THE BIG ZERO REPORT 2023

2023

Welcome to THE BIG ZERO REPORT JUNE 2023

It is released in time for the **Big Zero Show** and I am both excited and humbled by the attention the event has received.

We are set to have the biggest event ever, with more than 3500+ delegates registered to come. For me it shows one thing... net zero is alive and well.

In the year since the inaugural show, we've had three Prime Ministers, three budgets, the fourth IPCC report, inflation of 11%, a record-breaking heatwave, sky high energy bills, nuclear branded sustainable, eco-protests galore, snowfalls like the Alps and now another heatwave. Throw in a COP, our new King who's as green as they come and it has been a monumental year of change.

In this report, our major partners for this show will take you through everything I've discussed and more. You'll learn why, unsurprisingly, energy costs are the major factor for businesses, though they are still committed to net zero. We'll explore the transition of fossil fuel companies into the net zero landscape, how to ensure we can get connections when we need to, as the grid decarbonises. The role of innovative planning and smart procurement, to help protect you from price shocks. And how despite its detractors, hydrogen will be a significant player in our gas transition.

I'd ask you to pay particular attention to the interview I conducted with **Ofgem CEO, Jonathan Brearley on page 4.** He talks about the challenges to regulate fairly and equitably, with all the innovation yet to come and why businesses like yours need to get their voices heard.

Our report is now a annual look at the world we are facing and it is one of change. I think more than anything, the **energy crisis** has made everyone think about consumption. We now realise there is a cost to what we do and how we use our resources. Sadly, until it hit our pockets, most of us have not worried about it.

Neighbours in my street have asked me about how to get an EV, people I know are buying less, more and more are thinking about repairing instead of replacing gadgets and clothing. I've even moved from disposable blades to my dad's old time safety razor, with the cuts that follow!

We know we cannot carry on and I hope by next year's show and report, we have all done one thing to cut our emissions.

For those of you at our show, I hope you enjoy all that is on offer, we have amazing displays, 40+ content sessions and so many people here to network with and learn from. My thanks to our amazing array of speakers, all our sponsors and most of all the FNZ team who bring this all together.

One final thing, watch out for **future net zero learning**, a revolutionary carbon education program which we will showcase at the show and will be launched soon. It's part of our new content refresh for future net zero.

Enjoy this report, we will be back with the **Big Zero Show on July 2nd and 3rd 2024**, with an extra day for young people and graduates, as they will make our future net zero! Join us then.

Sumit Bose
Founder, future net zero

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Jonathan Brearley, Ofgem CEO: Regulating for a net zero future

Ofgem CEO Jonathan Brearley spoke to future Net Zero Founder Sumit Bose about the energy regulator's plans moving forward regarding an equitable net zero future.

How can access be fair for businesses all over the UK, whether they're based in rural areas or slap bang in the middle of the city?

Mr Brearley started by setting the scene for changes and what business owners can expect in the coming years: "First of all, you've got to understand the scale of change that we're in. Right now, most of us have lights in our house, we heat our house with gas, we run our business usually with electricity or gas and we drive vehicles big or small through a petrol engine.

"Only in 10 years' time, many of us will be using electricity for our cars, we'll be either having low carbon gas or will indeed be using more electricity for the other parts of our lives – and everything is going to change around us because the efficiency of what we use is going to be much more important."

So, the net zero future is seemingly planned out but how will the energy system adapt and how can the green transition remain fair for everyone?

"The best way we can ensure equity is to build a system that's able to adapt to that. I know right now connections is a big problem, we are working with National Grid and government [to put] in place measures to allow people to connect more easily over time.

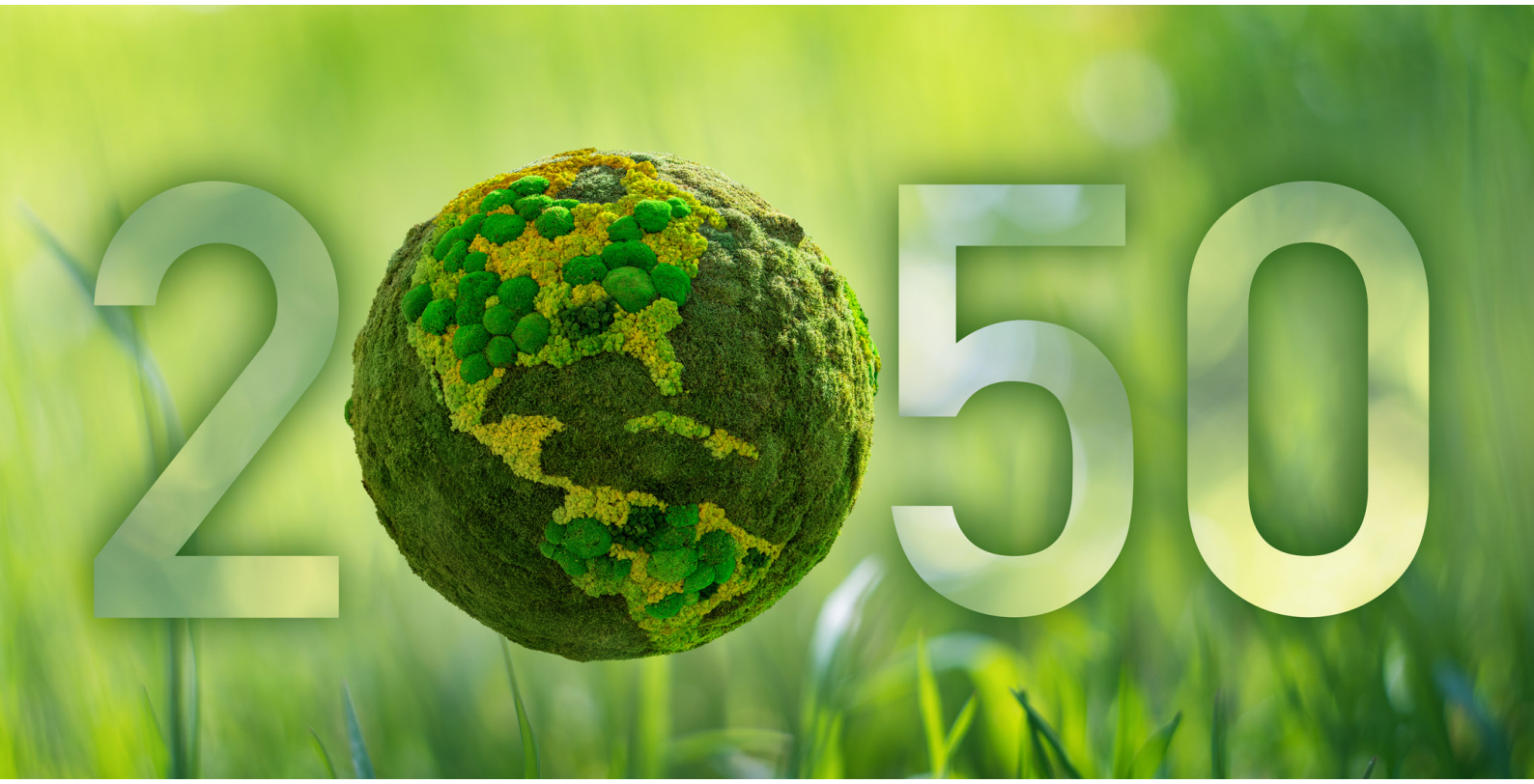
"That's going to be around managing the queue, that's going to require the industry to give a little through this process but

throughout that I think that will allow all investors better access to the system, whether you're building new wind farms, solar panels or indeed you are a data centre wanting to connect and use the energy that everyone's producing."

On regulation of new products, he added: "What we don't want to do is allow a Wild West to develop where customers are put at risk, of course we don't. But equally we need to make sure there is enough space in the market for new products to be able to come forward, for new things to be offered to customers; so we get the innovation that we need."

He concluded with thoughts on how data will shape this change: "Ofgem's been talking for 10 years about flexibility services, about new ways of doing things. I'm more optimistic than ever that [net zero] is going to happen. The political consensus is there, the technological opportunity is there – and I believe the market and regulatory frameworks are evolving to make sure that it happens."

Click here to watch full interview.



Green gas and the role it plays in achieving carbon net zero

THE STORY SO FAR – ARE GLOBAL EFFORTS ON TRACK TO ACHIEVE NET ZERO BY 2050?

Quite simply, no. 2023 has been hailed as the year of change, change where net zero ambitions take shape, but it can be difficult to gauge the progress made with the climate change challenge. On the one hand, there are reports of the clean energy revolution. A new momentum of renewables. Hydrogen on the horizon with its big leap up the agenda (which we'll get to later!).

And on the other, the science paints a very bleak picture. Emissions are rising, countries have been too slow to react, the 1.5C target will be missed. Has there been a huge underinvestment in clean energy, and a reluctance to move away from fossil fuels? Or are strides being made in the energy transition?

With no real global plan on how to achieve net zero, just goals, the energy transition hasn't been and isn't going to be an easy one. The number of countries pledging net zero ambitions has increased, but challenges in capabilities persists and still we face 22 billion tonnes of CO2 emissions worldwide in 2050.

Yet, an increase in pace is seen throughout 2022/23 in the fight to meet the challenge with a detachment from the excessive

reliance on Russian gas as Europe rapidly re-evaluates energy security, diversity and independence. The energy crisis has created a space for sustainable renewables and flexible solutions. And so, TotalEnergies are in the race to become a major player in the energy transition accelerating our own targets to achieve net zero by 2050. With big investment and big thinking and an unprecedented push to clean technology by 2030 with biogas, biomethane and green hydrogen, the largely untapped green net zero heroes.

CLEAN AND GREEN - WHAT'S THE STRATEGY?

At TotalEnergies, we asked ourselves the critical question - How can we respond to current energy demand while preparing for the future? We need reliable energy now as demand continues to rise, while balancing this with a reduction in the consumption of fossil fuels.

We are speeding up efforts to build a new system centred on low-carbon energies — renewables, biofuels and biogas; and clean hydrogen and carbon capture storage for offsetting residual fossil-fuel emissions. Essentially, clean, green energy.

You may have spotted the word 'gas' in there and be wondering why it's still in our energy mix, after all it's a fossil fuel, right? Well, here's the good bit. Green gas, or biogas - biomethane as it's also known plays an essential role in the energy transition and achieving carbon net zero and here's why.

IT'S ALL GOING TO WASTE ANYWAY - GREEN GAS THE KEY ENABLED TO ACHIEVE CARBON NET ZERO.

Firstly, what do we mean when we say green?

Green refers to a renewable gas made from sustainable sources. Renewable, as in it can be replenished at a higher rate than it's consumed and, sustainable, as in it cannot be depleted.

