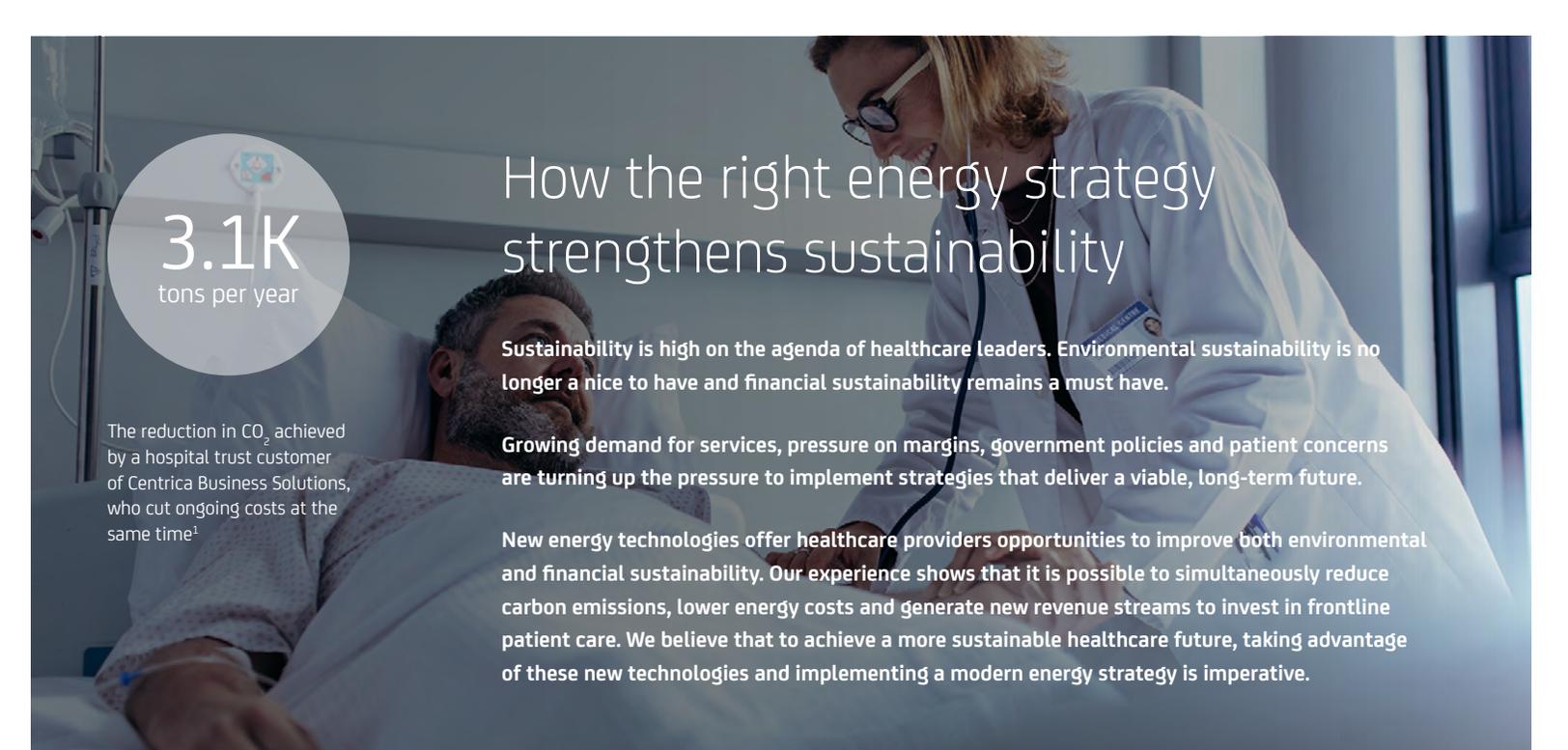


# Harness the potential of energy to build a sustainable future

Powering a sustainable future for the healthcare market



3.1K  
tons per year

The reduction in CO<sub>2</sub> achieved by a hospital trust customer of Centrica Business Solutions, who cut ongoing costs at the same time<sup>1</sup>

## How the right energy strategy strengthens sustainability

Sustainability is high on the agenda of healthcare leaders. Environmental sustainability is no longer a nice to have and financial sustainability remains a must have.

