

An aerial photograph of a university campus, showing a mix of green spaces, buildings, and roads. The image is partially obscured by a dark grey semi-transparent box containing the title.

## Case study: UK University, Decarbonisation Study Decarbonisation study for UK university

### The road to net zero

In 2023 RenEnergy completed a decarbonisation study for a UK university.

The overarching aim of the study was to clearly map how the university could reach Net Zero by 2035 through the development of an 18MW solar PV ground array which would directly supply the site from an adjacent piece of land.

To accurately map out a strategic plan to 2035 RenEnergy Ltd carried out a provisional study to determine the existing energy consumption and to map the electrical infrastructure of the university's main site.

This included modelling the electrical network with existing loads and generation, calculating the infrastructure and energy requirements of electrifying the existing gas heating systems and assessing the resulting effect of additional electrical heating and generation from the institute's predicted growth by 2035.

This provided the data to accurately assess the scale of solar PV required in order to achieve the carbon reduction goals, as well as analyse the opportunities for incorporating a Battery Energy Storage System (BESS) to maximise self-sufficiency of the university.

Modelling the additional generation from the solar PV highlighted any electrical connection constraints and informed the infrastructure upgrades required to accommodate the proposed solar PV system. RenEnergy's experienced technical team ensured a balance was struck between achieving the greatest reduction in carbon emissions, commercial viability and the capacity of the site's infrastructure to accommodate the addition of the 18MW solar PV array, ensuring that the recommendations met the aspirations of the client whilst remaining realistic and achievable.

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As international research facilities, universities across the UK play a crucial role at the forefront of addressing climate change, holding the potential to have a transformative impact through their research, teaching and outreach. Universities have a responsibility to lead by example and as a result a large number of these institutions have committed to achieving Net Zero ahead of the national 2050 target.



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RenEnergy provided the client with a strategic 10-year plan to achieving Net Zero by 2035, detailing benchmarks for each year of the plan and breaking the project down into achievable yearly actions. Each milestone considered the electrification of the campus' heating, the capacity and location of solar PV to be installed and electrical infrastructure upgrades. This provided the university with a clear and actionable blueprint for their road map to Net Zero, including forecasts for costs and carbon emission reductions allowing the client to prioritise and sequence activities towards 2035.

As part of the decarbonisation study, RenEnergy advised on the upfront development work required to meet each milestone of the 10-year plan, including options to finance, fund and deliver the plan as well as a planning appraisal detailing all of the requirements of a planning application for the proposed scheme.

In addition, we provided the university with an assessment of the opportunities available to improve and increase biodiversity and ecology at the site to ensure the university was also contributing to its wider sustainability goals and complying with Biodiversity Net Gain legislation.

Our recommendations included agrivoltaics and animal grazing, as well as the integration of ecological enhancement initiatives amongst the PV array such as bee keeping and wildflower overseeding.