Biogas is a naturally occurring low carbon green gas which is produced by the Anaerobic Digestion (controlled decomposition without oxygen) of fresh organic waste which is fermented in digesters. Organic waste such as animal matter, plant material sewage and food waste.

In the UK alone, over 140 million tonnes of organic waste is produced annually and so the potential impact is huge! The European Commission believes that, once scaled up, Biomethane would save around 110 Mtonne of CO2 emissions. This is around 6% of the total effort required to achieve 55% greenhouse gas reduction, a key global target.

SO HOW DO WE GET FROM BIOGAS TO BIOMETHANE?

Biogas created from Anaerobic Digestion is a mix of carbon dioxide and methane. The carbon dioxide is split off from the methane, removed of impurities and you've got Biomethane. This is now chemically identical to natural gas, meaning it can be injected straight into the current gas network and used for the same purposes as natural gas, just without the emissions. As the existing infrastructure is already set up, biomethane has high value for consumers in cooking and heating homes and power generation.

The production of biomethane prevents methane and other harmful greenhouse gasses being released into the atmosphere. Methane accounts for around 30% of global warming since pre-industrial times and close to 20% of the methane emissions are a result of organic waste created by human activity. As methane is being captured and injected into the grid, it's significantly reducing the impact on the environment making this an essential component to achieving net zero.

This is why, at TotalEnergies we've ramped up our production targets and why we feel biogas and biomethane are a key component in the energy transition.

BIOGAS PROJECTS – ACCELERATING THE DECARBONISATION OF OUR ENERGY MIX

We are aiming to produce 2 TWh/year of biogas by 2025, and more than 20 TWh/year by 2030 worldwide. This production is equal to the annual gas consumption of 2 million households and will avoid the emission of 4 million tons of CO2/year.

In France, we've commissioned the largest biogas production unit, BioBéarn. Fed with organic waste, this new unit is already feeding biomethane into the natural gas network, providing local communities with decarbonised energy.

Working with Clean Energy in Texas, construction has begun on a biomethane production unit from an onsite supply of livestock manure. Producing biomethane to be used as an alternative for fuel to help decarbonise road transport.

In March this year we also invested in Europe's fourth largest biogas producer in Poland, Polska Grupa Biogasowa, generating renewable heat and power. This raises our production capacity to 1.1 TWh and makes TotalEnergies segment leaders in Europe.

LARGE SCALE PRODUCTION FOR A LARGE-SCALE POPULATION – IS THE POTENTIAL GOING TO WASTE?

Although firmly in the spotlight, biogas and biomethane are still new energies in the fight against climate change and so globally, we've not yet seen production on a mass scale, nor a big enough reduction in the emissions targets.

With questions raised around regulation, availability of organic matter and biogas to biomethane conversion technology limitations, when will production be seen on a large enough scale for the growing population? This new energy still needs government support to compete with fossil fuels but is now taking off, driven by the decarbonisation milestones in 2025 and 2030.

WHAT'S ON OFFER – CHOOSING RENEWABLE ENERGY FROM US

With our focus on biomethane production to go green, customers can benefit from this now to make strides on their own path to achieving net zero.
Choosing renewable energy from us will help you reduce your carbon footprint and fulfil your business' CSR commitments.

We've made renewable options available for both SME and Large Business customers, and we'll match the gas you use with gas from a renewable source using Renewable Gas Guarantees of Origin (RGGOs) certificates. At the moment, we are seeing that demand is heavily outweighing supply in terms of these certificates and therefore increased production is required in the UK to allow more consumers to be supplied by green gas.

We also offer carbon offsetting, which is backed by Certified Emissions Reduction (CER) certificates and Verified Emission Reduction (VER) certificates. You can use this to offset electricity and gas consumption, and other forms of energy consumption in your organisation such as transportation, making it carbon neutral.

Please get IN TOUCH with us if you'd like further information.

While we are convinced that biogas will be a major energy source in the coming years, this isn't the only new emerging energy source to make an entrance. Welcome to the hydrogen economy. Well, the start of it anyway.

HYDROGEN ON THE HORIZON

Green hydrogen to be exact. Easy to store, versatile and does not emit pollutants. Produced through a process of electrolysis, separating water into hydrogen and oxygen. Powered by renewable energy sources, this is a potential game changer in eliminating emissions in hard to abate industries. It's set to speed up the development of green mobility, decarbonise large-scale industry and allow for the storage of surplus energy.

As the UK government double the low carbon hydrogen production capacity to up to 10GW by 2030, the difficulty now is how to scale up production and bring the price down.

Met with early challenges of cost and the availability of renewable energy sources, in the ever-moving renewable landscape this is about to change, albeit slowly. With costs expected to fall, as renewable energy becomes cheaper, green hydrogen will become increasingly more economical.

HYDROGEN READY

TotalEnergies is already working with our partners to decarbonise all hydrogen used in European refineries by 2030, reducing C02 emissions by 3Mt per year, with an ambition to pioneer mass production of clean and green hydrogen.

We've partnered with Engie to develop France's largest site for the production of green hydrogen from 100% renewable electricity, producing 5 tonnes of green hydrogen per day. This innovative solution has large-scale hydrogen storage to balance intermittent electricity production and continuous hydrogen consumption.

Earlier this year, we also formed a joint venture with Air Liquide to develop a network of more than 100 hydrogen stations for heavy-duty vehicles on major European routes.

The renewable hydrogen production capacity currently under development in Europe and India will contribute to the ambition for new molecules — biofuels, biogas, hydrogen, and e-fuels — to reach 25% of our energy production and sales mix by 2050.

Find out more

Reach your goals

As the UK's leading gas and electricity supplier to businesses and the public sector, we can help with all your energy needs.

So whether you're looking for a trusted, expert supplier who'll support you for the long term, or a partner who can help with your carbon net zero ambitions, our superior service, competitive prices and innovative products can help you reach your goals.

Find out more at business.totalenergies.uk

TotalEnergies

British Gas

Shaping energy with
Centrica Business Solutions

2023

Building the business case for net zero

HOW CAN BUSINESSES STRIKE THE BALANCE BETWEEN THEIR COST AND ENVIRONMENTAL GOALS?

THERE IS NO GOING BACK

Organisations everywhere know they need to decarbonise their activities, and are planning how to get to net zero. But in 2022 it became much harder. Geopolitical tension plunged European energy markets into turmoil and added to the pressures facing the global economy.

Planning for the future has never felt more difficult. As uncertainty and volatility continue, how will organisations manage energy costs and secure a sustainable supply without neglecting decarbonisation? This report aims to provide some answers. In our fourth year of surveying a wide range of organisations about energy and sustainability, we look into how they are pursuing the twin goals of energy cost efficiency and decarbonisation. One thing is certain: no organisation can afford to wait. The energy landscape has changed significantly since our last study in 2021, but a carefully costed long-term strategy is as crucial as ever.

THIS YEAR'S SURVEY FINDINGS

Financial risk and energy security are the two most substantial risks facing organisations in the next year.

• Managing energy cost is the priority:

46%

of organisations say that cost is currently more important than sustainability and...

42%

say they are prioritising long-term gains over quick returns and low-risk strategies — down from 53% in 2021.

• The need to reduce energy costs and to make those costs more predictable are respondents' biggest challenge for the next three years.

BUT ORGANISATIONS CANNOT FORGET THEIR NET ZERO AMBITIONS

say that investors and shareholders are more in favour of investing in renewable energy than ever before.

46%

of respondents say that market conditions are making it harder to finance capital spending on low, or zero, carbon technology.

Research data in this report is based on surveys conducted in 2021 and 2023. The 2023 survey was based on responses from 500 executives, predominently from food and beverage manufacturing (30%), healthcare (25%), hospitality (15%) and manufacturing (13%).

LESS IS MORE

MANAGING ENERGY COSTS IN A TOUGH ENVIRONMENT

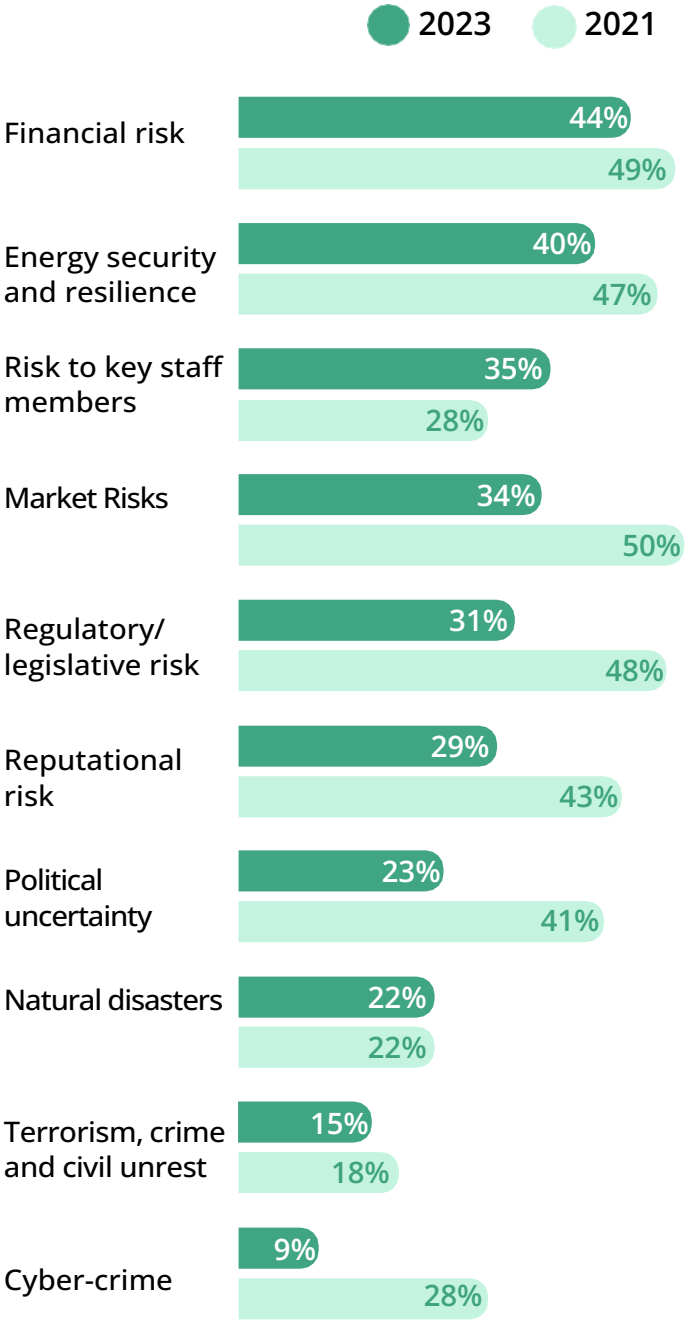
MANAGING COST EMERGES AS A PRIORITY FOR ORGANISATIONS IN 2023

Securing a resilient supply of energy at an affordable price is a concern for the leaders of many organisations. While wholesale energy prices have fallen in recent months, they remain three to four times higher than they were in summer 2021.