Growing demand for services, pressure on margins, government policies and patient concerns are turning up the pressure to implement strategies that deliver a viable, long-term future.

New energy technologies offer healthcare providers opportunities to improve both environmental and financial sustainability. Our experience shows that it is possible to simultaneously reduce carbon emissions, lower energy costs and generate new revenue streams to invest in frontline patient care. We believe that to achieve a more sustainable healthcare future, taking advantage of these new technologies and implementing a modern energy strategy is imperative.

## The need to achieve environmental and business sustainability

**For healthcare providers, sustainability means more than just environmental performance. With increasing costs and new outcome-based payment models that threaten existing revenue streams, healthcare leaders need to ensure a sustainable business model.**

Offsetting loss of income from traditional sources means diversifying and finding new revenue streams. According to a Deloitte survey of US Health System CEOs, 'many health systems are looking for new revenue sources to offset rising costs', including 'selling IP, launching philanthropic services and diversifying beyond core hospital services'.<sup>2</sup>

At the same time, improving environmental performance remains a key objective. Healthcare has a relatively high environmental impact:

- Hospitals have been estimated to account for over 8% of US commercial building greenhouse gas emissions.<sup>3</sup>
- Some forms of treatment are highly carbon-intensive – one year of kidney dialysis, for example, has been estimated to be equivalent to seven round-trip flights between New York and London.<sup>4</sup>

Many consumers are increasingly concerned about the green credentials of service providers, including those within the healthcare market. As competition continues to intensify across the healthcare market, building a business with strong green credentials becomes ever more important.

Many hospitals have now publicly stated commitments to reducing their carbon footprint. According to Practice Greenhealth's Sustainability Benchmark Report, the percentage of US hospitals that have a written plan to address climate change mitigation nearly doubled in the three years to 2017.<sup>5</sup>

7.4% > 1.3%

The percentage drop in the average annual spending growth of Medicare per capita, from 2000–2010 to 2010–2016<sup>6</sup>

54%

The percentage of healthcare respondents who felt that the link between sustainable energy use and brand image/ company values was very important<sup>7</sup>

x2

The percentage of US hospitals that have a written plan to address climate change mitigation nearly doubled in the three years to 2017<sup>8</sup>

# Enabling a more sustainable future with energy

**By taking advantage of low-carbon technologies and supply-side incentives, healthcare providers can simultaneously improve environmental performance, reduce energy costs and generate new revenue streams to invest in frontline services.**

Many healthcare facilities, such as hospitals and nursing homes, have under-utilized real estate (including roof spaces) that could be used for renewable energy generation. They also have a usage profile which requires lots of energy during the day, making technologies such as solar highly feasible.

The mixed energy usage requirements of healthcare facilities mean that on-site power production through cogeneration (combined heat and power – CHP) or trigeneration (CHP integrated with absorption chillers) reduces both costs and carbon emissions.

On-site generation technologies, such as solar, backup generators and CHP, also enable the generation of new income streams by selling excess capacity back to the grid – turning unused space into a productive asset.

## Cutting carbon output and generating revenue

Using actionable energy data from our energy insights solution, Panoramic Power, Excela Health in Western Pennsylvania reduced its energy consumption by 3.5 MW throughout the 2 million square feet of its three hospitals and satellite facilities, and also generated an additional \$50k in earnings by monetizing its energy with Demand Response.

## Overcoming resource and funding shortfalls

Despite the potential for significant savings, our research suggests that many healthcare providers are still not taking advantage of new, more efficient generation technologies – in large part because of a lack of awareness or a perception that they lack the necessary capital or skills.

But with flexible funding models available, and the option to outsource aspects of energy management to specialist providers such as Centrica Business Solutions, these obstacles can be overcome. We enabled one hospital, for example, to install a CHP unit that reduced their CO<sub>2</sub> emissions by 2,205 tons per year with zero capital investment. The unit is remotely monitored in real-time by our service center engineers, and backed by a comprehensive service package.

