Perspectives series
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Improve resilience to reduce downtime and protect food quality

Powering profitability for food and drink manufacturers

centrica
Business Solutions

Why energy resilience is essential

>£180 BILLION

The annual cost of machine downtime to British manufacturers[1]

In today's intensely competitive environment, with margins under pressure, food and drink manufacturers cannot afford lost revenues, dissatisfied retailer customers and wasted resources. Avoiding production downtime is therefore imperative. Compromised food quality can also be very damaging, resulting in unhappy consumers and, in severe cases, health and safety issues.

With most food and drink manufacturers relying heavily on energy – whether for powering production equipment, refrigeration units, air compressors or ovens – a reliable and stable energy supply is key to keeping the business running smoothly.

But evidence suggests that many are leaving themselves vulnerable to costly outages or quality issues because of a lack of energy resilience. We believe it's essential that all food and drink manufacturers take advantage of new technologies and approaches to managing energy that can significantly improve energy resilience.

The risks of failure

Every business needs to manage risk in all its forms. For food and drink manufacturers, a number of vulnerabilities are particularly key.

Margins are tight and declining, and many food and drink manufacturers face a struggle to stay profitable. The risk of lost revenues and wasted resources as a result of downtime can be critical – recent research has revealed that machine downtime costs British manufacturers more than £180bn per year.[2]

Many food and drink manufacturers are particularly vulnerable to production downtime because of the perishable nature of their raw ingredients and outputs. And with many retailers also facing squeezed margins, production delays or any slippage in standards from manufacturers can cause major problems. No food and drink manufacturer wants to risk losing a valuable supermarket customer, for example.

Another key risk arises with today's increased reliance on technology to automate production processes. The greater this reliance, the greater the potential vulnerabilities, such as equipment failures or power outages.

More stringent food safety regulations – with severe penalties for non-compliance – also increase the pressure on manufacturing processes. The FDA Food Safety Modernization Act (FSMA) is the most sweeping reform of food safety laws seen in more than 70 years, and aims to ensure safety in the US food supply by shifting the focus from responding to contamination to preventing it. In the UK, fines have also become more severe. In 2017, Pioneer Foods was fined £275,000 after pleading guilty to 11 food safety offences.[3]

Consumers now have increasingly unforgiving expectations of food quality and declining confidence in food safety. The NFU Food Fraud Report found that only 12% of people in the UK have confidence in the European food chain and only 7% have confidence in the global food chain.[4] The percentage of Americans who are "at least somewhat confident in the safety of the food supply chain" fell from 66% in 2016 to 61% in 2017.[5] Mistrust of major food manufacturers is particularly high among millennials – 43% compared with just 18% of non-millennials.[6] In a social media-fuelled world, negative experiences or safety issues are widely shared and can do significant damage to a business's reputation.

12%

The percentage of people in the UK who have confidence in the European food chain[7]

66% → 61%

The fall in the percentage of Americans who are "at least somewhat confident in the safety of the food supply chain"[8]

43%

The percentage of millennials who mistrust major food manufacturers[9]

Achieving business resilience with a robust energy estate

With most production processes heavily reliant on energy, it has a crucial role to play in ensuring that food and drink manufacturers meet regulatory standards and consumer expectations. An unreliable or unstable energy supply can lead to production issues, costly downtime and even product quality being compromised.

Too many food and drink manufacturers, however, remain dependent on outdated energy systems. Their ageing and inefficient energy estates are increasingly prone to failure, shorten the life of production equipment and risk compliance breaches. In some areas, unreliable grid supply also raises the risk of production outages.

An unstable energy supply can cause problems with heating and refrigeration equipment. The damage resulting from a failure to meet food safety or quality standards – leading to fines, lost revenue and lost customers – can be significant. In the US, it's been estimated that 52% of all food recalls result in costs of more than $10 million, not including additional damage from loss of reputation and brand value.[10]

An unreliable energy supply also increases the risk of downtime and the associated rise in costs and wasted resources. 63% of UK manufacturers have said that they would be vulnerable in the event of an energy supply disruption.[11]

Alarmingly, the evidence suggests that many food and drink manufacturers are not taking effective measures to ensure their resilience. In a survey by Centrica Business Solutions, only 25% of food and drink manufacturer respondents said that they had fully assessed the risk of an energy supply interruption in the previous 12 months.[12] Only 28% said that they had implemented back-up generation at all or most of their facilities.[13]

Energy initiatives that reduce risks and costs

We believe that food and drink manufacturers must ensure that they have an energy estate that delivers genuinely reliable business resilience. They should take advantage of today's on-site generation and storage technologies to safeguard the security and stability of their energy supply.