Many companies were shielded throughout 2022 because they signed multi-year fixed price contracts before the second half of 2021. But as many of these contracts expire through 2023, even if wholesale prices remain broadly at current levels, organisations are likely to face significant price increases

For 44% of organisations, financial risk is now the most serious threat they face; for 40%, it is energy security. The global economic outlook is not exactly favourable — the International Monetary Fund predicts a sharp slowdown in 20231 — but only about a third of organisations are worried about market risks. Regulation is an even less pressing concern.

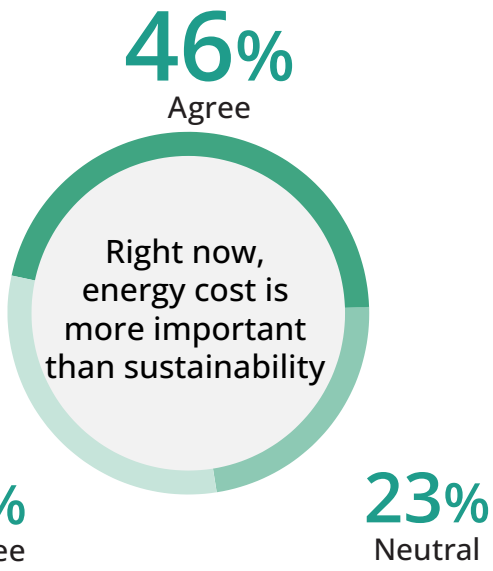
THE RISKS THAT ORGANISATIONS WORRY ABOUT MOST



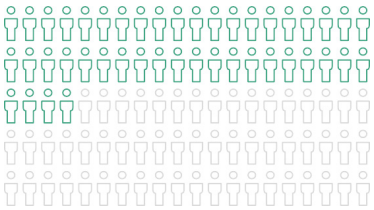
TOP BUSINESS RISKS

Inevitably, these risks are affecting organisations' priorities. for instance, 46% say that the cost of energy is currently a more pressing issue than sustainability.

ENERGY COST IS NOW THE PRIORITY



The Paris Agreement still commits us to net zero carbon emissions by 2050, including a 45% reduction by 2030. But as 2022 drew to a close, many organisations were struggling to cope with the cost of energy. As a result



44%

of respondents say that lower and more predictable energy costs are a major challenge for the next three years — more than for any other challenge.

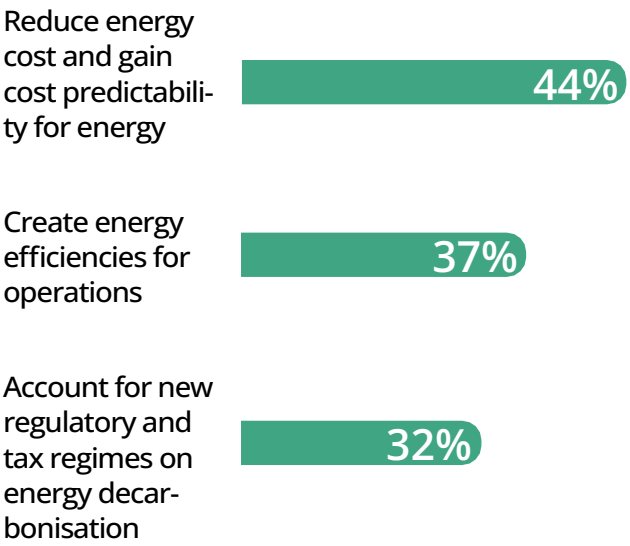
TOP ENERGY CHALLENGES

COST REDUCTION IS NOT THE ENEMY OF SUSTAINABILITY

The good news is that creating cost efficiency and sustainability are not mutually exclusive objectives. For example, 37% of respondents are striving for increased energy efficiency in their operations, and as their energy use comes down so too will their costs and emissions.

Many of the tactics organisations will use to reduce costs can also support their decarbonisation efforts. In particular, businesses should be developing or securing data and analytics capabilities to identify where energy-saving measures will have the greatest impact, and to monitor and refine performance. This can also help them to make more informed decisions around supply contract renewals, or new energy technologies to implement.

COST IS THE BIGGEST ENERGY-RELATED CHALLENGE OF THE NEXT THREE YEARS

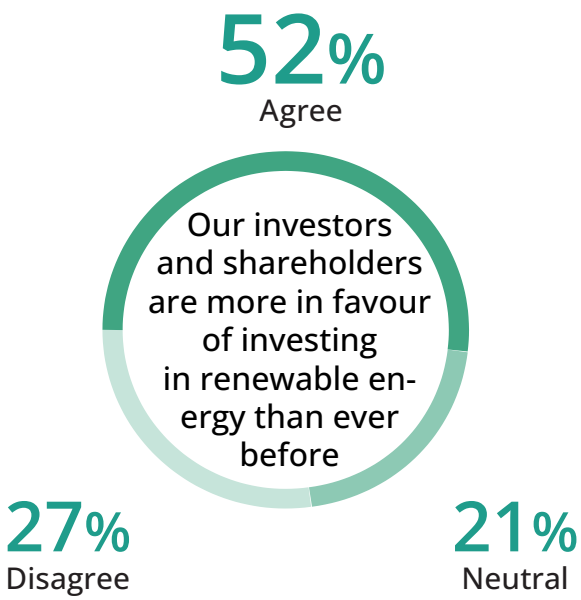


NEGLECTING SUSTAINABILITY COULD PROVE TO BE FINANCIALLY RISKY

Organisations that disregard their sustainability and decarbonisation strategies while they focus on cost will come under mounting pressure from various stakeholder groups, including end-customers and investors.

Investors, for instance, are pressing for organisations to become more sustainable. In this survey, more than half of respondents say that their investors are more in favour of investment in renewable energy than ever before. After all, many investors have their own decarbonisation targets to meet, and they recognise the financial case for reducing emissions before the regulation catches up.

INVESTORS ARE DEMANDING A SHIFT INTO RENEWABLES



ACTION POINTS

PRACTICAL STEPS YOU CAN TAKE TO MANAGE COSTS IN A TOUGH ENVIRONMENT

1. Build or secure data and analytics capabilities that enable your organisation to identify, track and refine progress over time. This will also give you greater visibility and predictability.

2. Identify energy-efficient and sustainable quick wins to reduce costs and decarbonise. Savings now can unlock larger investments later, creating a strong business case for cost management and sustainability.

3. Develop the business case for investment in renewable energy and decarbonisation technologies by considering both financial and sustainability benefits.

THE LONG VIEW: SUSTAINING A STRATEGIC AND EFFICIENT ENERGY POLICY

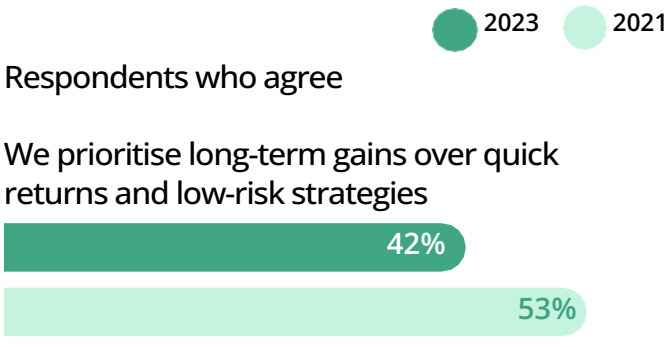
DELIVERING LONG-TERM STARTEGIES

ENERGY MANAGERS ARE NOW CRUCIAL TO REACHING THE TWIN GOALS OF COST EFFICIENCY AND DECARBONISATION

In tough times, organisations naturally slip into defensive mode, they step back from long-term strategic goals in favour of tactical responses to immediate pressures. And this year's research shows that this is exactly what is happening.

For example, while 53% of respondents in 2021 said they prioritised long-term gains over quick returns and low-risk strategies, the proportion in 2023 is 42%. And instead of getting ahead of regulation, organisations are now more inclined to hold back on decarbonisation initiatives until they are forced to act.

ARE ORGANISATIONS ABANDING THE LONG TERM?

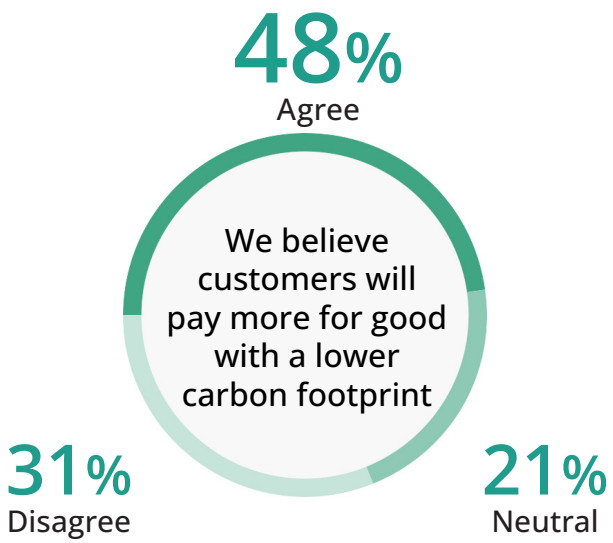


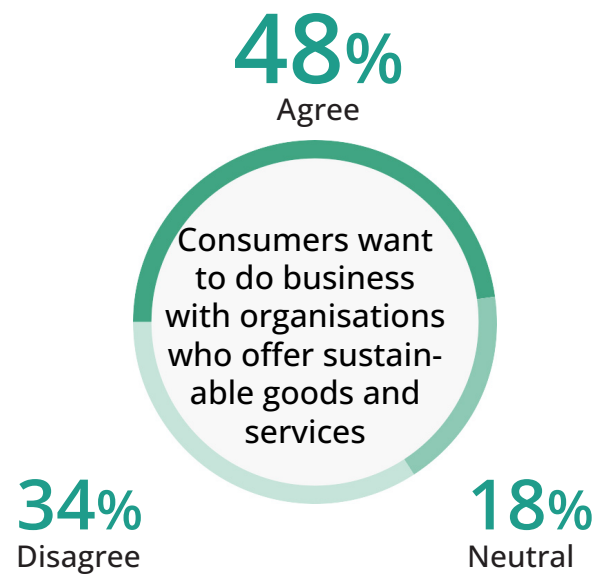
This shift is understandable. When governments rapidly imposed new legislation as the energy crisis intensified in 2022, organisations had little chance to plan ahead. The UK's Energy Bill Relief Scheme, for example, was put in place over a matter of weeks in 2023.

