ENERGY SERVICE CONTRACTS

Large energy consumers turn to innovative contracts

A growing number of energy companies now offer contractual schemes under which they say they can cut energy bills and carbon dioxide emissions for large consumers. *Andrew Williams* evaluates some of the options on offer.

With potentially zero-carbon planes and small modular nuclear reactors grabbing recent headlines, energy contracts hardly seem like the most cutting-edge topic in the energy world. But the right terms and conditions can help large energy purchasers save some significant cash – while taking important steps toward carbon neutrality.

Energy solutions

One of the frontrunners in this area is Siemens, which launched its 'Energy Solutions' offering in June 2020 to support organisations seeking to decarbonise and achieve net zero. The scheme works by Siemens merging its distributed energy, energy efficiency and energy trading businesses together in one package to offer its customers a comprehensive service. This, in turn, enables them to reduce their energy consumption, produce low-carbon electricity on-site and procure cheaper and greener energy contracts.

The offering is chiefly focused on helping campus-based operations, like universities, as well as other large energy users from the industrial and manufacturing sectors.

As Faye Bowser, Head of the Energy Solutions team at Siemens, explains, the company's approach is to conduct a detailed analysis of customer sites, starting with an investment grade audit, where staff identify all the relevant energy efficiency measures. Energy market experts then review the customer's energy contracts and recommend ways to save money and reduce risk. The next step is to build a 'digital twin' of their energy system and use in-house software to model different combinations of on-site generation, such as solar, wind or storage.

'Finally, we create a net zero pathway showing exactly what they need to do to eradicate their Scope 1 and 2 emissions,' Bowser says. 'Once this is complete, we then implement the energy solutions, and we're able to finance them as well as guarantee the performance of all the technology.'

For Bowser, the major benefit of the service is that it can significantly reduce carbon and costs from operations at zero capital cost to the customer – and that Siemens is able to guarantee the performance of the technology it installs.

'We can deliver everything from energy efficiency to on-site generation, so we are a comprehensive energy partner. We also have a number of digital technologies that not only enable us to design better projects, but also run customer sites much more efficiently,' she adds.

Siemens has already worked with a number of large energy users in an effort to help them decarbonise and embrace the idea of net zero emissions. One interesting example is at Keele University, which Bowser says has reduced its carbon footprint by a third through the installation of what is claimed to be Europe's largest smart microgrid.

The project combined a number of technologies, from demand response to EV charging, as well as a cutting-edge distribution network control system. Elsewhere, Siemens has delivered projects

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Photo: Centrica

with a number of large industrial customers, including at one of its own factories in Congleton, as part of its own transition to net zero by 2030.

'Not only does this show we're "drinking our own champagne", but also underlines the fact we really understand the demands of working on a manufacturing facility, and are able to deliver major energy projects without affecting the factory's productivity,' says Bowser.

Energy-as-a-service

Elsewhere, British energy services company Centrica has recently launched a novel Energy-as-a-Service (EaaS) bundle, billed as a 'fully-financed package designed for firms looking to take investment in energy-saving technology off their balance sheet.'

As part of the new offering, an EaaS agreement will typically involve a partner, like Centrica Business Solutions, designing, installing and maintaining energy solutions, as well as managing usage, to deliver savings on both energy costs and emissions. The partner will also supply imported top-up electricity and gas to the customer's premises, ensuring the overall power mix is optimised.

According to Tim Wynn-Jones, Head of Consultative Solutions at Centrica, this type of financing means projects are repaid from the energy savings made over the contract term, 'although energy cost-savings can be realised from the outset'. Such EaaS deals typically include the operation and maintenance of on-site generation technology, such as combined heat and power (CHP) units or solar photovoltaic (PV) panels.

'On-site generation technology offers businesses a range of benefits over and above energy bill reduction. It allows firms to improve their energy resilience as a result of being less reliant on grid power, and can dramatically reduce CO_2 emissions if renewable generation is integrated into the mix,' says Wynn-Jones.