On-site generation technologies – such as combined heat and power (CHP) generation, back-up generators and solar – are efficient sources of energy production which not only reduce dependency on the grid but also cut energy costs.

60% of electricity generated by CHP

Coca-Cola Hellenic Bottling Company Italia has installed a Centrica Business Solutions* CHP unit at its Italian bottling plant. The unit now generates 60% of the plant's electricity, 80% of its refrigeration requirements and almost all of its steam requirements.

Battery storage systems can also improve resilience by providing sufficient long-lasting energy to power production lines in the event of a grid outage.

A regular maintenance programme is another essential for ensuring the efficiency and reliability of energy estates. With operational staff often overstretched, maintenance can easily be neglected until a problem occurs. Outsourcing aspects of energy management to a third party – such as Centrica Business Solutions – eliminates this risk.

New energy insights and analytics solutions also significantly improve operational resilience by enabling more effective predictive maintenance. Energy sensors, for example, highlight anomalies in energy usage. By providing early warning of potential equipment failures, these sensors ensure that remedial action can be taken before any downtime occurs or product quality is affected.

Research has found that predictive maintenance technologies can reduce the time required to plan maintenance by 20–50%, increase equipment uptime and availability by 10–20% and reduce overall maintenance costs by 5–10%.[14]

* Previously ENER-G Italia (ENER-G has been acquired by Centrica Business Solutions)

75%

The percentage of food and drink manufacturer respondents who did not say that they had fully assessed the risk of an energy supply interruption in the previous 12 months[15]

60%

The percentage of electricity generated at the Coca-Cola Hellenic Bottling Company Italia production facility by a Centrica Business Solutions CHP unit

10–20%

The percentage increase in equipment uptime delivered by predictive maintenance technologies[16]

1 The Staggering Cost of Machine Downtime Report, Oneserve, 2017
2 The Staggering Cost of Machine Downtime Report, Oneserve, 2017
3 BBC News, Carlisle's Pioneer meat supplier fined £275K for bacteria in meat, Jan 2017
4 NFU Food Fraud Report 2017
5 Food & Health Survey, International Food Information Council Foundation, 2017
6 What's on your plate? Deloitte, 2017
7 NFU Food Fraud Report 2017
8 Food & Health Survey, International Food Information Council Foundation, 2017
9 What's on your plate? Deloitte, 2017
10 Food Safety in a Globalised World, Swiss Re, 2015
11 Energy resilience in UK manufacturing, Barclays, 2016
12 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations
13 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations
14 Predictive Maintenance and the Smart Factory, Deloitte, 2017
15 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organisations
16 Predictive Maintenance and the Smart Factory, Deloitte, 2017

Your priorities

Our experience of working with food and drink manufacturers has highlighted the energy strategies that we believe should be prioritised to minimise business risks:

- **Improve energy resilience** by putting robust on-site and back-up generation measures in place to cover interruptions to grid supply.
- **Take advantage of energy insights** to improve monitoring and maintenance processes for production equipment.
- **Ensure that effective maintenance programmes** are in place for on-site energy estates.
- **Consider outsourcing** aspects of energy management to reduce the demands on in-house operational teams.

Our solutions

Our work with leading food and drink manufacturers means that we are ideally placed to improve resilience through our innovative, end-to-end energy solutions:

- **On-site generation** ensures that production runs smoothly during interruptions to grid supply.
- **Ongoing maintenance** covering existing and new energy technology minimises the risks of unplanned outages.
- **Predictive maintenance** with energy sensors enables the detection of faulty equipment across production processes.
- **Back-up generation** such as uninterrupted power supply (UPS), batteries and diesel generators enable seamless production 24/7.

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