But organisations should try to keep their strategic goals in focus. Their key stakeholders will continue to hold them to account: both investors and customers are demanding change. In this research, 48% of respondents say they believe consumers want to do business with organisations that offer sustainable goods and services. And respondents say that consumers are prepared to pay more for sustainable goods even when the cost of living is rising.

This is vital. If customers are prepared to pay more for sustainable goods and services, organisations that provide them will secure better margins and improve their financial fundamentals.

SUSTAINABILITY PAYS





SKILLS THAT ENERGY MANAGERS NEED

ENERGY MANAGERS ARE CENTRAL TO THE DECARBONISATION EFFORT

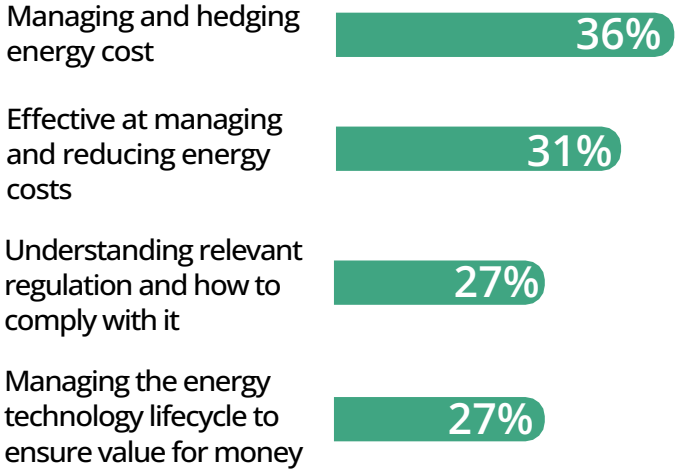
Leaders in energy management will play a crucial role in keeping their organisations focused on longer-term sustainability goals. Energy managers will need to manage multiple priorities — finding cost efficiencies at the same time as fulfilling decarbonisation mandates.

This calls for a broad range of skills. More than a third of respondents (36%) say that the ability to manage and hedge energy costs is a vital competency for energy managers in the current environment, and 31% say they need to reduce cost.

But other competencies remain in demand too, including skills related to decarbonisation, regulation and longer-term investment. This will help organisations to stay on track to hit their decarbonisation targets even as they are hit by the current headwinds.

IS SEARCH OF THE ALL-ROUNDER ENERGY MANAGER

What are energy managers' most important skills?



Organisations do not have to meet these challenges alone. Almost half of respondents (49%) say the ability of supply chain partners to help reduce their carbon footprint is part of the selection process. A similar proportion, 47%, say that energy procurement and management are crucial to their sustainability strategy.

Organisations will need help to identify and implement energy technologies that will reduce costs and emissions and to build the business case for investment, scrutinise performance and report on progress.

YOUR PARTNER CAN HELP

Respondents who agree

2023 2021

We choose supply chain partners based on their ability to reduce our carbon footprints

Energy procurement and management are crucial to our sustainability strategy

ACTION POINTS

PRACTICAL STEPS YOU CAN TAKE TO SUSTAIN A STRATEGIC AND EFFICIENT ENERGY POLICY

1. Work with your partners. Use the competencies of your energy supplier to accelerate progress towards your strategic goals.

2. Refocus your attention. If the energy crisis has diverted attention from your long-term decarbonisation strategy, restate your goals, assess your progress towards them and define a new path to achieving them.

3. Get back in front of the regulatory agenda. While there may be further interventions from policymakers that will require an immediate response, identify the regulatory deadlines that apply to your organisation and act before you have to.

4. Give energy managers as much support as possible. Do they have the resources and capabilities they need to manage the current volatility, while staying focused on the long-term net zero strategy?

FUTURE STEPS: INVESTING IN ENERGY COST EFFICIENCY AND PREDICTABILITY

RENEWABLE ENERGY SUPPLY

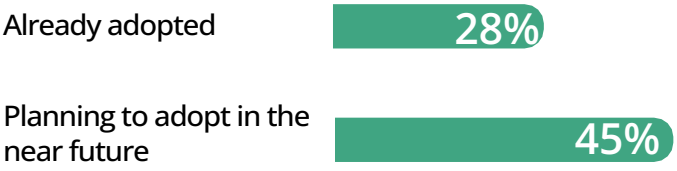
AGAINST THIS BACKDROP, WHAT STEPS CAN ORGANISATIONS TAKE TO INCREASE ENERGY COST EFFICIENCY, WHILE ALSO WORKING TOWARDS THEIR NET ZERO GOALS?

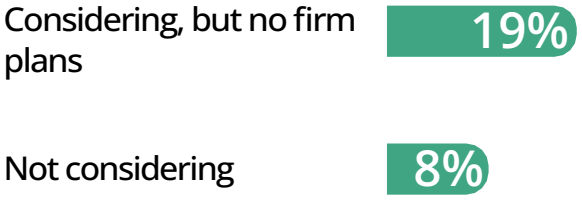
A simple first step is to switch to a renewable or zero carbon energy supply. With clear fuel mixes, you'll know exactly where your energy is coming from, and with a fixed term agreement, you'll know the cost too.

However, just 28% of businesses surveyed said they have already adopted renewable energy supply, with 45% of respondents considering it or planning to adopt it in the near future. Among light manufacturers, just 18% of respondents have adopted renewable energy supply.

This represents a missed opportunity for businesses who still haven't made the change.

RESPONDENTS WHO HAVE ADOPTED A RENEWABLE ENERGY SUPPLY





UNDERSTANDING ENERGY CONSUMPTION

What's more, after 30 energy suppliers went into administration in 2022, many organisations are looking for stability from their energy provider. And, according to our survey, the vast majority of businesses want more from their suppliers than just good value for money. Only 25% view energy as just a cost of doing business.

One of the things that organisations want is for their energy supplier to help them to better understand their energy consumption. In the past, there were no requirements for energy suppliers to make energy data easily accessible for non-domestic customers.

That's changing now. As of December 2022, a new government mandate means non-domestic customers must be able to request consumption data from their energy supplier. And from October 2024, this information must be available automatically, in a free, user-accessible way.

Some energy suppliers, like British Gas, are choosing to go further this information now, giving you the information you need to make informed buying decisions

IS ENERGY JUST A COST OF DOING BUSINESS?

ACTION POINTS

PRACTICAL STEPS YOU CAN TAKE TO INVEST IN ENERGY COST EFFICIENCY AND PREDICTABILITY

1. Switch your energy supply to a zero carbon or renewable option with a fixed term tariff, so you know where your energy is coming from and how much it will cost.

2. Make sure your energy supplier is giving you access to the data you need to make the right energy buying decisions.

3. Seek expert advice from your energy supplier to help your organisation manage cost while maintaining its momentum towards net zero.

CONCLUSION: IT PAYS TO BE SUSTAINABLE

Some organisations are finding it hard to keep up momentum towards net zero because of today's immediate cost pressures and unpredictability.

Leaders, therefore, need to recognise that their energy needs and decarbonisation goals do not have to conflict: net zero and cost efficiency still work together.

Organisations that step off the path to net zero because they think they cannot afford it are making a mistake. They risk competitive disadvantage and higher medium-to-long term costs.

Yes, staying committed to sustainability requires courage and focus because of today's tough environment. But organisations can, and must, make the case for net zero. A business case for investment in decarbonisation can give them the efficiency and predictability they crave.

THE CRUCIAL ACTIONS TO TAKE

1. Recognise that sustainability and cost reduction are not conflicting goals. Identify the decarbonisation initiatives that could save you money in the short term, including quick wins such as energy efficiency.

2. Revisit your organisation's decarbonisation strategy and ensure alignment between policy and delivery. Is it still fit for purpose when you consider the pressures of the year ahead?

3. Ask for help: draw on the support available from energy market specialists and consultants to save money with innovative energy management.

FIND OUT MORE

British Gas is one of the UK's leading business energy suppliers. Every day our experts help businesses move closer to a net zero future with energy supply options that are tailored to need and budget.

With a range of different electricity and gas supply options, we help businesses to lay the foundations for a low-carbon future – providing the right energy, at the right place, at the right price.

Find out more.

Net Zero offers a path to recovery

JUST AS BUSINESSES WERE STARTING TO REAWAKEN FROM THE IMPACTS OF THE PANDEMIC, ANOTHER SHOCK HIT. THE LAST TWO YEARS HAVE PUSHED THE GLOBAL ENERGY MARKET INTO A NEW TERRITORY OF RISK AND VOLATILITY.

At SSE Energy Solutions, we have tried to protect our customers and help them navigate this exceptional period.

While energy prices have receded closer to historic norms since the start of 2023, a wider systemic business risk remains but one that also offers businesses a path to recovery if taken seriously.

Tackling climate change is the overwhelming challenge of our time. But the opportunities open to businesses that engage in confronting this challenge also offer a path to recovery following a torrid few years.

Our driving motivation is to help more and more businesses reach their net zero goals. SSE has recently upgraded its investment plans, with a fully-funded plan to invest £18bn in low carbon infrastructure through to 2027. This is what we are describing as our Net Zero Acceleration Programme (NZAP) Plus.

This investment equates to around £10m a day and will enable the delivery of 20% of the UK's 50GW offshore wind target by 2030, and 20% of the necessary upcoming electricity networks investment in the UK to facilitate more renewable generation, heat pumps, and electric vehicles.

EMPOWERING BUSINESSES TO GO GREEN

Businesses of all sizes can make decisions now that can help them grow in a green and sustainable way.

The road to net zero is ambitious and we want to inspire people to join us on the journey. More renewable energy capacity is needed to meet demands for energy security while also keeping up with net zero carbon emissions targets.

We're committed to delivering the green energy the world needs now and in the future. Our construction and development pipeline includes 3.5GW of onshore wind, 1.5GW of pumped storage, and 8.4GW of offshore wind energy – the largest offshore development pipeline in the UK and Ireland.

We know offshore wind will be the backbone of a net zero power system. That's why we're building the 3.6GW Dogger Bank project in the North Sea, which will be the largest wind farm in the world when completed, and now producing power from the 1.1GW Seagreen project off the Scottish coast, which is the world's deepest fixed-bottom offshore wind farm.

This is in addition to the 4GW of onshore wind, offshore wind, and hydro generation that we supply to our business customers. Overall these generation-assets produce around 10TWh of renewable power each year.

