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Sustainable Carbon Reduction Requires Coordinated Approach

With growing concern about climate change and increasing pressure to reduce carbon emissions, businesses are putting zero-carbon targets at the top of the agenda. But making the transition to carbon neutrality is a complex process, affecting all aspects of an organisation's operations and activities.

Pressure from all sides

The pressure to reduce carbon emissions is unrelenting. The government has set a net zero carbon target for the UK by 2050. Businesses will have a major part to play in achieving this target, which means the road to carbon reduction is likely to become increasingly regulated as the deadline approaches.

In April 2019, the Network for Greening the Financial System (NGFS), a coalition of 34 global central banks and insurers, highlighted the huge financial risk that climate change poses to businesses. Its first comprehensive report stated that: "If some companies and industries fail to adjust to this new world, they will fail to exist."¹

In some cities, clean air zones have been established, which impact the activities of businesses within

those zones. Local authorities across the UK have also declared climate emergencies, with the introduction of targeted plans to reduce carbon emissions in their districts.

Businesses face pressure from their own shareholders too, as well as customers and the wider public. Employees expect their employers to minimise their environmental impact, and people increasingly value businesses that demonstrate a commitment to caring for the planet. All of which means that carbon-reduction policies could even impact an organisation's ability to attract and recruit the best young talent.

Pressure for climate action comes from supply chains too. Globally, businesses want to work with suppliers and partners who share their principles. Businesses that fail to take action on carbon reduction are likely to find it difficult to participate in the increasingly connected and environmentally conscious supply chains of the future.

Overcoming the barriers

There are, of course, many benefits of transitioning to a zero-carbon model, from improved operational and energy efficiency, to greater resource

optimisation and cost reductions. The incentives for carbon reduction, and the need to take action, are nothing new – but businesses also face many barriers.

These include time pressures, everyday business priorities and external uncertainties, including Britain's impending exit from the EU. Access to funding to support carbon reduction, including investment in low-carbon technologies, is another significant barrier, alongside access to the expertise required to identify and implement the most effective measures.

Many businesses are also fragmented, not only geographically but also organisationally, with different people or departments responsible for energy management, facilities maintenance, operational management and other activities that impact the carbon footprint. All of these diverse and sometimes conflicting interests and departments need to be coordinated and to work in harmony if a business is to maximise opportunities for long-term carbon reduction.

One step at a time

So where to begin? It's important to take this complex process one step

at a time and to develop a structured action plan. The all-important first step is to identify where your carbon emissions are coming from. A company's greenhouse gas emissions can be classified into three scopes:

- Scope one – direct emissions. These can come from fuel combustion, your owned vehicle fleet and fugitive emissions.
- Scope two – energy indirect emissions. These originate from electricity, heat, steam and cooling purchased for your own use.
- Scope three – any other indirect emissions. These include emissions associated with purchased goods and vehicles, product use, waste disposal, transportation, distribution and employee business travel.

The newly introduced Streamlined Energy & Carbon Reporting (SECR) legislation requires all large companies to report on scope one and two emissions, which means these will be available to view in your next annual report. Once you know where your emissions are coming, you can begin to implement effective actions to reduce them.

Start with energy efficiency

A sensible starting point in any carbon-reduction programme is energy efficiency. Assess how much energy you are consuming, when and where it is being consumed, and where efficiencies can be made. Accurately targeting energy efficiency requires a clear view of all energy data. Sophisticated energy-management software can be used to analyse this data and identify opportunities for efficiencies. In many cases, improvements can be made by tweaking processes, altering temperature and control settings, modifying equipment set-points and adjusting timings. Implementing smart building systems can help to automate controls and manage all building assets for optimum efficiency.

In addition, you may need to convert existing assets into more energy-efficient alternatives or even invest in new equipment. With the

right advice and guidance, you can ensure that any investments are more than repaid over the lifetime of the new assets.

