

The Ray Crampton Energy Centre at Rampton Hospital

The Trust decided to replace an existing coal fired boiler system with a state of the art 'Energy Centre' utilising a number of energy sources. There were four key reasons: to increase resilience, radically reduce CO₂ emissions, improve efficiencies and reduce energy revenue running costs.

Nottinghamshire Healthcare
NHS Foundation Trust

Energy and carbon
management



(Shunt pumps at the Rampton site)

What was the issue being addressed?

In 2011 Nottinghamshire Healthcare began an evaluation to understand the requirements and demands for heating, hot water and electrical usage in order to put forward a strong business case to replace the old coal fired boilers and associated inefficient technologies. Helped by AEA consultants, the evaluation identified 22 potential credible options.

What action was taken to overcome the issue?

Following support from the Trust Board, procurement options were reviewed in discussion with the Carbon Trust and the benefits of the Carbon Energy Fund (CEF) identified. The CEF framework is a procurement framework specifically attuned to NHS Trusts'

requirements around the provision of energy systems and so presented an additional option for project delivery not available to other types of public or private bodies. The Trust tailored the CEF's standard contract for the procurement and provision of energy services, with Engie, to co-produce a fully fit for purpose contract to meet the Trust needs.

The contract will guarantee carbon and energy savings over the 15 year term, with penalties in built should they fail to achieve these or under perform in key measurable service areas of delivery.

To ensure site resilience the Trust developed a strategy to provide heating and hot water that would be generated from a mix of fuel types, including gas, oil and biomass.

What was the impact?

The new Energy Centre consists of a 1.2MWe CHP unit, a 999kW biomass boiler using woodchips as fuel, with a backup heating system consisting of three 750kW gas/oil dual fuel boilers. This will save 8,098 tonnes of CO₂ per year and be a major contributor to the Trust's carbon reductions enabling it to make significant steps towards meeting the Government's 34% reduction target by 2020.

As part of the works the site converted to Low Temp Hot Water District Heating, lowering temp from 115°C to 90°C, making the high grade energy system safer, more efficient and easier to operate.

The scheme will generate around 87% of the site electricity need from the CHP plant requiring only a small amount of top up imported electricity from the grid. Site resilience is also further assured with a backup supply from existing emergency generators.

"The new Ray Crompton Energy Centre provides the Trust with a significant step change in energy efficiency and sustainability whilst making recurring financial savings, which in turn can be invested back into services for patients. The scheme delivery strategy utilised an innovative financing/delivery option ensuring precious capital resource can be directed to patient care."

Robert Jones, Head of Capital Projects

The capital equivalent is around £5m, and will generate contracted guaranteed savings of £52k pa, on top of a further £730k pa direct fuel savings which arise by moving from coal to a combination of other fuels.

This scheme also enabled the Trust to remove around £5m of maintenance backlog liability. The CEF framework, associated financing and Engie expertise, enabled the Trust to expand the scheme to include the Effluent Treatment Plant replacement.

The project has received national acclaim at the NHS Sustainability Awards 2016 winning the Carbon category.

Lessons learned / success factors?

The scheme delivered a site resilient project for the hospital and a model for future energy saving developments for hub sites.

The new energy centre has been promoted to all Trust staff both during construction and following completion. These events enabled staff working or visiting Rampton Hospital to have increased awareness of the project and also the benefits in terms of carbon reduction for the hospital.

Knowledge of this scheme and best practice has been shared with other Trust colleagues embarking on similar projects.

£770k
saving PA

Contact:

Lynn Richards, Divisional Energy and Environmental Manager (Forensic)

Lynn.Richards@nottshc.nhs.uk