

## Energy in Action: Decarbonising the NHS, schools and public transport

21 January 2024

Despite energy prices falling recently, bills are still 15% higher than they were three years ago and are predicted to increase over the next year.<sup>1</sup> With high energy prices, payback periods for energy efficiency investments are much shorter – meaning the time to act is now.

It is crucial to recognise that reducing greenhouse gas emissions and safeguarding public health are closely intertwined with the decarbonisation of the public sector. The need to implement low-carbon alternatives to both how we heat our hospitals and how we power our police cars is vital.

Energy UK members, including bp, EDF Energy, E.ON Energy, Kensa, Shell, SSE and TotalEnergies, are among the companies working alongside the NHS trusts, local councils and emergency services to deliver innovative, practical and clean solutions.

### Cut carbon, heat smarter

In 2022, 10% of all heating emissions came from public sector buildings such as schools, libraries and hospitals.<sup>2</sup> While the Government has committed to reducing emissions from public sector buildings by 75%, at present natural gas remains the key source of heating.<sup>3</sup>

Investing in low-carbon heating technologies is an easy way public services can reduce their reliance on conventional and often expensive energy sources, such as gas. When public sector services save money on their energy bills, they can redirect funds into other essential resources to support the people they serve – whether this is hospitals being able to purchase lifesaving equipment or schools funding extra-curriculum activities.

Energy UK's members are actively involved in improving the energy efficiency of public sector buildings. **E.ON Energy** is collaborating with Nottingham's Queens Medical Centre to replace approximately 12,000 single-glazed windows with more efficient double-glazed units. The

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<sup>1</sup> Energy UK analysis of Ofgem (2024), [Energy price cap \(default tariff\) levels](#) and EDF (accessed June 2024) [Energy price cap predictions](#) adjusted for CPI inflation.

<sup>2</sup> [Department for Energy Security and Net Zero \(2024\) 2022 UK Greenhouse Gas Emissions, Final Figures.](#)

<sup>3</sup> [Energy Systems Catapult, Public Sector Decarbonisation Guidance.](#)

project is expected to cut emissions by 43% once the current gas-fired heating system is decommissioned and significantly reduce the hospital's energy bills.<sup>4</sup>

E.ON Energy has also supported the decarbonisation of Parrs Wood High School in Manchester. A student-led 'CO<sub>2</sub> Sustainability Team' collaborated with E.ON Control Solutions (ECS) experts to improve the school's energy efficiency by installing a new hybrid heating system with air source heat pumps, roof-mounted solar panels, new windows, doors, internal wall insulation, and upgraded LED lighting throughout the premises. These measures are projected to save nearly 213 tonnes of carbon and £154,000 in energy costs annually.<sup>5</sup>

**Kensa** has, over the past five years, installed ground source heat pumps in 20 public sector buildings, from schools and universities to leisure centres and fire stations, lowering bills and saving more than 1,770 tonnes of CO<sub>2</sub> per year. One such example in Wales saw a neighbouring primary school and bowling pavilion replace their gas boilers with Kensa heat pumps, which used a natural thermal spring called Taff's Well as a renewable heat source, saving 38.8 tonnes of CO<sub>2</sub> per year.<sup>6</sup>

### Drive green, move forward

Transport, and how we power our cars, vans and buses, is the largest emitting sector of greenhouse gas – producing a total of 26% of total emission in 2021.<sup>7</sup> The Government has committed to the Zero Emissions Vehicle (ZEV) mandate, requiring 80% of cars and 70% of vans sold required to be zero emission by 2030, rising to 100% by 2035.<sup>8</sup>

While lower price points are driving an increased uptake of electric vehicles (EVs), the UK needs swift uptake of low-carbon public transport options and an accelerated delivery of the supporting charging infrastructure to meet these 2035 targets. A low-carbon public transport system is vital to enhancing public health, increasing social mobility, and lowering transport costs for the general public.