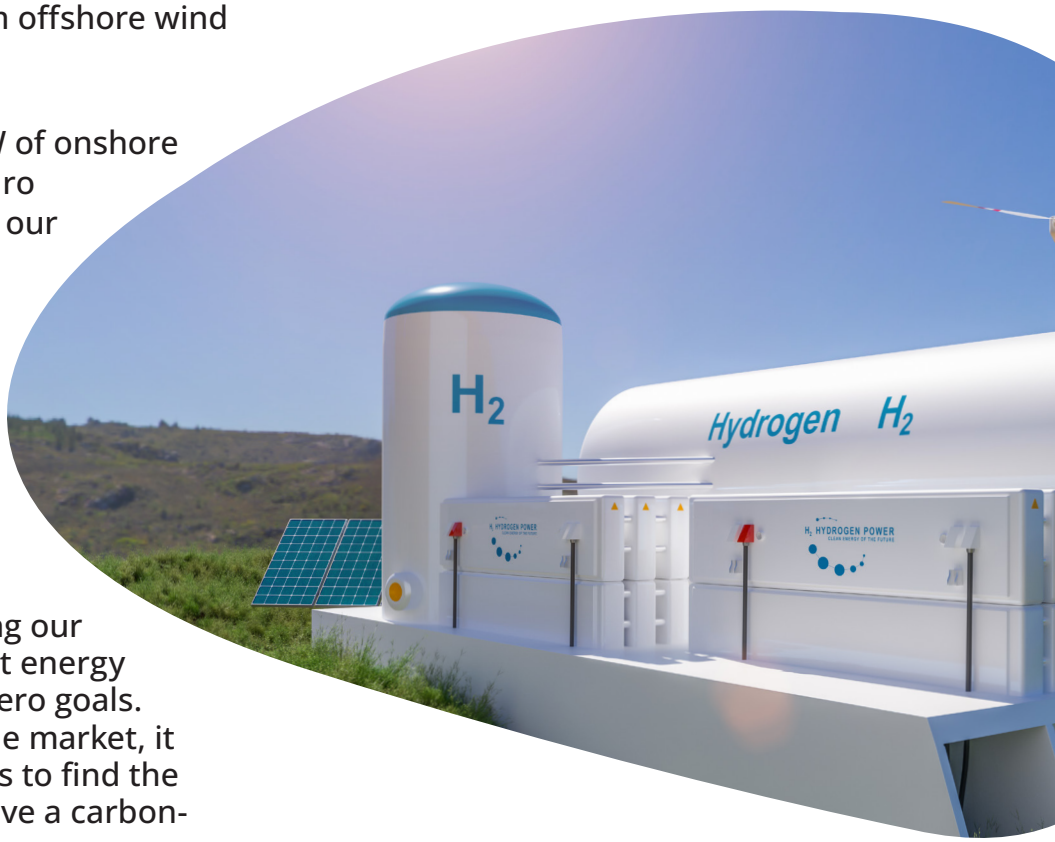
GUARANTEE OF PURCHASE

We're focused on empowering our customers to choose the best energy solutions to reach their net zero goals. With so many products on the market, it can be difficult for businesses to find the right one for them, and to have a carbon-free energy supply. SSE Energy Solutions is simplifying the process and has created a straightforward path for businesses through the SSE Corporate Power Purchase Agreement (SSE CPPA).

We want businesses to feel confident to take control of their power supply, which is why we created a simple, flexible route to access 100% renewable electricity directly from an SSE wind farm. While our renewable electricity is sourced from SSE's own UK wind and hydro generation.

With SSE CPPA, you'll continue to get your electricity through the national grid as normal, and we'll match your consumption to the agreed output from a specific SSE Group wind farm. Choice of wind farm subject to availability.

An SSE CPPA allows you to buy an agreed amount of electricity from a specific wind farm, giving you full traceability. Your tangible link with a wind farm is a compelling story to share. A CPPA directly impacts the price you pay for energy, helping your business increase budget certainty and enabling you to refine your price risk management strategy.



Historically, CPPAs have been complex to implement, limiting the number of customers who could access them. SSE's CPPA removes this complexity and makes the benefits of purchasing renewable energy through CPPAs accessible to many more businesses across the UK.

We have designed our CPPA to remove those barriers and enable a wider range of customers to purchase energy directly from one of SSE's renewable assets. And rather than you having to negotiate separate contracts, everything is managed through your existing flexible supply agreement.

THE BIG PICTURE

The Big Zero event is a brilliant showcase and gathering of businesses taking the next steps on their journey to net zero. It's encouraging to see how many greener energy solutions are available each year but almost more encouraging to see how many businesses are eager to take those next steps and show leadership as advocates for net zero.

There's almost £5bn of funding available to help UK businesses as part of the government's commitment to reach net zero emissions by 2050. The funding will be awarded to businesses investing in green technologies to increase energy efficiency or reduce carbon emissions. The list is constantly being updated as new funding becomes available, so keep an eye on the government's green funding webpage for current openings.

Scotland has ambitious targets to become net zero by 2045, five years ahead of the rest of the UK. To meet this target, the Scottish government is funding several programmes and initiatives to help businesses reduce their emissions and transition to net zero.

However, all targets and goals will only be made possible if businesses both big and small pull in the same direction to make it possible. Now it's up to all of us to set our own green targets and achieve them.

Find out more.

drax

2023

Why Carbon Removals are an essential component in sustainability strategies

Net zero targets need direct action and diverse solutions. Here's why carbon dioxide removals need to be in the action plan for your organisation's Environmental, Social and Governance (ESG) goals.

In 2022, total global greenhouse gas (GHG) emissions reached 58 billion tonnes. That's the highest annual level ever recorded.

Assuming that current economic growth, population growth, and emissions intensity trends carry on along their current trajectories, emissions will continue to grow. It's estimated that by 2030, they'll hit 62 billion tonnes a year.

We've managed to slow down the rate at which emissions are growing. But we're nowhere near reaching the Paris Agreement goals. And there's still no credible pathway in sight to keeping temperature increases down to 1.5°C. Researchers say there's now a 66% chance we'll pass this 1.5°C global warming threshold between now and 2027.

But it's not too late to take action.

We're committed to taking positive action to reduce emissions worldwide. At Drax, we're taking this one step further by adopting Bioenergy with Carbon Capture and Storage (BECCS) technology to remove emissions.

Your organisation's sustainability strategy needs more than one method to remove hard-to-abate emissions. But for forward-thinking businesses, Carbon Dioxide Removals (CDRs) are a way of proactively contributing towards our planet's progress.

Let us explain why.

The Intergovernmental Panel on Climate Change (IPCC) have been clear that the need for carbon dioxide removals are essential. Simply reducing carbon emissions isn't enough – we also have to deploy CDR technology.

TO ACHIEVE A POSITIVE OUTCOME FOR THE CLIMATE, 10 BILLION TONNES OF CO2 NEED TO BE CAPTURED BY NEGATIVE EMISSIONS TECHNOLOGY EVERY YEAR BETWEEN NOW AND 2050.

At Drax, we've invested hundreds of millions of pounds, and years of energy, passion and expertise, to develop BECCS.

BECCS is currently the only carbon capture and storage technology that also generates renewable electricity. It removes carbon dioxide from the biosphere, and locks it away safely and permanently, in natural geological formations, for tens of thousands of years.

Most importantly, for organisations looking to net their emissions, we're able to pass on high standard, high-quality carbon removals. CDRs from BECCS are measurable, sustainable, and permanent, with a very low risk of reversal.

Some of the world's largest companies have already switched on to the value BECCS provides, with landmark deals from companies such as Respira and Microsoft. We hope this will continue to stimulate the market.

It's an incredible tool. And it's one of many that we need to build a brighter future for our future generations. Because to succeed, we need to bring together every possible approach to play its part in our shared mission.

Alongside developing CDR technology, we must take action to reduce and avoid all the emissions we can.

A good ESG strategy will include:

1. Committing to long-term net-zero strategies, including high quality carbon removals. This'll involve reducing all the emissions that we produce ourselves or that come from our own energy use (Scope 1 and 2). We need to do what we can to decarbonise – buying renewable power through Corporate Power Purchase Agreements (CPPAs), installing solar PV, wind turbines or batteries and electrifying our fleets.

2. Cleaning up our own entire supply or value chains. We need to set suppliers and partners science-based targets (or encourage them to set them for themselves) to reduce all the emissions they can (Scope 3). We need to use our leverage to ensure that they commit just as our own organisations have.

The Science Based Target initiative (SBTi) corporate net-zero standard outlines the dimensions of a net-zero emissions pathway for those companies that establish long-term targets ,aligned with a global warming scenario of 1.5°C.

This focuses on reducing value chain (Scope 1, 2 and 3) emissions by at least 90% to residual levels (maximum of 10% of baseline emissions) by 2050 or sooner. We need to adopt those standards ourselves and ensure that our partners and suppliers do too.

3. Alongside these, we need to add carbon removals to reduce the final emissions that are unavoidable and help pay off our carbon debt.

There are four things to consider in your early carbon removals research:

- The longevity of the carbon removal – is it stored temporarily, or permanently?
- The sustainability of the technology that produces it
- The quantification (is it measured and accurate?)
- Whether it has additionality – that is, does it provide additional benefit to the climate that wouldn't have occurred otherwise?

ACTING NOW IS AN INVESTMENT IN OUR FUTURE

The most optimistic projections say that demand for carbon dioxide removals will exceed supply in the market by 2030. Some estimates put the demand for CDRs to outstrip supply by approximately 3.5x by 2030.

Forward-thinking businesses are locking in carbon removals now. This doesn't just secure their needs – it helps to stimulate

the market by supporting a technology that needs to be quickly scaled up to meet our collective goals.

HOW WE PLAN TO BECOME A CARBON NEGATIVE COMPANY, AND HELP OTHERS DO THE SAME

At Drax, we've comitted to becoming carbon negative by 2030. By 2030, we aim to have converted two of our units at Drax Power Station to run with BECCS, which will remove eight million tonnes of CO2 in the UK year on year.

This alone would deliver over 15% of the carbon removals the UK requires to achieve net zero by 2050, according to figures provided by the CCC in their 2019 Net Zero Report.

With the right government engagement, we plan to invest billions over the coming years in carbon removals and renewable energy projects. We aim to capture 12 million metric tonnes a year of carbon removals by 2030 globally and to be a global leader in carbon removal projects.

Or ambition of becoming carbon negative by 2030 means we're always working to reduce our supply chain emissions as far as possible. And we'll use carbon removals delivered through BECCS to neutralise our remaining emissions.

Many other organisations will have committed to achieving carbon neutrality by around the same date. By that time, they'll already have reduced all the emissions they can themselves. They'll also have encouraged their partners to reduce their emissions too. But in order to achieve net neutrality, they will also have to remove their hard-to-abate emissions.

