Distributed Energy

Powering the West Midlands' Economic Future

Autumn 2018

Powering Performance

Powering Resilience

Powering the Future

Centrica is helping organisations take advantage of intelligent, end-to-end solutions so they can monitor, manage and optimise their energy to power performance, resilience and growth.

See inside for what this means for key sectors of the West Midlands economy and how your area could benefit.

centrica
Business Solutions

We have calculated the potential savings from distributed energy solutions across all non-domestic electricity consumption in the West Midlands to be **£98.8 million.**

This figure is based on a reduction of 15 per cent on bills – which we have found to be achievable from sites where we have installed these technologies.

Our analysis suggests that if just 50 per cent of three key sectors utilised distributed energy solutions it could deliver the following for the sectors in the West Midlands:

Industry

£20m
per annum

Industrial

- Reduce energy costs by £20 million per annum
- Contributing £525 million for the West Midlands GVA

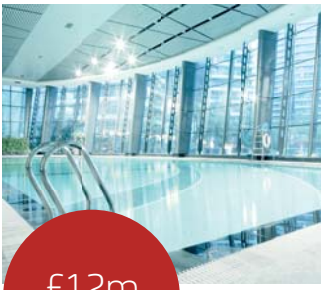
Healthcare

£5m
per annum

NHS the West Midlands

- Reduce energy costs by £5 million per annum
- Contributing £39 million for the West Midlands GVA

Hospitality and Leisure



£12m
per annum

Hospitality and Leisure

- Reduce energy costs by £12 million per annum
- Contributing £144 million for the West Midlands GVA

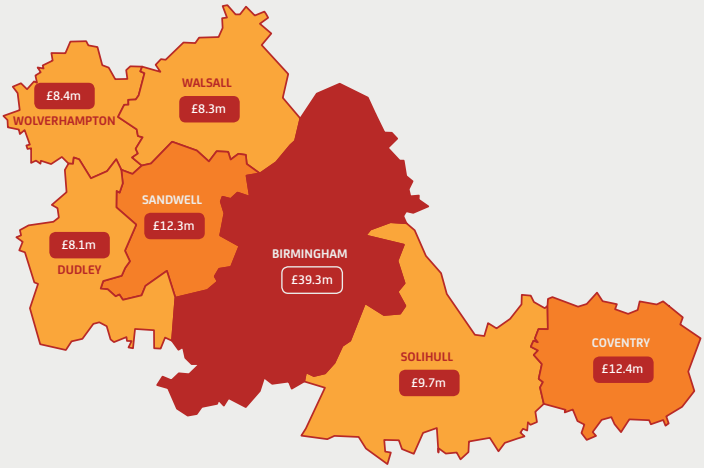
These three sectors alone then would add £708m to the GVA of the West Midlands, supporting an estimated 10,000 jobs.

Powering the West Midlands

Breakdown of projected savings across the 7 local authorities of the West Midlands

Key

- £30m or more
- £20m – £30m
- £10m – £20m
- £5m – £10m
- £5m or less



CASE STUDY:

Birmingham Heartlands Hospital

Reduce CO_2 and boost patient care

Birmingham Heartlands Hospital was tasked with reducing its carbon emissions. At the heart of this was finding a viable replacement for its ageing coal-fired boilers. These had served the Trust well for many years, but they simply couldn't perform to the standard of a modern generation system.

Creating a healthy alternative to deliver long-term results

ENER-G (now Centrica Business Solutions) provided a new purpose-built Energy Centre, housing a highly efficient ENER-G Combined Heat and Power (CHP) system, plus other technology including steam-raising boilers and an absorption cooling system.

The trigeneration system works by recovering most of the heat created in the generation process to provide electricity, steam or hot water for winter heating, and chilled water for use in the air conditioning systems during the summer.

By connecting the CHP unit to the hospital's main heating system, Birmingham Heartlands can minimise the use of the existing electricity-powered chillers during the summer. The spare cooling capacity can also be used to provide air conditioning to new areas of the hospital.

