

Edina CHP energy centre reduces leading University operating costs.



New district heating CHP energy centre supports University of Warwick to deliver efficient heat and power on campus as part of an ambitious strategy to reduce carbon emissions by 10,000 tonnes per year, energy costs and provide long term security of power and sustainability.

Key benefits

- 2792 tonnes per year CO2 savings
- 50% electricity generated on campus
- Energy savings of £650k per year



The University of Warwick is one of the UK's leading research institutions. Spanning a 292 hectares main campus estate and home to more than 23,000 students, the University partnered with the Carbon Trust to deliver a Carbon Management Energy Efficiency programme to reduce CO2 emissions and further reduce spiralling energy costs.

The development of the Carbon Management Energy Efficiency programme was to establish the University's strategic direction on carbon management until 2020 and develop and nurture carbon management as a core business process.

In order to meet the targets set by the Carbon Management programme, the University developed a new Energy Centre, an expansion of the University's district heating network to increase the CHP (combined heat and power) capacity with an

annual projection of reducing carbon emissions by 3,644 tonnes and energy saving of up to £650k per annum.

Following an extensive tender process the contract was awarded to recognised supplier, installer and maintenance provider of CHP, Edina Group. The full turn-key contract included the design, manufacture, supply, installation and commissioning of two MWM manufactured gas engines.

With a combined electrical output of 4MWe, the MWM TCG 2020 V20 engines were containerised at Edina's manufacturing facility based in Lisburn, Northern Ireland and are housed in the University's purpose built energy centre located on the Cryfield campus.

The containerised CHP plants provide full heat recovery, recovering heat from the engine jacket water, lube oil, intercooler

and exhaust gases, and interface both electrically and thermally to the existing on-site infrastructure.

The University of Warwick CHP installation generates near 15% primary energy savings and in excess of 15% financial savings.



Traditional power stations rarely recover heat from the generating process. The University of Warwick CHP installation continuously adjusts its operation to maximise heat recovery and power generation. Based on an average power stations conversion efficiency of 40% and 80% average boiler efficiency ratio, the University of Warwick CHP installation saved 13% primary energy compared to power and heat that would have been purchased from the grid in 2102/13.

Similarly the UK spark price between gas and electricity (difference between electricity and gas unit rate) allowed a net operating financial saving of 16% in the 2103 calendar year compared to costs that would have been incurred without University of Warwick CHP installation. All savings are returned to the university research and teaching core mission.

The University of Warwick CHP and network installation saves around 12% carbon emissions per year compared to “no CHP with utilities bought from the grid only”.

The overall 2012/13 carbon emission reported to the Higher Education Funding Council was 47,428 tCO₂.

The net carbon saving generated by the installation in academic year 2012/13 was 5,429 tCO₂ (11.4% carbon saving) and 6,043 tCO₂ (12.7% carbon saving) during calendar year 2013.

The net financial saving to the University of Warwick for calendar year 2013 is calculated at £1.4m including costs for fuel, maintenance & labour and insurance but excluding depreciation.

The Cryfield Energy Centre installation of CHP improves the University’s flexibility to ensure security of power and contributes to reducing the University’s operating costs.

By connecting other University buildings (academic departments and student, staff and family residential) to the CHP district heating network will further bring long term sustainability in line with the University’s Carbon Management Plan to reduce carbon emissions, reduced energy rates in line with the government’s ambition to decarbonise residential and non-residential building stock.

With a growing student population and an inevitable increase in energy consumption, the University’s Cryfield Energy Centre will provide a significant part of the targeted low cost and low carbon heat and power across the campus allowing additional funds to be redistributed for research and curricular resources.

About Edina

Edina is a recognised supplier, installer and maintenance provider for energy efficient CHP (combined heat and power) solutions for natural gas and biogas applications, providing complete turnkey and containerised plant and control panel systems manufactured in-house.

Edina is the sole distributor in the UK and Ireland for leading efficiency MWM manufactured gas engines, world renowned for achieving maximum electrical and thermal efficiency, low operating and servicing costs and high reliability and availability.

With over 30 years’ experience in providing flexible power generation solutions, Edina works closely with its customers to understand and meet their requirements, from initial proposal to long term maintenance support.

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