

Project

University Campus



A northern university, like many large educational institutions, occupies a number of sites. Its electricity supply on its science site was spread across a vast number of circuits in numerous buildings. As a result, it was proving very difficult to see where areas of inefficiency were present as all of the electricity was measured through one central meter.

Data

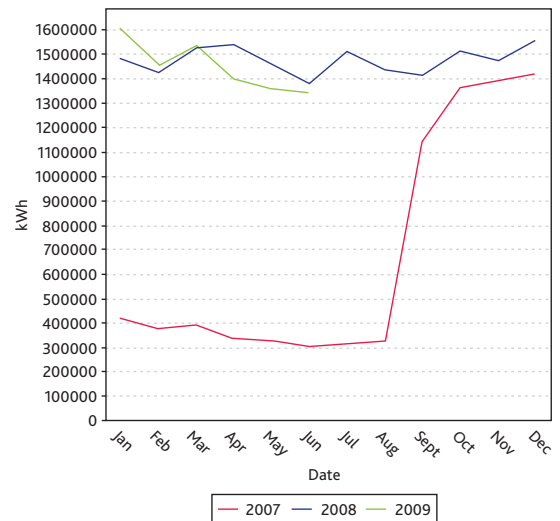
The need for accurate data relating to energy consumption was even more important to ensure that, in the future, the site complies to Part L Building Regulations and the European Energy Performance of Buildings Directive. Part L requires that at least 90% of the estimated annual energy consumption is accounted for, while the European Energy Performance of Buildings Directive sets minimum requirements for energy performance of all large renovated buildings and states that accurate information on energy consumption and carbon dioxide emissions is displayed.

In addition, the energy manager at the university wanted **accurate data** to ensure he had better knowledge of consumption to identify and evaluate the success of future energy efficiency schemes, allow for benchmarking against standards and development of KPIs and to negate the risks associated with potential energy price volatility and inaccurate budget forecasting.

m3 : Measure; Monitor; Minimise

At npower we recognise that energy management is a journey. We have designed our products to help businesses with each stage of this journey – from initial measurement of the energy, to understanding how it is being used, right through to looking at options for sustainable energy generation.

Total Electricity Consumption (All Sites)



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Solution

To obtain an accurate picture of electricity use per circuit and therefore, in many cases, per building, npower recommended installing **GSM (mobile communications) enabled Elster meters as dataloggers**, npower's team of engineers fitted individual meters to each circuit or connected existing meters up to the dataloggers. The information from each meter feeds into the main meter and is accessible via **npower's web-based monitoring software, 'encompass'**.

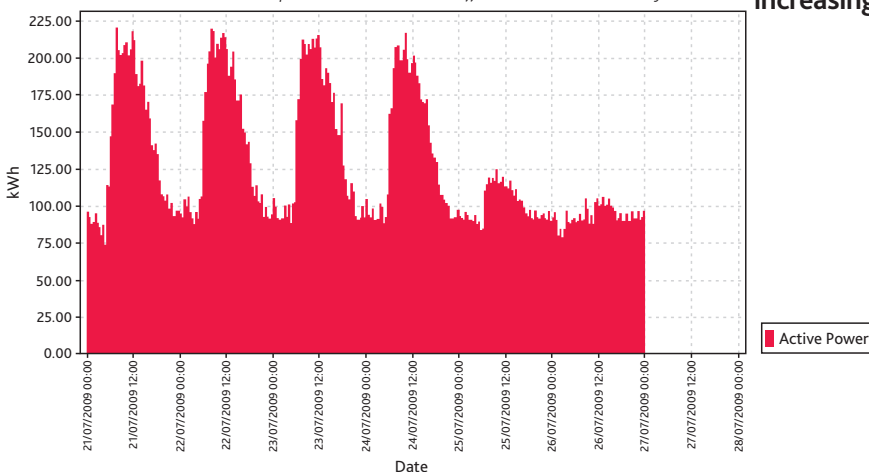
'encompass' is a functionally rich product, developed specifically in recognition of businesses' varied and complex monitoring and targeting requirements. Web-based, it provides energy-intensive businesses with detailed information on their energy consumption, together with analysis of water, steam and any secondary metered utility data. By analysing this data in detail, **encompass can pinpoint where economies can be made**, arming businesses with the information they need to deliver actual reductions in consumption and CO₂ emissions and to better manage utility running costs.

The data from all the meters is **uploaded daily to encompass** to provide a day after view of energy consumption on the site. This data is presented in **easy to use graphs and charts**, and figures track use on a daily, monthly and annual basis, providing a valuable insight into high consumption areas and highlight successfully energy efficient buildings.

Site Active Power (kWh)

[21/07/2009 00:00 - 28/07/2009 00:00]

/Customers/Encompass Demo/Individual Sites/Offices/Charlie Demo/Electricity



Benefits

By monitoring the electricity consumption through **encompass**, the energy manager at the university can **easily identify inefficient areas** and begin to develop a strategy for improvements.

Use of **encompass** also means the energy manager can track the energy consumption over varying time frames allowing **easy and accurate benchmarking**.

Results

Identifying the most and least energy efficient areas has enabled the university's energy manager to **identify and implement improvements** across its science site, while monitoring the energy consumption on a daily basis has meant the energy manager can **ensure levels are consistent and benchmark performance against set KPIs**.

Going further

The science site at the university has implemented an incentive scheme to engage staff and encourage energy efficiency. Data from **encompass is used to track performances of specific buildings**, such as the physics building or library and the details of the energy consumption of each building is then published in an annual league table showing decreases and increases year on year and **highlighting the best and worst performers**.

The university's incentive scheme allows those who have saved energy **to recycle the associated monetary savings** back into their department, giving a **financial reward for increasing energy efficiency**.