittings in storage and office spaces. Further savings could be made by switching all lights to LEDs.

Another future opportunity for William Hughes may lie in battery storage technology. Battery storage is currently expensive in comparison with the savings offered, but this is likely to change in the next 2-5 years. When this happens individuals and organisations that have fitted PV may choose to add storage to maximise the benefits they receive from their PV arrays by using more of their own electricity and generating further income through Demand Side Response (DSR) schemes.



'The grant made the project viable, and the assistance received from Low Carbon Dorset made it possible. And their help with the claim resulted in the grant being paid very quickly.'

Max Hughes
Managing Director – William Hughes