Migrating your company fleet to electric vehicles is another major step towards decarbonisation. Installing charge points on your site, connected to renewable power supplies, provides a fully sustainable vehicle charging infrastructure.

Renewable sourcing strategies

After making the best use of the energy you consume, consider where that energy comes from. Sourcing electricity from renewable generators is an effective way to reduce your carbon footprint. Corporate power purchase agreements (PPAs) enable you to secure a direct supply agreement with a specific renewable generator, enabling you to demonstrate exactly where your energy is coming from.

Another option is to install 'behind-the-meter' renewables on site to directly supply your premises. If you're fortunate enough to have room on site to install solar panels, anaerobic digestion or other renewable plant, you can directly supply your own electricity. Installing these generation assets on your site provides a direct source of renewable power, reduces your reliance on grid energy, and offers an opportunity to earn revenue by exporting surplus electricity. Installing batteries on your site to store any excess electricity generated and provide back-up

power can further reduce your need for energy from the grid.

However, you are unlikely to be able to supply your entire electricity requirements from an on-site plant, so this option will need to be combined with supply contracts for energy from other sources. Choosing a green energy supply contract gives the assurance that the energy you buy is generated from renewable sources. There are many green energy supply options available, so it's important to ensure you know what you are buying. To choose a truly zero-carbon option, you need to know the provenance of the energy. Some green energy contracts involve the supplier selling on green certificates purchased on the open market, rather than buying energy directly from a renewable generator. So be careful what you buy.

Ideally, carbon reduction should be achieved by adding new sources of renewable power to the electricity network, whether on-site or linked directly to your premises. However, once you have reduced carbon emissions to the lowest possible level for your business, it may be necessary to sign up to carbon-compensation schemes to counter any residual emissions associated with your operations.

Combined approach is key to sustainable carbon reduction

It's likely that reaching zero carbon will require a combination of many or all of these measures. It's essential



to achieve the correct balance of options for your business, which requires the expertise of a specialist partner to review your entire operation and devise a strategy that works for you. It's crucial to ensure that all measures work in harmony and avoid conflicting actions in different parts of your organisation.

For example, a business could fulfil a percentage of its demand via a corporate PPA, supplemented by grid energy supplied via a green energy supply contract. On-site solar panels could directly supply another percentage of the company's energy needs, while a programme of energy-efficiency measures and smart building technology could help minimise overall energy consumption. Such a combined approach provides the most cost-efficient and sustainable way to tackle the challenges of achieving zero carbon.

Wakefield Council: accelerating the journey to zero-carbon

Having declared a climate emergency in its district, Wakefield Council appointed energy and services group,

ENGIE, to help achieve its target of becoming carbon-neutral by 2030.

The council recognised that it needed to go further and faster than the UK's target of becoming net-zero for carbon emissions by 2050. Its ambitious target will involve



broadening and accelerating its existing Energy Plan, which has already provided significant energy and emissions savings.

ENGIE is using its expertise in delivering the zero-carbon transition 'as a service' to develop a road map of projects for the council that will achieve carbon-neutrality within the stated timescales. The plan provides Wakefield Council with a comprehensive analysis of its current energy and carbon footprint, which is

used to identify specific opportunities for decreasing energy use and emissions.

To date, ENGIE has completed or is currently delivering 35 energy and carbon-saving projects with Wakefield Council. These will reduce annual energy use by 3.5 million kWh, equating to more than 900 tonnes of CO₂ and resulting in annual cost savings of nearly £300,000.

Author's profile:

Graham has over 20 years' experience in the energy sector, initially in numerous roles in ENGIE's Supply business, and after a 7 year spell in Paris optimising and trading the

group's long term oil indexed gas contracts he has returned to the UK in 2018 to work in his current role.

Graham will discuss ENGIE and Wakefield Council's journey to carbon neutrality at EMEX on Thursday 28 November in the Sustainability and Climate Change theatre.

¹ A Call for Action: Climate Change as a Source of Financial Risk, April 2019. Network for Greening the Financial System.

