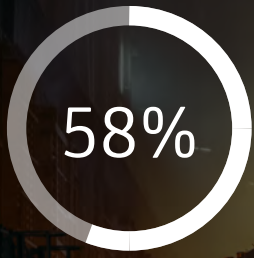


Gain competitive advantage and new revenue streams through increased efficiency

Powering competitiveness for industrial manufacturers



The percentage of manufacturing respondents who stated that using smart and emerging energy technologies was very important to gain competitive advantage¹

New opportunities to gain an edge

Faced with intense price competition from low-cost economies, UK industrial manufacturers need to drive down costs and generate new revenue streams. To increase production efficiency and responsiveness to customer demands, manufacturers are also under pressure to invest in automation, new production technologies and new business models. But with margins already squeezed and costs continuing to rise, finding the necessary capital is a major challenge.

Given the sector's heavy reliance on energy, we believe new energy technologies can drive greater efficiency, reduce operational costs and capture new sources of value – delivering real competitive advantage.

Addressing obstacles to remain competitive

Continuously rising costs, uncertain trading conditions, growing competition from low-cost manufacturing economies and reduced pricing in many segments have all combined to make it extremely difficult for UK industrial manufacturers to remain competitive.

The glut of cheap steel from China, for example, halved the price of steel between 2014 and 2015.² While in 2017, reducing costs was ranked as the second top priority for UK industrial manufacturers.³

With limited growth opportunities in domestic markets, many UK manufacturers are looking to increase exports. More than nine out of ten aerospace and defence respondents, for example, say they plan to expand into new geographic markets over the next two years.⁴ But with higher input costs – including raw materials, labour and energy – competing internationally is also highly challenging.

The risk of higher tariffs as a result of Brexit and US trade policies further inhibits competitiveness, creates increasing uncertainty and makes it essential to manage costs effectively to prevent more profit erosion. One report found that the UK is set to lose £125 million of exports every year due to US tariffs on steel and aluminum.⁵ Another report found that nearly 70% of industrial manufacturing executives ranked European political uncertainty as the top external factor impacting their business.⁶

While faced with all these competitive obstacles, the industry is also having to invest in increased automation and industry 4.0 technologies to increase production efficiency. In one survey, 62% of manufacturers said they were planning to invest in industry 4.0 technologies.⁷ But, with pressurised margins and multiple demands on capital budgets, funding such investment can be extremely difficult.

To find a way forward, we believe it is imperative that industrial manufacturers take advantage of innovative new energy strategies that enable them to maximise the value of their energy assets and protect competitiveness.

9 OUT OF 10

The number of aerospace and defence respondents who said they plan to expand into new geographic markets over the next two years⁸

2ND

The priority ranking given to reducing costs by UK industrial manufacturers⁹

NEARLY
70%

The percentage of industrial manufacturing executives who ranked European political uncertainty as the top external factor impacting their business¹⁰

62%

The percentage of manufacturers who said they were planning to invest in industry 4.0 technologies¹¹

The critical role of energy

Globally, the industrial manufacturing sector is one of the highest consumers of energy. In the UK, industrial plants represent many of the largest, single site energy users. The industrial sector consumes about 54% of the world's total delivered energy.¹²

Energy intensive processes – involving heating, cooling, ventilation, compressed air, intensive machine usage, lighting and boilers – mean that energy is a significant cost for most industrial manufacturers. This is particularly true in high temperature processes, where huge amounts of energy can be required to keep furnaces operating at temperatures of 1,700°C.¹³ Within steel production, for example, energy constitutes up to 40% of total production costs.¹⁴

With energy prices unpredictable and likely to rise, we believe that industrial manufacturers simply can't afford not to adopt a proactive energy management strategy and capitalise on opportunities to drive greater energy efficiency. Already, 74% of automotive manufacturers view energy as a business-critical issue, and 67% plan to increase their investment in energy management in the next 12 months.¹⁵

New technologies, new approaches, new opportunities

There are numerous ways in which innovative technologies and new approaches to managing energy can help industrial manufacturers reduce costs and generate new revenue streams to improve competitiveness. For example:

Energy insight and sensor solutions provide visibility of heat, electricity and gas use within production processes. Additionally, real-time, device-level visibility enables inefficiencies to be identified and improvements to be made to operational efficiency.

For example, gaining insight into energy use within furnaces can significantly reduce the amount of energy wasted through flue gases or hot product, which can be recovered and reused – reducing the costs of wasted energy.

Switching to new on-site energy generation technologies, including combined heat and power (CHP) – efficiently converting gas into both electricity and heat in a single process, which can cut a site's energy usage by 25% and deliver energy cost savings of up to 40%¹⁶ – renewables (such as solar) and on-site generation solutions, can create a flexible, lower cost energy supply and increase production efficiency.

