

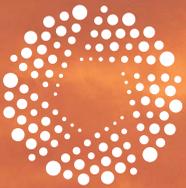
Distributed Energy

Powering Yorkshire and Humberside's 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 Yorkshire and Humberside's economy and how your area could benefit.

We have calculated the potential savings from distributed energy solutions across all non-domestic electricity consumption in Yorkshire and Humberside to be **£220.7 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 Yorkshire and Humberside:

Industry



£46m
per annum

Industrial

- Reduce energy costs by £46 million per annum
- Contributing £1.2bn million for Yorkshire and Humberside GVA

Healthcare



£12m
per annum

NHS Yorkshire and Humberside

- Reduce energy costs by £12 million per annum
- Contributing £89m million for Yorkshire and Humberside GVA

Hospitality and Leisure



£27m
per annum

Hospitality and Leisure

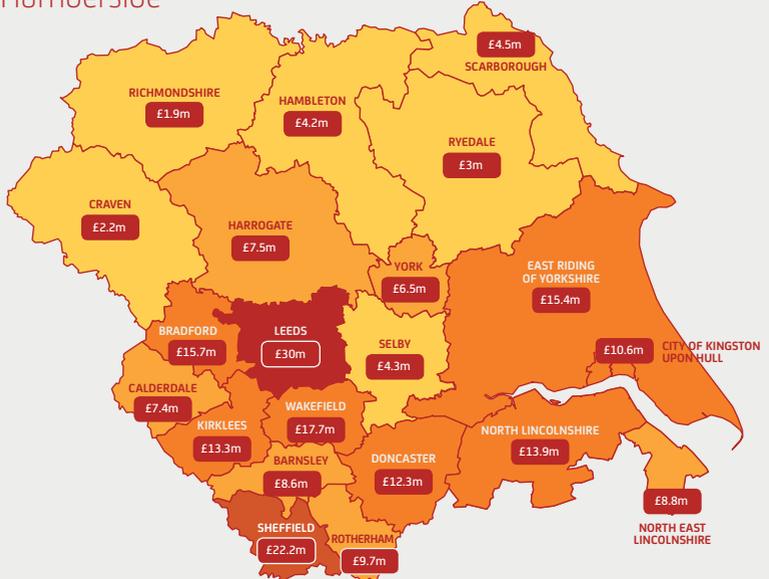
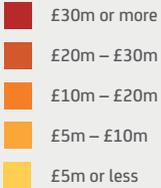
- Reduce energy costs by £27 million per annum
- Contributing £322m million for Yorkshire and Humberside GVA

These three sectors alone then would add £1.6bn to the GVA of Yorkshire and Humberside, supporting an estimated 22,000 jobs.

Powering Yorkshire and Humberside

Breakdown of projected savings across the 21 local authorities of Yorkshire and Humberside

Key



Energy efficiency at bakery plant

Centrica Business Solutions has been powering the food and beverage industry for more than 30 years.

Recently we have helped one of Europe's largest bakery plants save 1,000 tonnes of CO₂ emissions annually with a Combined Heat and Power (CHP) unit.

Our customer prides itself on sustainability – so when it started making plans for a new plant, it wanted to be sure the operation would be as energy efficient as possible.

We have supplied a 1MWe CHP unit at their plant in Yorkshire from our latest range, along with a 10-year maintenance contract to ensure it continues to run efficiently.

Exhaust gases from the engine are used to generate the site's base steam load requirements. Hot water is recovered from the engine, stored, then re-used by other equipment on the site.

Energy costs will be reduced by approximately £400,000 per year, allowing the company to cover the costs of the unit in around three years.

The customer is now looking at installing these technologies across their other sites in the UK.

CLlr Judith Blake, Leader, Leeds City Council

Resource efficient, climate resilient cities will not only be better places to live, they will also be more competitive and better placed to ride out future economic shocks.



Leeds Climate Commission has shown that by 2030 Leeds could save £277 million annually, or £348 a year for everyone in the city, if it exploited all profitable measures for energy efficiency and low carbon

development. This would create 4,200 extra years of employment and cut carbon emissions by an extra 22.7%.

With total energy bills for the UK's 50 biggest cities over £35 billion a year, the Commission has shown simple, profitable improvements to heating, lighting, insulation, appliances and vehicles would reap extraordinary results.

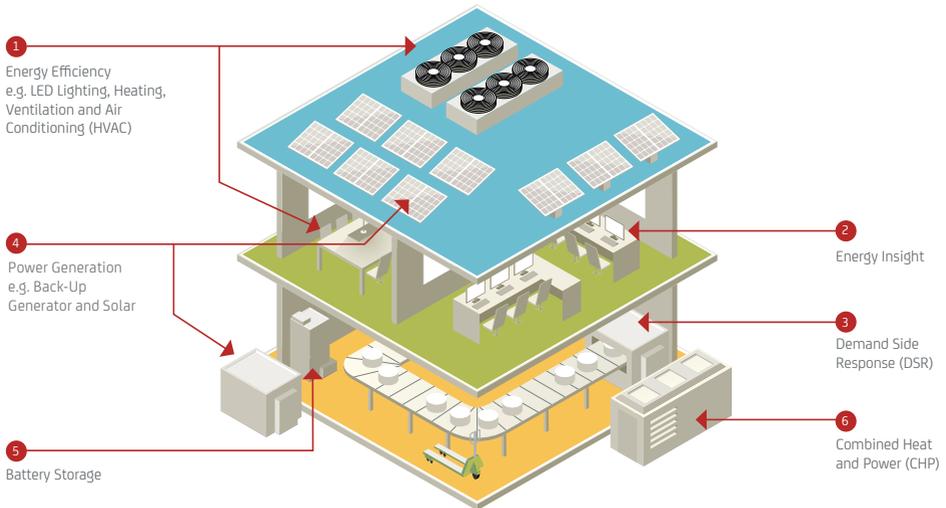
So I welcome the work that Centrica is doing to encourage organisations in our region to consider what distributed energy solutions could mean for them. In Leeds we look forward to collaborating with all sectors to drive this agenda forward.

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.