'By helping with the upfront investment in advanced energy technology, the use of EaaS can support businesses in achieving improved energy security, as well as cost and carbon savings. The added bonus is that it also allows businesses to treat energy as an asset that can be sold for profit, opening up new revenue streams,' he adds.

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'The nature of a venue like the NEC is that its electricity use is incredibly varied, with large shows creating a high demand for power, while the periods between the shows have limited demand,' says Wynn-Jones. 'By transitioning to decentralised power, the venue is now able to generate more revenue by selling this extra capacity to the grid.'

> ***'Net Zero is already changing the way large organisations operate – from corporations like Siemens to universities, councils and hospitals'***
>
> **Faye Bowser, Siemens**

Multiple benefits

In addition to launching the Energy Solutions package (above), Siemens has also teamed up with Macquarie's Green Investment Group for another Energy-as-a-Service offering. As part of the partnership, the German technology giant has formed a new joint venture called Calibrant Energy.

According to Lidija Sekaric, National Business Director, Distributed Energy Systems at Siemens, the popularity of EaaS continues to grow. The new company offers what Sekaric describes as on-site energy solutions, including solar, CHP, battery storage, microgrid controllers and central utility plant upgrades.

'We help the customer optimise those choices for their energy targets,' she explains. 'Calibrant develops the solution and retains the ownership of the assets that the customer benefits from. We also take on the responsibility of maintaining and operating those assets. The customer pays for the energy generated from the assets, without having to provide large upfront capital costs for the equipment.'

For Sekaric, the benefits of on-site energy and storage are 'usually multiple' – and include cost reductions relative to the current setup; carbon reduction with new sources and optimisation; and resilience with local power generation and storage. Less obvious bonuses include the fact that the customer transfers the risk in asset operation and gains access to engineering expertise, as well as financial structuring to pay for these assets as utilities.

Since Calibrant is a brand-new entity, the number of users is limited at this stage. However, Sekaric reveals that the company has a number of projects in the development pipeline, some of which will be with large energy users. Since its formation, Calibrant has also announced that it has entered into power purchase agreements (PPAs) with two school districts in Illinois. Taken together, these projects will result in the mitigation of 1,4000 tonnes of CO_2 from the environment.

At present, the company is only focused on US operations and Sekaric expects that the US market will continue to be large enough to keep the company busy for the moment. That said, she confirms that Siemens is also developing similar projects around the globe with a range of partners – including an innovative scheme with Finnish brewery Sinebrychoff. The scheme will provide a virtual power plant (VPP) and energy storage technology, supported with financing solutions, to 'create one of the first examples of power flexibility in an industrial site.'

Huge growth area

Moving forward, Sekaric believes that there will certainly be a need for Siemens to assist customers with the electrification of their end-use sectors and the optimisation of on-site energy. Meanwhile, Bowser reveals that Siemens views contracts like those offered by Energy Solutions as a huge growth area. This is largely because of the strong commercial case for investing in energy efficiency and on-site generation, as well as the imperative to decarbonise.

'Net zero is already changing the way large organisations operate – from corporations like Siemens to universities, councils and hospitals,' says Bowser. 'I think in recent years there's been a big shift in the understanding people have about emissions, and now our customer base is very well informed about carbon dioxide so you can see it's a much more important topic to them than before.'

'Some of the big trends we see in the market are around hydrogen and alternative fuels,' she adds. 'Many of our customers are keen to explore these and understand how they will affect their operations. Siemens is investing significantly into this area and we ourselves have developed a roadmap for when we will deploy hydrogen fuel cells to power our buildings.'

Ultimately, as economies move towards net zero emissions, Wynn-Jones believes it is going to be essential to get businesses, big and small, taking action to eliminate carbon. Doing so in a manner that doesn't add additional cost will make sense to a lot of organisations. ●