

Sustainability challenges and opportunities for public sector organisations

30 April 2019

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Public sector as role model



The government has set ambitious targets for reducing the UK's carbon dioxide (CO₂) emissions, not least by minimising the country's reliance upon coal for generating electricity.

On 29 March 2018, the Department for Business, Energy and Industrial Strategy (BEIS) published provisional figures – compiled by National Statistics Office – for “2017 UK Greenhouse Gas Emissions”.

The good news is that the overall figure for UK net emissions was down 3.2% compared to 2016. However, neither the transport or business sectors showed any year-on-year change, whereas the public sector showed a 3% drop so that its contribution is now 2%, compared to transport's 27% and 17% for business.

The relative success of the public sector in reducing emissions makes it a role model for other sectors. In addition, the scale and geographical reach of the public sector gives it a high profile in the public's consciousness.

Given these factors, it seems that the government wants the sector to make even more changes and boost sustainability still further ...



The “Greening Government Commitments” suggest which actions UK government departments and their agencies need to take to reduce their environmental impact and meet emissions targets.

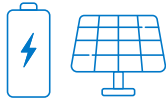
Central government’s overall goal is to reduce CO2 emissions by 43% by 2020 – against a 2010 baseline - potentially saving £340M. And its Clean Growth Strategy sets the public sector a voluntary target of a 30% reduction by 2020-2021 against a 2009-10 baseline.

The Strategy also suggests that government will provide £255 million of funding for energy efficiency improvements in England - and will help public bodies access that funding.

What’s more, the government wants the public sector to lead the way in transitioning to zero emissions vehicles.

These two points recognise that the public sector, and others, will need to be incentivised to shift behaviour and embrace technology if they want to change fast.

Help from technology...



Battery storage and renewable generation



Electric Vehicles (EVs)



Smart meters and UK Smart Grid



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Looking at technology first...

- **Self generation and battery storage**

It's possible to boost your sustainability, savings and income by self-generating using solar and wind. Installing a battery helps to mitigate the intermittent nature of these resources and to reduce costs.

You can draw upon your stored power when electricity from the grid is priced higher, and recharge your battery from onsite sources, or via the grid when power is cheaper. Self-gen and storage reduce your reliance upon the grid's electricity, minimising the risk of power failures affecting you.

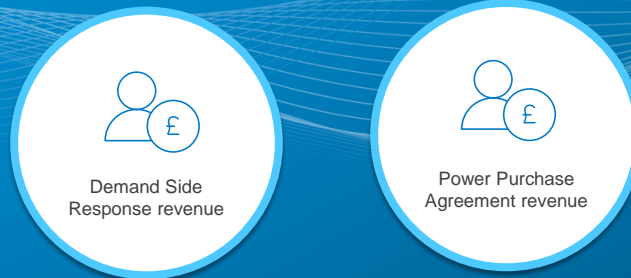
- **EVs are coming down in price; charging infrastructure across the country is growing**

The Green Alliance charity/think tank estimates that there are 25,000 central govt fleet vehicles in UK and a further 50,000 managed by local councils - scope to adopt EVs and reduce emissions.

- **Smart meters**

The latest smart meters – known as SMETS2 – can save you time and money, and help you reduce your emissions. They automatically record (and securely send) your electricity usage data, in near real time, to your supplier – who can then generate bills that are more accurate than estimated ones – so you only pay for what you use. A smart meter also means not having to note down/send your own meter reads – or wait for an agent. The data from the smart meter should help you identify usage patterns and map these against costs, to show how much you could save by shifting your consumption.

... and schemes



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1) DSR – creating new revenue streams

As the UK diversifies its energy mix, energy prices are becoming more volatile. Intermittent sources of energy such as solar and wind can make it difficult for National Grid to balance supply and demand.

DSR can help to manage these fluctuations – and is good for DSR participants too. You are financially rewarded for temporarily switching to local (non-grid) sources of energy or stored energy, or for reducing consumption.

There are different ways to take advantage of DSR, depending on your organisation's consumption flexibility, generation assets and energy storage capability. Participation results in payments and can protect you from peak energy costs and power cuts. Mitigating 3rd party charges is also a consideration.

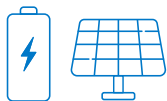
The Crown Commercial Service (CCS) encourages the public sector to take up the DSR11 scheme*. CCS has developed a framework that allows participants to access aggregators and DSR schemes without completing a standard Official Journal of the European Union (OJEU) procurement process – making it simpler and faster.

* <https://www.crowncommercial.gov.uk/agreements/rm3792>

2) Power Purchase Agreement (PPA)

A contract with a supplier at either an agreed or variable rate per unit. This option can offer you, as a generator, a variety of savings related to Use of System charges including Balancing Services (BSUoS). You can decide not to export at a certain time, but retain the option to do so on demand. This is viable if you can balance your costs against the income from supplying back-up energy to National Grid, via DSR.

Help from technology and schemes



Battery storage and
renewable generation



Demand Side
Response revenue



Power Purchase
Agreement revenue



Electric Vehicles (EVs)



Smart meters and
UK Smart Grid???

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Working with Haven Power as your energy partner could give you access to all of these technologies and schemes – and more.

Here's an example of one public sector organisation that we helped...



We're part of Drax Group, whose purpose is "to enable a zero carbon, lower cost energy future."

Drax Power Station is the UK's largest decarbonisation project, having transformed 4 of its 6 generation units from coal to biomass in recent years. Three weeks ago today, on 7th February, the plant announced that its Bioenergy Carbon Capture and Storage (BECCS) pilot had started to capture a tonne of carbon dioxide each day.

This is the first time, anywhere in the world, that CO₂ has been captured from the combustion of a 100% biomass feedstock. The aim is to scale up this success to deliver negative emissions – to get there, we need to identify how we can store or use the gas we capture, and we're working with the government And other businesses on that.

In addition, the Group's diversified its portfolio of renewable, low carbon and flexible generation capabilities with pumped storage, hydro, and thermal generation sites.

Working with the public sector - DSR



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Working with Haven Power and demand response aggregator KiWi Power, Colchester Hospital University NHS Foundation Trust **earns around £200,000 annually** from the power it generates onsite and a combination of PPAs and DSR services

The Trust's Estates department has also reduced expenditure and carbon emissions through improved energy management.

Working with local schools – shaping the future



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Haven Power is working with 3 local schools to educate young people about the energy industry and sustainability, as well as to help with Science, Technology, Engineering and Maths (STEM) curriculum.

Ipswich Academy, Westbourne Academy, and Ormiston Endeavour Academy are all within the Ipswich Opportunity Area, which is aiming to use education to unlock the potential of young people

We may well be involved in the following ways:

- Mentoring
- Work experience
- Greenpower project
- Apprenticeships
- Employer talks
- Careers sessions
- Workplace visits
- Alumni sessions

Thank you

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