Organisations that want to do that by 2030 will have to start thinking about how they do it much earlier than that. Businesses and other institutions are well placed to play a role in helping this sector grow, but we need to start now to ensure that it has reached maturity by 2030. Which means the time to act is now.

Drax can help you navigate the road to a more sustainable future, reduce carbon emissions and support your commercial goals too.

Explore more at [energy.drax.com.](energy.drax.com)

Be future positive

Many businesses and organisations are looking to the future. And how to power that future sustainably. At Drax, we have a range of unique products and services to help you meet both your commercial goals and your sustainability goals.

Because we believe in a future where reducing emissions and managing costs isn't an 'either or', but a 'both'.

Discover the power of a great partnership.
Search 'Drax. Be future positive'

drax

Prioritising Net Zero during the energy crisis

With the impact of spiralling energy prices still being felt across all industries, it is understandable that some businesses may feel their decarbonisation efforts have been forced to take a back seat.

In fact, a survey of energy and sustainability managers at 148 organisations, conducted by Edie, found that one-fifth are having to de-prioritise work related to the net-zero transition due to the current crisis.

But it's important that we don't let this veer us away from reaching Net Zero. Perhaps such disruption creates an opportunity for businesses to invest in energy solutions that will make them resilient to volatile markets in future.

Working towards Net Zero is not an easy task, but the results will provide a long-term solution to the problems we are seeing today. So, how can businesses stay on track to achieve Net Zero during the energy crisis?

UNDERSTAND YOUR ENERGY CONSUMPTION

Understanding exactly where and when your business is consuming energy is vital to stay on track for Net Zero. After all, if you can't measure it, you can't improve it. And if you don't know how much you're spending on energy, or how that energy is being used, how can you be sure that you have the right solution for your business?

Using solutions such as smart metering and sub-metering is key to having a clear view of your energy needs and consumption patterns, which in turn allows you to identify trends and areas for reduction.

Reducing your energy consumption will not only lower your carbon footprint and support your Net Zero goals but also unlock opportunities for sustained cost savings - a welcome benefit in today's challenging economic climate.

FOCUSING ON IMPROVING ENERGY EFFICIENCY

While a long-term goal may be for businesses to take energy consumption into their own hands by investing in renewables, this may not be possible as an immediate action and, in the interim, an energy efficiency approach is a more achievable option.

By implementing small changes today, such as switching to LED bulbs and lighting controls, businesses can start to decarbonise and reduce energy bills from the get-go.

With the new government support scheme (EBDS) for businesses considerably lower than the previous scheme, there is a sense of urgency around cutting energy bills to alleviate cash flow issues and becoming more energy efficient. Therefore, accelerating net-zero ambitions should be a priority for all right now.

ENGAGING AND EDUCATING EMPLOYEES

Regularly engaging employees and taking the time to educate them on how to become more energy efficient is also a cost-effective way of helping to achieve energy efficiency goals. You would be surprised what a vast difference small steps like boiling less water, unplugging laptops, and turning lights off in the office when not in use can make.

What's more, having a plan in place to improve energy efficiency will improve your credentials as a potential employer and help you attract environmentally conscious talent.

FIRST STEPS TO KICK-STARTING CHANGE

Before the energy crisis, many businesses didn't feel ready to navigate the transition to renewable energy and therefore didn't make it a priority. But perhaps the volatility caused by the energy crisis will serve as a wake-up call for businesses to start getting to grips with their plans for decarbonisation.

Achieving Net Zero is by no means a one size fits all approach, but for many businesses, a simple first step to take is to understand your existing carbon footprint. Whilst carbon footprint reporting is a relatively new field, it has already become important for businesses to calculate their carbon footprint and understand where their emissions come from.

This enables businesses to kick-start their Net Zero journey by reporting their carbon impact and developing and implementing carbon reduction and removal measures.

CHOOSING ZERO CARBON SUPPLY

Another relatively straightforward change that quickly improves your sustainability credentials is to move to a zero carbon energy or renewable supply tariff, such as EDF's Zero Carbon for Business or Renewable supply options. These options would see your energy supply made up of several different zero carbon sources, backed by a mix of nuclear and renewables. This is evidenced by certificates known as Generation Declarations (for nuclear) and REGOs (for renewables).

Choosing zero carbon supply not only supports your Net Zero ambitions but also offers a sound sustainability message to your customers, suppliers, and investors as it enables you to report zero market-based emissions under the GHG Protocol Scope 2 reporting guidelines.

Should you choose to power your business through 100% renewable electricity, there are a variety of options available, ranging in specificity. From powering your business through any form of REGO-backed supply, to options that offer the ability to specify a particular source, such as wind or solar power. You can even choose a contract that links you to a specific, named renewable generation asset, which allows traceability and gives you an even stronger sustainability message for your investors and suppliers.

THE CASE FOR ON-SITE RENEWABLES

Research shows businesses could save as much as 60% on their energy bills by using the right mix of improved energy efficiency and onsite renewables. With the rising price of energy, the business case for on-site renewables has never been so compelling.

Rather than signing an agreement to buy power from elsewhere, your business could install renewable generation on-site, such as solar panels on top of a roof or on unused land. This option is a great way of reducing energy bills, removing third-party delivery costs, and brings new renewable generation to the grid; once again creating a great sustainability story for your customers, suppliers, and investors.

While many net-zero solutions, such as installing solar PV onsite, can require

substantial Capex upfront, there are finance options available such as grants or EDFR fund projects to help with the cost of installation. Investing in decentralised opportunities, like onsite generation, will not only provide significant cost savings for businesses in years to come, but can also increase resilience, as you reduce your dependence on the grid and are protected from market price volatility.

CONSIDER A CORPORATE PPA (CPPA)

For larger energy consumers who can make a longer-term commitment, a Corporate PPA (CPPA) could be an interesting option. When you start to look at CPPAs, things start to get more complicated, but you're also making a significant difference to the energy grid and decarbonisation.

A CPPA is a direct contractual agreement between a business and a renewable energy generator, to build a new renewable asset. With a CPPA, you would usually agree to pay a fixed price for all the generation from that asset over a 10–15-year term, providing long-term cost certainty.

This then enables the generator to bring that new renewable asset onto the grid. Your power would still come via the grid (there's no physical connection), but you are contracting with a named generator, enabling you to say that your energy is coming from a specific source.

This creates a strong sustainability message and is a true commitment to Net Zero, as without your contractual agreement, that renewable power wouldn't have come onto the grid. The challenge with a CPPA is the complexity, as they are much more intricate when it comes to setting them up and the ongoing management, so you need the resources to make it work; that's where an experienced and trusted partner is imperative.

CAN YOU REALLY PROTECT BOTH PLANET AND PROFIT?

It's important to think of Net Zero as an investment, not a cost. Getting the right return on investment can take time. Still, it is evident that early adopters of solar installations are reaping the future-proofing rewards for their business, especially amid rising gas and electricity prices.

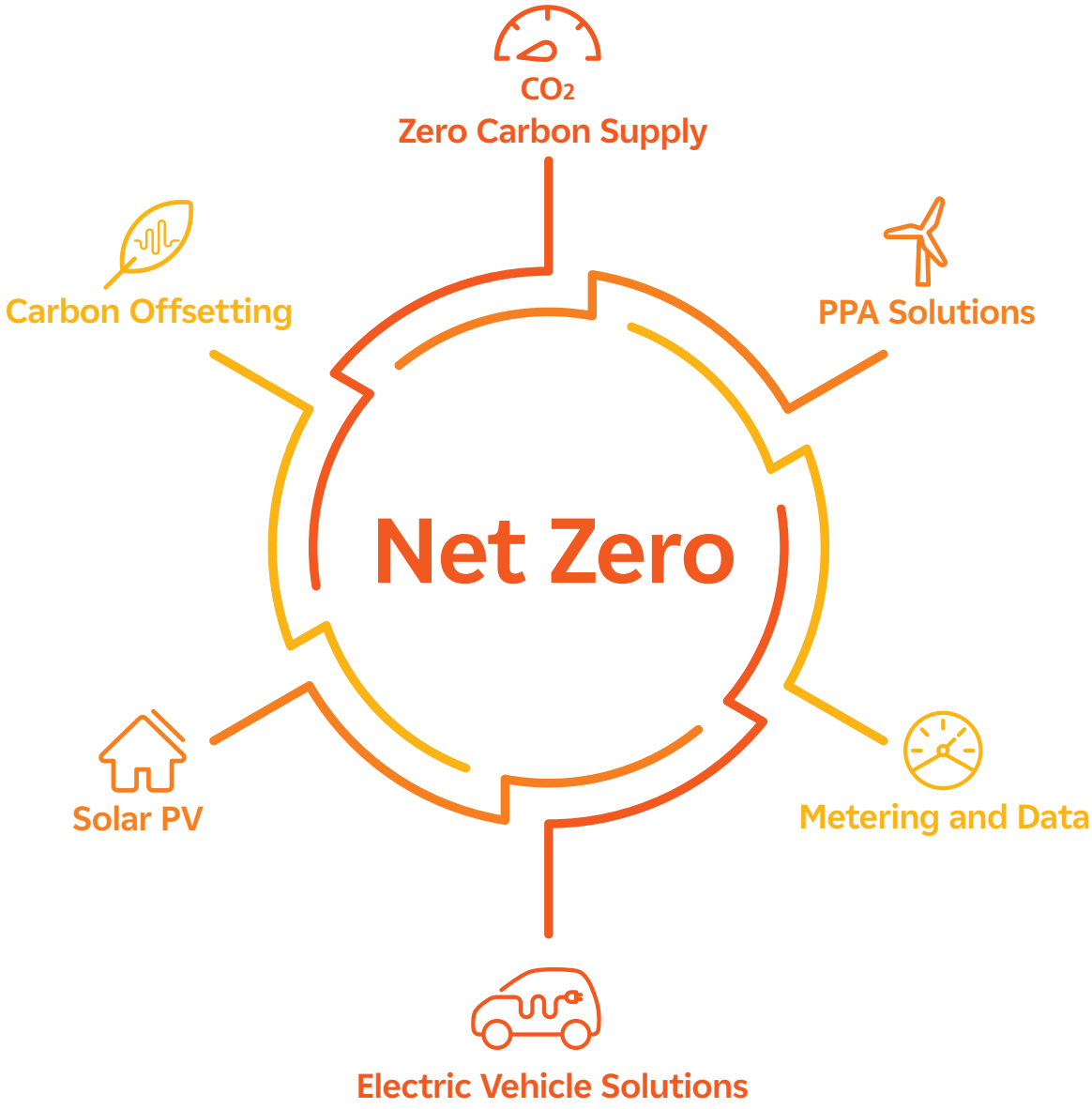
Return on investment can also appear sooner in other forms. A business that takes decarbonisation seriously is more likely to attract and retain sustainability-minded customers, with those who are slow on the uptake of net-zero initiatives running the risk of being left behind.