The hospital also upgraded its lighting with 1,800 high efficiency, low energy fittings. The £3.8 million programme was funded through a Public Private Partnership contract, which includes a £311,000 grant from the Carbon Trust.

The results

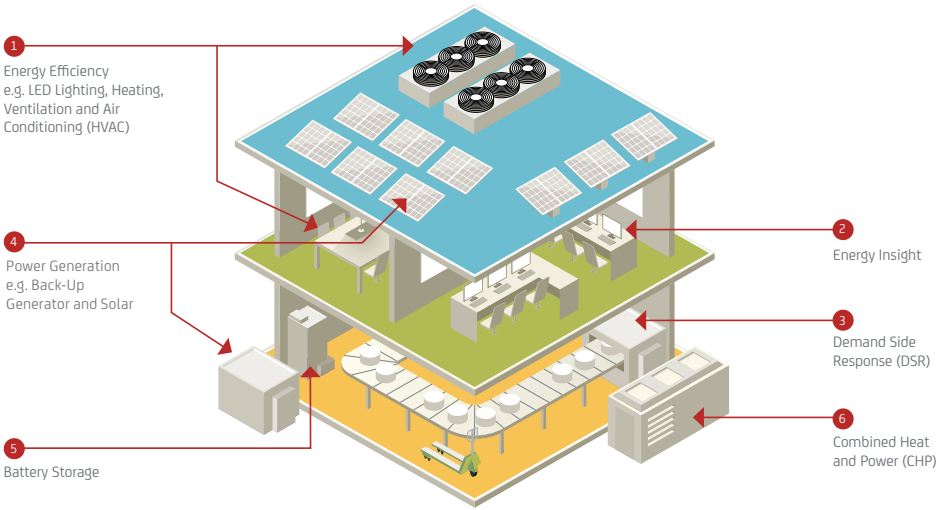
The CHP system is cutting the hospital's CO_2 emissions by 5,600 tonnes per year – the equivalent of a forest of 560,000 trees. CHP savings and performance are guaranteed for 15 years.

What is distributed energy?

The first step in understanding the potential of distributed energy solutions is understanding what the term means.

The World Alliance for Decentralised Energy defines this as "electricity production at or near the point of use, irrespective of size, technology or fuel used – both off-grid and on-grid." We believe that this is a good start, but is too narrowly defined.

Distributed energy should also cover a much broader range of solutions, including energy efficiency, monitoring and on-site generation, that can help organisations to take control of their energy and turn it into an opportunity.



1. Energy Efficiency

Reducing costs by upgrading or improving a range of energy-consuming processes.

2. Energy Insight

New technology is available that allows larger energy users to accurately monitor their energy use across all equipment and devices. For example, Centrica Business Solutions' own Panoramic Power technology.

3. Demand Side Response (DSR)

Revenue streams are available for energy users if they are able to reduce, or even increase, their energy consumption at times when the grid demands it. New technology allows energy users to respond to these changes in demand quickly and easily and without putting security of supply at risk.

4. Power Generation

A range of small-scale power generating technologies can provide on-site generation; delivering back-up power and the ability to sell excess energy back to the grid.

5. Battery Storage

Lithium-ion battery storage systems can be charged at cheaper times and then used when prices increase to better manage energy costs. They can also work alongside renewable technologies, which on their own are intermittent, and can be used to support the grid, which will create new revenue.

6. Combined Heat and Power (CHP)

CHP plants work by converting gas into both electricity and heat in a single process. It's one of the most efficient sources of energy and allows significant amounts of energy to be produced on-site, improving the resilience of supply, reducing costs and helping to reduce carbon emissions.

This summary has been compiled from our Powering Britain report, which you can see here: www.centrica.com/news/powering-britains-economic-future
For more information about distributed energy solutions and case studies of some of our projects: centricabusinesssolutions.com