Case study: We helped Fujifilm save £17,000 per annum by taking advantage of Energy Insights solutions, which allowed them to uncover a fault with their air compressor unit.

As high energy users, industrial manufacturers are also well placed to benefit from optimisation solutions that reduce energy charges and generate new income streams. For example:

Demand side response (DSR) programmes allow manufacturers to avoid peak price periods and sell any excess energy back to the grid.

Advanced optimisation technologies help by enabling marginal changes in demand profiles, reducing costs without impacting production processes or compromising product quality.

56% of manufacturers in a Centrica Business Solutions survey said that using on-site generation and selling excess capacity to create new sources of revenue was very important to their organisation.¹⁷

But despite the clear benefits, manufacturers with multiple demands on their capital budgets and a lack of in-house resources can struggle to take advantage of these opportunities. Which is where new approaches to funding and managing energy assets play a vital role. By working with a provider such as Centrica Business Solutions, who offer an end-to-end delivery model and innovative commercial packages, industrial manufacturers can overcome capital and resource gaps.

To improve production efficiency, drive down net energy spend and enhance international competitiveness, manufacturers must act now if they want to stay ahead.

54%

The percentage of the world's total delivered energy consumed by the industrial sector¹⁸

67%

The percentage of automotive manufacturers that plan to increase their investment in energy management in the next 12 months¹⁹

56%

The percentage of manufacturing respondents who stated that using on-site generation and selling excess capacity to create new sources of revenue was very important to their organisation²⁰

UP TO

40%

The percentage of energy cost savings that CHP can deliver²¹

¹ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

² British steel has been left weak by cheap Chinese competition, The Guardian, 2015

³ Annual manufacturing report 2017, The Manufacturer and Hennik Group

⁴ Global aerospace and defence outlook, KPMG, 2016

⁵ Annual UK export losses of £1.25m from US import tariffs, Euler Hermes, 2018

⁶ Annual manufacturing report 2017, The Manufacturer and Hennik Group, 2017

⁷ Annual manufacturing report 2017, The Manufacturer and Hennik Group, 2017

⁸ Global aerospace and defence outlook, KPMG, 2016

⁹ Annual manufacturing report 2017, The Manufacturer and Hennik Group, 2017

¹⁰ Annual manufacturing report 2017, The Manufacturer and Hennik Group, 2017

¹¹ Annual manufacturing report 2017, The Manufacturer and Hennik Group, 2017

¹² Industrial sector energy consumption, International Energy Outlook, 2016

¹³ How is steel produced? World Coal Association

¹⁴ Fact Sheet: Energy use in the steel industry, World Steel Industry, 2018

¹⁵ The future of energy report, Siemens

¹⁶ Centrica Business Solutions: <https://www.centricabusinesssolutions.com/energy-solutions/products/combined-heat-and-power>

¹⁷ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

¹⁸ Industrial sector energy consumption, International Energy Outlook, 2016

¹⁹ The future of energy report, Siemens

²⁰ Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations

²¹ Centrica Business Solutions: <https://www.centricabusinesssolutions.com/energy-solutions/products/combined-heat-and-power>



150MW

We helped a steel and mining plant return 150MW of energy back to the grid during peak periods after signing up to DSR with REstore (now part of Centrica Business Solutions)

Your priorities

Our experience of working with industrial manufacturers has highlighted the energy strategies that we believe you should prioritise, enabling you to remain competitive against low-cost international competitors and protect yourself against rising input costs:

- **Identify production inefficiencies** through energy insight and sensor solutions, to reduce avoidable waste and ensure optimal production.
- **Take advantage of on-site generation technologies** to reduce operating costs, freeing up capital to invest in new production technologies and new business models.
- **Investigate generating value from on-site energy assets** by taking advantage of advanced optimisation solutions.
- **Explore different approaches to funding energy** to ensure that you can take advantage of new energy technologies without being constrained by pressures on in-house resources.

Our solutions

Our work with leading industrial manufacturing businesses means that we are ideally placed to help you increase production efficiency and reduce operational costs, creating opportunities to finance new competitive advantages. Our solutions include:

- **Energy reduction action planning** that offers proactive monitoring of electricity, heat and gas with actionable operational insights.
- **Energy efficiency technology** that delivers cost savings and carbon reduction through on-site generation, including CHP and renewables.
- **Optimisation solutions** that enable you to:
 - generate value from your on-site energy assets by supporting the grid.
 - create value from marginal changes in demand profile without compromising product quality.
 - reduce non-commodity charges (through peak DUOs shaving and TRIAD avoidance) and commodity charges (through our wholesale route to market).
- **Flexible funding and contractual models (including ESA and PPA)** that remove barriers to deploying new energy technologies and free up capital.
- **Notifications about new cutting-edge technology** that can help you capitalise on new market developments.
- **End-to-end delivery capability** that reduces your dependence on in-house resources and accelerates deployment of more efficient solutions.

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