Decarbonisation is fast becoming the new normal and is expected by shareholders, customers, and employees. Therefore, businesses that want to be resilient in the future need to accelerate their Net Zero ambitions now, before they are forced into it by regulation. The world is changing rapidly, and businesses need to move with it if they wish to succeed.

Find out more.

Helping Britain's Businesses and Public Sector achieve Net Zero

By continuously investing in and enabling access to zero carbon energy and technology, we are here to support you on your journey to Net Zero.



Find out more: **edfenergy.com/large-business**
Get in touch: **Letstalkpower@edfenergy.com**
Stay informed: **Follow EDF Business Solutions**

nationalgrid

2023

Electrifying our region

The past 18 months has shone a light on the importance of the green energy transition. While the decarbonisation journey has been firmly in the public consciousness since the UK legally committed to Net Zero back in 2019, the war in Ukraine and the pressures on global energy supplies have made the importance of moving towards a decarbonised, secure energy supply, even clearer.

The scale of the energy transition required to achieve this is unprecedented. In the UK, we need to rewire the country five times over. This isn't something DNOs, or any other part of the energy system, can do alone and we are going to have to collaborate and innovate like never before.

It is well acknowledged that as part of the future energy mix, electrification will play an even greater role in achieving the ambitious climate targets that the government, councils and businesses have set.

Net Zero will mean the increased electrification of our normal day to day lives. Whether it is traveling on an electric bus, heating their home with a heat pump or having their homes powered by solar panels, the average person will have much more interaction with, and dependence on,

the electricity system than they currently do.

Over the next five years, we will creating and unlocking capacity in our network to connect an additional 1.5 million electric vehicles and over 600,000 heat pumps across the region. Our role as the electricity distribution network operator for the Midlands, South West and South Wales is to facilitate the Net Zero future and get the electricity network in a place where mass electrification is a reality.

Throughout the next price control period to 2028, National Grid will be working to deliver Net Zero at pace and ensure that our customers can connect the low-carbon technologies they require to decarbonise, while continuing to provide a high quality, industry leading service. To achieve this, we are investing £6bn across our network up to 2028, with just under £2bn of that being spent in the West Midlands, strengthening, and developing the network within towns and cities such as Coventry.

But at National Grid we are not coming into this from a 'standing start'. Over the past eight years, as a company we have spent nearly £6bn across our network in order to prepare for the future. As a result of this investment, our physical network of cables grew by 6,467km to 220,000 km and we connected over 1.7GW of renewable generation, 77,000 EV chargers and 25,000 heat pumps during this period.

In 2022, we signed up 777MW of flexibility, helping create a smarter network without the need for standard time-consuming network reinforcements. Over the past two years we have connected more low carbon technologies to our network that in all previous years combined.

The recent increase in low carbon technologies across our network is not just down to increased capital expenditure on our network infrastructure, but also due to changes to our connections process which is making network connections more efficient.

We have introduced a new self-serve connections tool which allows domestic customers to make an application for domestic low-carbon technology installation and receive an instant response. We have also introduced a new streamlined system for processing and completing domestic connections for the installation of low-carbon technologies. This means that connection requests for a new EV charger or a heat pump will be approved on the same or next day in the majority of cases. If we are going to get consumers on board with the Net Zero journey, we need to ensure that there are as few barriers in their way and that the process is as smooth as possible.

Innovation has always been a key part of our industry and if we are to tackle the challenges that we need to face over the coming years, it needs to play an even greater role than ever.

National Grid's innovation team is industry leading and has delivered 69 varied innovation projects over the past ten years which have helped develop EV charging solutions, flexibility offerings and network monitoring tools which will all help strengthen and decarbonise our network while saving customers money.

One such example is Take Charge, a project that is making rapid charging at motorway service stations quicker and easier for both service station operators and customers. Together with BRUSH and Moto, our engineers have developed a brand new, pre-constructed and pre-packaged 'plug and play' solution, that provides motorway service station sites with the electrical capacity comparable to a small town.

The project means that up to 80 rapid chargers can now be installed on site. The technology behind Take Charge has the potential to not only accelerate decarbonisation of motorway service stations, but also reduce the emissions from UK ports, airports and other locations where significant decarbonisation demands will be seen. Take Charge is an example of how as a company we are keen to work in partnership with other companies, local authorities and academic institutions to create solutions to some of the tricker decarbonisation challenges.

Another such area where collaboration is key is data sharing. We are using our network data to deliver a more efficient and resilient experience. By taking a 'data first' mindset, we are working together with all parts of the energy system to collaborate on the sharing of energy data which will mean better planning of the UK energy system, the empowerment of local communities and overall, help accelerate Net Zero

It is an exciting time for National Grid as we will play a key role in 'rewiring Britain' and decarbonising all sections of the economy by electrifying the homes, businesses and transport within the towns and cities we serve. But as I have outlined, we cannot do this alone. We need to come together as an industry and work in partnership with government, local authorities, and businesses if we are to achieve a greener, secure energy system.

Find out more.

Why collaboration is key to helping major energy users decarbonise their operations

Decarbonising operations continues to dominate the conversation for major energy users, with net-zero ambitions now widely considered a key corporate focus alongside competitively meeting production demands. In this article, Ulf Nahrath, Shell's VP of UK Energy Transition and Infrastructure, discusses the possible options available, the benefits of adoption and the pressing need for collaboration.

THE UK ENERGY SYSTEM

It's safe to say that market volatility experienced over the past two years, combined with accelerating policy and commercial drivers to achieve net-zero, has resulted in businesses putting more focus than ever before on energy – from cost and consumption, to efficiency, decarbonisation and security of supply.

The UK's energy system needs to embrace net zero by 2050 in ways that balance cost, reliability and broader economic benefits. This transition will see demand for electricity grow, while oil and gas are set to decline and hydrogen will become part of our energy mix. Wind will play a major role in servicing growth in demand for electricity, along with solar and nuclear. Gas use will be reduced from today's levels, but will be further decarbonised and looks set to play an important role in both supporting power generation (enabling volatile renewables to grow), blue hydrogen production and use in industry. The use of (abated) gas in heating buildings will depend on technical and economic developments and the success of the electrification of heat by heat pump deployment.

This transition will see demand for electricity in the UK change dramatically in the future, especially when it comes to electricity supply. Currently, even though the National Grid is committed to investing in infrastructure, supply constraints will be a factor, especially in winter. Electricity has always been more expensive than gas, so it's possible that costs will rise too.

Currently, energy consumption in the UK is split around 50/50 between industry, transportation and public buildings, and consumer demand. However, consumer energy demand is set to increase significantly in the coming years – an important consideration for businesses, given the impact that it will likely have on the overall electricity demand and grid distribution landscape.

COLLABORATION IS KEY

Those industries with the highest carbon emissions, such as chemicals, iron and steel, food and drink, cement and manufacturing are already exploring their options. Some changes can be made quickly, but others will require close collaboration between both internal and external stakeholders.

From policymakers and investors, to planning authorities, the transmission and distribution network operators, equipment suppliers, supply chain partners and indeed energy suppliers, this is no small task. Conversations need to start early to ensure timely delivery of changes.

RISKS AND OPPORTUNITIES

Most businesses report that they have made significant progress in addressing Scope 1 emissions because they have direct control over emissions from their own activities. We have also seen an increase in the number of companies ensuring they are procuring renewable energy to meet Scope 2 goals. However, the hardest challenge is Scope 3 – in essence, the emissions that a company is indirectly responsible for up and down the supply chain. These require monitoring emissions from both suppliers and customers and is proving more difficult.

THE ROLES OF ELECTRIFICATION AND HYDROGEN

Many pathways for decarbonisation include electrification. A simple yet proven approach, replacing gas, oil or coal with renewable electricity that can prove an important step to cutting carbon. However, while offering the simplicity of using a single carrier, it's important to consider whether the grid offers sufficient local capacity for energy intensive operations, as well as the cost implications of both initial investment and ongoing cost. After all, electricity has historically been 2.5 times more expensive than gas in the UK and its distribution cost to customers even more so.

Private wire options, such as on-site renewables (solar, wind, battery storage, etc.), can effectively navigate this

barrier, but having sufficient space to house assets and the capital required to invest is critical to success.

We are also seeing significant investment in hydrogen. There are two approaches to producing hydrogen: blue hydrogen (produced by splitting natural gas into hydrogen and carbon dioxide) and green hydrogen (produced by splitting water via electrolysis into hydrogen and oxygen). Green hydrogen requires a large energy input from a renewable source and blue hydrogen requires carbon capture infrastructure making use of large carbon stores in the North Sea. The UK government's aim is to have 10 GW blue and green Hydrogen production capacity installed by 2030.

The application and operation of hydrogen is similar to natural gas, but with the added benefit of lower carbon intensity. This said, any business must consider its own readiness and viability. For example, plant equipment like turbines or boilers must be converted to be fully compatible to use hydrogen as an input fuel, while you'll also need direct access to a hydrogen pipeline and possible subsidies or Contracts for Difference.

The reality is that the infrastructure for hydrogen is not yet readily available, but there are plans in the UK and Europe to create a hydrogen distribution network with a backbone of supply running down the East of the UK to service key industrial clusters, as well as another backbone for Netherlands, Belgium and Germany. As such, gas turbine manufacturers are already making equipment that is hydrogen ready. Innovation and ideas from equipment suppliers can help businesses to understand the options they have when making capital investments – both now and in the future.

GAS AND CARBON CAPTURE AND STORAGE (CCS)

Where gas is still used as we transition, then CCS offers an attractive decarbonisation option for major energy users. The process sees CO2 captured and separated from flue gas, before being treated, processed, transported and injected deep underground, such as in depleted oil and gas reservoirs or aquifers in the North Sea, where it can be safely stored.

The opportunity for industrial offtakers is significant. What's more, there is little change needed for plant equipment (just

amendments to flue processes). This said, however, businesses should be aware that impact and value is based on scale, while good carbon transportation links are essential.

SECURING THE FUTURE

It's no longer an 'if' but a 'when' for major energy users to decarbonise their operations. Driving widespread energy efficiency across your business should be an immediate first step, while clear consideration should be given to testing the feasibility of initiatives such as electrification, hydrogen and CCS.