Meanwhile, for emergency services, reducing carbon emissions is a significant challenge due to the reliance on extensive fleets of specialised vehicles. Vehicles such as ambulances, fire

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<sup>4</sup> [Nottingham University Hospitals \(2023\) Nottingham University Hospitals partners with E.ON to deliver net zero ambitions.](#)

<sup>5</sup> [E.ON \(2024\) £1.2m worth of sustainable solutions installed at Parrs Wood High School, thanks to support from E.ON Control Solutions.](#)

<sup>6</sup> [Kensa \(2023\) Taff's Well, Wales.](#)

<sup>7</sup> [Department for Transport \(2023\) Transport and environment statistics: 2023.](#)

<sup>8</sup> [Department for Transport \(2024\) Pathway for zero emission vehicle transition by 2035 becomes law.](#)

engines and police cars are also constantly on the move, so it's important to consider this when transitioning to low-carbon technologies.

Energy UK member **EDF** has been working with the Scottish Fire and Rescue Service to support its decarbonisation journey. In addition to assisting the Scottish Fire and Rescue Service with its aim to move 50% of its 755 light cars and vans to electric by 2025, and 100% by 2030, EDF is keen to ensure the service's infrastructure can meet the demand of the vehicles. It has already installed 51 chargepoints across the 46 Scottish Fire and Rescue sites, all of which are strategically placed to ensure the Service's electric response vehicles can cover the whole of Scotland.<sup>9</sup>

As we electrify our methods of transport, public sector vehicles will need access to rapid charging on the go. With a lack of infrastructure being one of the biggest barriers to low-carbon transport uptake, Energy UK members are working on installing the necessary infrastructure to charge our low-carbon fleets.

Aberdeen City Council and **bp** are designing, building and operating the Aberdeen Hydrogen Hub, which will produce green hydrogen powered by a purpose-built solar farm. The first phase involves building a hydrogen refuelling facility for buses, trucks and fleet vehicles that could deliver over 800kg of green hydrogen per day by 2025. While phase two could see production upscaled to supply over three tonnes per day of green hydrogen for road, rail, freight, and marine use by 2030.<sup>10</sup> Hub charging allows fleet operators to ensure vehicles start the day fully charged, minimising downtime and optimising route planning.

Likewise, Energy UK members **SSE** and **TotalEnergies** have joined forces to create **Source, a new joint venture that will deliver** up to 3000 high power chargepoints over the next five years in the UK and Ireland to meet demands from EV and fleet owners. On-route charging ensures that vehicles can remain in service longer, reducing the need for frequent returns to the depot. Chargepoints will be built in prime locations in and around urban areas. Powered by renewable energy provided by the two companies, the increase in chargepoints will support local communities and authorities wishing to move away from traditional fuel-powered vehicles.<sup>11</sup>

Ubitricity, part of the **Shell Group**, is working with local councils to deliver on-street parking for EVs, using a combination of bollards and lamppost chargers. With nearly 30% of households without access to off-street parking, lamppost charging offers a simple, accessible, and low-

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<sup>9</sup> [EDF \(2021\) EDF works with Scottish Fire and Rescue Service on ambitious Carbon Reduction Plan.](#)

<sup>10</sup> [Aberdeen Hydrogen Hub \(2023\) Planning approval paves way for first phase of Aberdeen Hydrogen Hub.](#)

<sup>11</sup> [SSE \(2024\) TotalEnergies and SSE launch Source, an EV Charging joint venture.](#)

cost charging, which can be integrated with existing street infrastructure.<sup>12</sup> Having access to local and low-cost charging will be essential for public sector workers, such as district doctors and nurses, as we electrify our fleets.

### **Energy in Action**

Transforming our public sector not only bolsters energy security and enhances climate change resilience but also brings about significant cost savings to essential services.

Energy Matters, for people, power and prosperity. If you have a case study showcasing innovative work within the sector, please get in touch via [press@energy-uk.org.uk](mailto:press@energy-uk.org.uk).

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<sup>12</sup> [Department for Transport \(2022\) Public Electric Vehicle Charging Infrastructure.](#)