NHS
Sustainable Development Unit

Case Study

ENERGY

GUY'S AND ST THOMAS' NHS FOUNDATION TRUST

Guy's and St Thomas' NHS Foundation Trust is one of the best known teaching hospitals in London.

It serves over one million patients a year, employs 12,000 staff and is one of only five Academic Health Sciences Centres in the UK.

In 2009 the hospital became one of the first trusts in London to install two combined heat and power engines (CHP) to produce its own electricity and heat to power its sites.

Combined heat and power (CHP) engines generate electricity while capturing the heat produced from the process. This contrasts with conventional ways of generating electricity where vast amounts of heat is simply wasted. This is often seen as clouds of steam rising from cooling towers. CHP captures some or all of the heat produced by electricity generation and can reach an overall efficiency in excess of 80%. In comparison coal-fire plant have an efficiency of around 38%.

"Guy's and St Thomas' excellent decision to install this eco-friendly technology in its hospitals acts as a fantastic example to others. We have worked closely with the Trust to help them take this step in order to radically cut their carbon footprint and crucially, save money off their heating and energy bills. We are installing similar measures in our buildings across the capital and helping others to do the same.

One of the key ways for London to play its part in tackling climate change is by producing energy locally in this way and I would encourage others to follow this lead."

Boris Johnson, Mayor of London

How did the Combined Heat and Power engines improve sustainability?

Guy's and St Thomas' CHP plant saves more than 11,000 tonnes of CO_2 each year. The engines and their installation were funded by a £10 million grant from the Department of Health's Energy and Sustainability Fund.

The installation of the CHP engines is the latest major step in the Trust's Earthcare and Energy campaign. The Trust is already well on its way to exceeding the targets set by the Department of Health and the NHS. The Trust had already reduced its CO_2 emissions by 20% by 2010.

Carbon and financial savings

The CHP plant is saving Guy's and St Thomas' £2 million each year and reducing CO_2 emissions by 11,000 tonnes. This saving is equivalent to either powering Newcastle for a week, or stopping 17,000 passengers flying to New York.

Success factors?

The benefits of this project are numerous. Its success hinged on the Trust Board understanding that the business case for this project was not simply financial, but was also about saving carbon, improving resilience of supply, protecting the Trust from future rising electricity costs and of course cutting the hospital's energy bills.

Any difficulties?

The CHP engines were fitted into existing buildings, increasing the cost of the project significantly. However, the business case remained compelling, and the payback for the project was still only 5 years. CHP is much more cost effective when built into a new building, but remains an excellent option even in older NHS estates.

Further Information:

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