



Keele University - Low Carbon Energy Regeneration (LCEG) Project

Helping Keele University to meet their zero carbon ambitions and support the research and development of renewable energy solutions

Customer background

Keele University, officially known as the University of Keele, is a public research university in Keele, approximately 3 miles from Newcastle-under-Lyme, Staffordshire, England.

Founded in 1949 it occupies a 625-acre rural campus. It is the largest campus university in the UK and includes a range of buildings including accommodation, teaching facilities, research blocks, a science centre, business enterprise facilities and a large conference centre.

The university employs 1,700 staff and has over 11,000 students.

The Challenge

Since 2012, Keele has placed environmental sustainability at the heart of its strategy.

In the People & Planet Green League 2015 assessments for environmental and ethical performance, Keele ranked 48 of 151 educational establishments.

In 2016, Keele was finalist in the Green Gowns Awards for its "significant reduction in carbon emissions and to a dedicated programme of carbon reduction projects supported by an excellent energy management system".



Whilst their student population has tripled since 1990 and their campus significantly grown, they have successfully reduced carbon emissions, investing over £1.2m into carbon reduction in the last 6 years.

2018 saw a significant step-change in Keele's sustainability commitment by them being one of the first universities to declare a 'climate change emergency' and set the ambitious target to be fully carbon neutral by 2030. The university recognised that to achieve this challenging target would need significant investment and the support of experienced partners.

The Opportunity

Keele's commitment to environmental sustainability combined with their world leading research teams and a campus which has all the elements of a small town makes it an idea location for a 'living laboratory' for ground-breaking low carbon and renewable energy projects.

Recognising this the university launched their Smart Energy Network Demonstrator (SEND) initiative in 2018. SEND is funded by Keele University, the Department for Business Energy and Industrial Strategy and European Regional Development Funds.

It will create a decentralised low carbon energy system, providing Keele University with the infrastructure to monitor and manage its energy across the campus. The project will focus research in areas of energy efficiency and cost savings, security of supply, and lowering CO₂ emissions.





Our Solution

Zero carbon renewable energy generation is a key element of the university's roadmap to net zero carbon by 2030. Developed and delivered as a major project within the SEND programme, EQUANS have been selected by Keele following a rigorous procurement exercise to deliver a decentralised renewable energy system.

The Low Carbon Energy Generation (LCEG) project located on their campus will integrate renewable energy generation and storage as part of their wider smart energy network and provide cost effective zero carbon energy for use across their facilities.

Using a Design Build Finance and Operate (DBFO) model, EQUANS will finance the construction of the £8.1m LCEG project.

EQUANS have worked with the university to understand the energy needs of their campus as well as their wider strategic, environmental and academic research objectives and designed a solution which integrates the optimal blend of renewable technologies.

Key Features 5.5MW solar PV 1.7MW wind (2 turbines)

IMW/1.5MWh battery storage

For further information please contact:

placemarketing.uk@equans.com
 equans.co.uk/renewables

Benefits

The project, as part of the wider SEND programme, will provide deliver better energy management, reduce reliance on fossilfuel derived energy, significantly reduce energy waste and provide opportunities to trial innovative ways of energy use and management.

Working in partnership with EQUANS and other stakeholders the project provides Keele with an 'at scale' environment that allows energy generation, distribution, storage, forecasting and balancing to be intelligently carried out across different energy sources using the university campus as a genuine 'living laboratory'. In addition to providing green energy for the university's campus buildings it also supports their green mobility ambitions through the provision of 20 fast EV charging stations powered by 100% renewable electricity with capacity to expand this provision as need grows. The system will also support Keele's hydrogen fuel generation project 'Hydeploy' by providing clean electricity to fuel hydrogen generation plant.

The university will pay an annual fee under an asset lease arrangement. The fee will be fixed in real terms for 25 years from completion of the project in November 2021, providing the university with total cost certainty. The system will generate 8.2MW of renewable energy and reduces the university's carbon footprint by around a third. It will provide around half of the total annual campus electricity demand and includes a 1.6MW export connection to the local distribution network to allow the sale of any excess electricity Keele are unable to use, generating a valuable source of additional income for the university.

Through EQUANS's provision of performance guarantees the university can have complete peace of mind that the system will continue to meet their energy needs for the full 25-year duration of the contract.

The LGEC project will be key to the successful delivery of the university's wider SEND programme which by 2023 will:

- Support more than 240 local businesses
- Create up to 440 higher value jobs
- Create academic learning and research opportunities for the universities 10,000 students
- Provide green energy to the campus comprising over 250 buildings
- \square Save 4,000 tonnes of CO_2 per annum, when compared to coal-fired generation

For further information please contact:

🗹 xxxxxxxx@equans.com

EQUANS.co.uk/equans