## More options, more savings

A number of other efficient energy technologies and approaches also offer significant potential benefits:

- **Setting appropriate temperatures and ensuring that heating and cooling controls are working effectively** can have a major impact on energy usage, particularly in facilities such as primary care centers, where heating accounts for 70% of energy usage.<sup>9</sup>
- **Implementing low-energy LED lighting** can also contribute to lowering carbon emissions. LED lighting is an energy-efficient, sustainable technology that is between 50–90% more efficient and lasts up to 50 times longer than traditional light sources. For example, we helped one large city hospital reduce its energy consumption by 77% and save \$40,000 a year by switching 1,716 existing light fittings to LED alternatives.

Another way that energy can help ensure a more sustainable future is by making it easier to introduce new technology that transforms the way healthcare is delivered. With the World Health Organization predicting that by 2030, the global shortage of healthcare workers will exceed 14 million<sup>10</sup>, technology has a key role to play in helping fill the gap.

New technology can support a range of benefits – from increasing staff productivity, to improving diagnosis and prevention and enabling better targeting of treatments – but they all put greater demands on energy usage. The way forward is to transition to a more flexible and resilient energy infrastructure. This provides the platform for digital healthcare, enabling healthcare organizations to realize the full potential of transformational technology.

## 90%

The percentage of healthcare respondents who agreed that there were opportunities for energy strategies to help enable a sustainable business model<sup>11</sup>

## 15%

The percentage of healthcare respondents who have implemented solar panels across most of their sites (only 16% have CHP installed at most sites)<sup>12</sup>

## 70%

The percentage of healthcare respondents who agreed that that they need both commercial and technical expertise to help realize new opportunities relating to energy<sup>13</sup>

## UP TO 20%

The percentage of energy usage in a hospital that can be accounted for by lighting<sup>14</sup>

- 1 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organizations
- 2 Deloitte 2017 Survey of US Health System CEOs
- 3 REHVA Journal
- 4 Sustainable health and social care: Connecting environmental and financial performance, Naylor C, Appleby J (2012)
- 5 Sustainability Benchmark Report, Practice Greenhealth, 2017
- 6 The Facts on Medicare Spending and Financing - The Henry J. Kaiser Family Foundation, July 2017
- 7 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organizations
- 8 Sustainability Benchmark Report, Practice Greenhealth, 2017
- 9 Primary healthcare: Caring for budgets through energy efficiency, Carbon Trust
- 10 Global strategy on human resources for health: Workforce 2030, World Health Organization, 2016
- 11 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organizations
- 12 Energy Advantage Research, Centrica Business Solutions. Statistics based on a six country survey of more than 1,000 energy decision-makers in large organizations
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- 14 Primary healthcare: Caring for budgets through energy efficiency, Carbon Trust



2,205  
TONS

We enabled one hospital to reduce their CO<sub>2</sub> emissions by 2,205 tons per year by installing a CHP unit, with zero capital investment.

## Your priorities

Our experience of working with healthcare organizations has highlighted the energy strategies that we believe should be prioritized, enabling providers to build a more sustainable future:

- **Take advantage of low-carbon, on-site generation technologies** to reduce carbon emissions and generate a new revenue stream.
- **Audit existing facilities to identify inefficiencies** in areas such as lighting, heating and cooling, then implement appropriate efficiency measures.
- **Implement the optimum energy strategy** – one that supports the needs of a modern healthcare system, including the transition to digital healthcare.

## Our solutions

Our work with leading healthcare providers means we are ideally placed to harness the potential of energy in creating a more sustainable future. We do this through our:

- **Expert advice** that helps deliver and execute a sustainable energy strategy.
- **Energy insight and analytics solutions** that help identify opportunities to reduce energy consumption and lower carbon emissions.
- **Renewable, low-carbon technologies** such as solar and CHP that help reduce emissions and generate on-site energy.
- **Power generation, demand response and energy trading solutions** that generate new revenue streams from on-site energy assets.
- **Flexible funding models** that remove the barriers to deploying new, lower-carbon technologies.
- **Environmental reporting solutions** that demonstrate the results of sustainability programs to patients, employees and regulators.

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