There is no silver bullet or 'one size fits all' approach for major energy users. Different solutions will apply to different businesses, depending on their exact energy requirements. No sector will be able to solve it alone. Truly effective solutions mean working with suppliers. It will require unprecedented collaboration to deliver change at the pace needed.

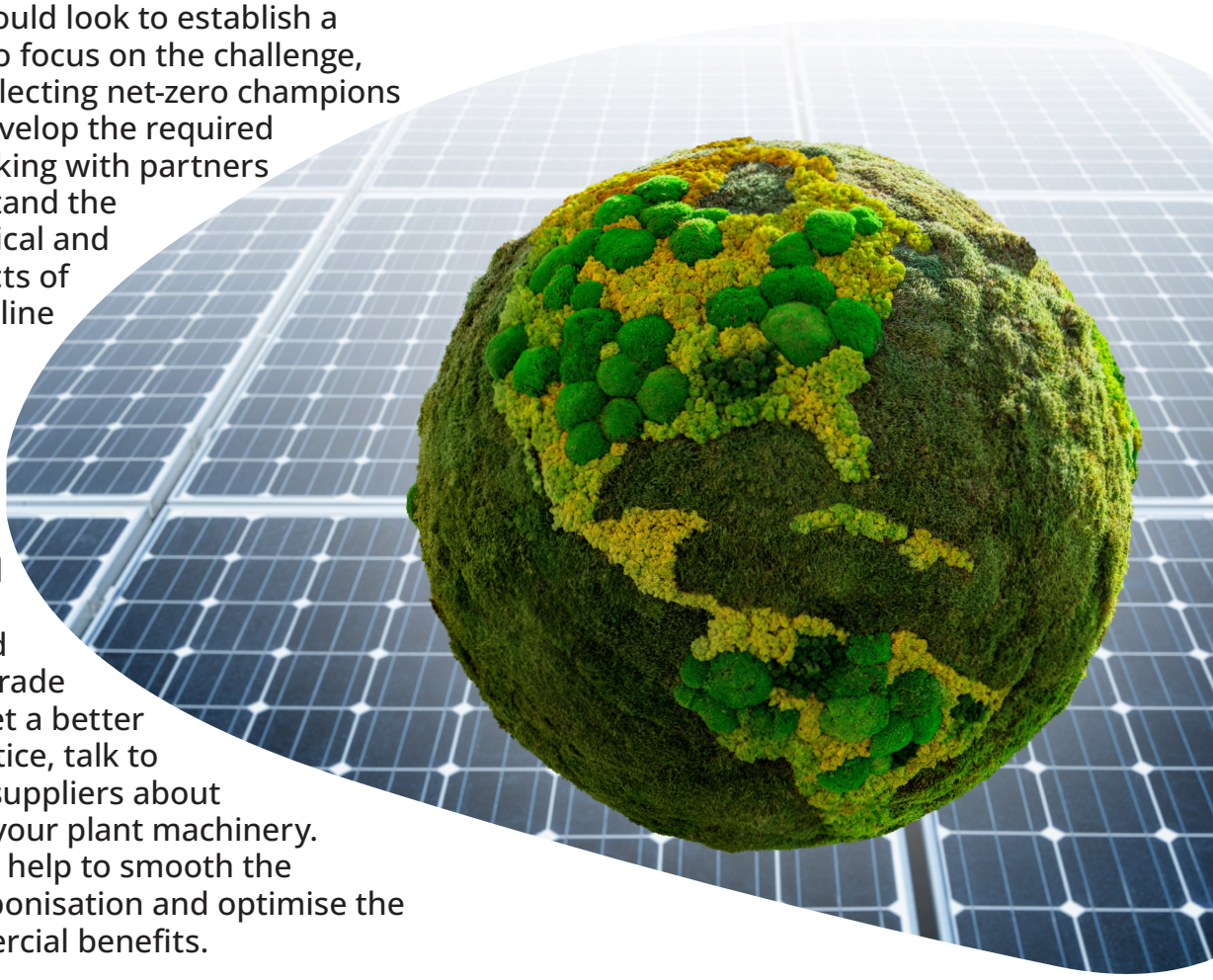
Organisations should look to establish a dedicated team to focus on the challenge, whether that's selecting net-zero champions from within to develop the required expertise, or working with partners who fully understand the regulatory, technical and investment aspects of transition. A baseline understanding of your carbon emissions, equipment and cost will help to create the roadmap that will take you through the next 5, 10 and 15 years. Talk to trade associations to get a better view of best practice, talk to your equipment suppliers about the suitability of your plant machinery. Collaboration will help to smooth the journey to decarbonisation and optimise the long-term commercial benefits.

HOW CAN SHELL ENERGY HELP?

Partnering with businesses to help them manage their energy costs and meet decarbonisation goals is a priority for Shell Energy. We listen to major energy users, and we consult with them daily about the issues they face. We know that the unpredictability of energy prices has accelerated their desire to have far more control, and we believe that a proactive approach is key.

Working with more than one million businesses in upwards of 60 countries, we are perfectly placed to support major energy users in their journey to net-zero. To find out more about Shell Energy and its affordable, cleaner, simpler renewable energy solutions, visit www.shellenergy.co.uk/business.

View Shell Energy's online content disclaimer.



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Coventry City Council

2023

Coventry City Council: The Net Zero Journey

Coventry City Council is embarking on its journey towards net zero, having recently published a draft Climate Change Strategy, setting the foundations for creating a sustainable zero carbon city. The strategy, alongside a range of projects proposed and already underway, will aim to secure a sustainable future for all who live, work and visit the city.

The journey started some time ago; as far back as 2008, the Council was a founding signatory of the Covenant of Mayors for Climate and Energy. Since then, the Council, working alongside partners, has introduced the One Coventry Plan, committing 'Tackling the Causes and Consequences of Climate Change' as one of three key priorities. The Council has also established an Independent Climate Change Board. This board brings together key partners and organisations from across the city, uniting efforts to tackle the causes and consequences of climate change.

TRANSPORT

To decarbonise its transportation system, Coventry is striving to become the first all-electric bus city in the UK by 2025. This ambitious initiative will reduce carbon emissions and pave the way for a cleaner and more sustainable public transport system. Additionally, the city is developing a pioneering Very Light Rail system, which has the potential to revolutionise public transportation both within the UK and on a global scale. The vehicle is battery-powered, eliminating the need for overhead wires. It has an innovative turning system allowing it to handle 15m radius curves, meaning it can be installed in tight corners in the existing

Editorial credit: Matthew Stone / Shutterstock.com

highway. The Council intends to operate it at a high frequency to provide a turn-up-and go service. The new track is laid just 30cm within the road surface, minimising the need to relocate pipes and cables, which is time-consuming and expensive.

Coventry City Council is also expanding its cycle.

BUILDINGS

Recognising the importance of energy-efficient homes, Coventry and Citizen Housing have partnered to secure funding through the Social Housing Decarbonisation Fund to improve the energy efficiency of over 2,000 social homes across the city. This initiative benefits the environment and helps disadvantaged families and residents by reducing energy bills. Furthermore, the Council has made significant progress in decarbonising civic buildings, including offices, libraries, and schools. This includes switching to renewable energy or other sources of energy which are less harmful to the environment. A total of 2.1 MWp of rooftop solar has been installed across 41 public buildings owned by the Council.

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STRATEGIC ENERGY PARTNER

Coventry City Council understands that achieving net zero requires long-term commitment and substantial investment. To accelerate their efforts, they are in the process of procuring a Strategic Energy Partner. This partnership will bring much-needed investment and provide expertise and resources to deliver projects that will drive further decarbonisation across the city, benefiting local communities and businesses alike. What's more, having a plan in place to improve energy efficiency will improve your credentials as a potential employer and help you attract environmentally conscious talent.

NATURE BASED PROJECTS

In addition to its focus on transportation and buildings, Coventry City Council recognises the importance of nurturing the natural environment. They have launched an urban tree strategy with an ambitious plan to plant 360,000 trees over the next decade. This initiative will enhance the city's beauty and contribute to carbon sequestration and biodiversity. Coventry is also actively working on improving the natural environment through projects like the Sherbourne Valley initiative.

BUSINESS SUPPORT:CW GREEN BUSINESS PROGRAMME

Another remarkable endeavor undertaken by Coventry City Council is the Green Business Programme. This programme, partly funded by the European Regional Development Fund, is a collaborative effort between Coventry City Council, Coventry University, and Coventry University Enterprises Ltd.

Since its inception in 2016, the Green Business Programme has made significant strides towards promoting sustainability and supporting local businesses. The team proudly reports that £2.5 million in grants have been awarded to 250 small to medium-sized enterprises (SMEs), enabling them to implement environmentally friendly practices and technologies. These investments have resulted in over 14,000 tonnes of CO2 savings, making a tangible impact in reducing greenhouse gas emissions.

The Green Business Network, an integral component of the programme, has also witnessed substantial growth, with over 2,500 organisations joining forces to foster collaboration, knowledge-sharing, and collective action toward sustainability. This network serves as a platform for businesses to exchange ideas, access resources, and further enhance their commitment to environmental responsibility.

By providing financial support, expertise, and a collaborative network, this initiative has not only contributed to the reduction of carbon emissions but has also bolstered the local economy and strengthened the region's position as a hub for sustainable business practices.

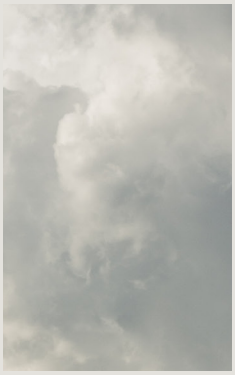
CLIMATE CHANGE STRATEGY

At the beginning of this year, Coventry City Council also launched the draft Climate Change Strategy for Coventry, which sets out the foundations for creating a sustainable zero carbon city. The strategy seamlessly supports the delivery of the city's One Coventry Plan, which includes 'Tackling the Causes and Consequences of Climate Change' as one of its three key priorities. The strategy aims to protect the most vulnerable, mitigate the impact of climate change and will help build resilience across the city, while also maximising the economic benefits of the green industrial revolution through new employment opportunities.

CONCLUSION

The net zero journeys undertaken by Coventry City Council is a testament to their dedication, foresight, and inclusivity. By tackling the climate crisis from all possible fronts, they lead the way toward a more sustainable and prosperous future. As they continue their journey towards net zero, involving key partners, investing in innovative projects, and engaging the community, Coventry is on track to cross the final line and emerge as a shining example of a net zero city.

future net zero



Change is coming

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FNZ Learning

FNZ learning is a revolutionary simple education platform. It explains what net zero is, how it works and the areas of your business that it affects. A vital learning tool for any organisation.

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- Learner and manager analytics
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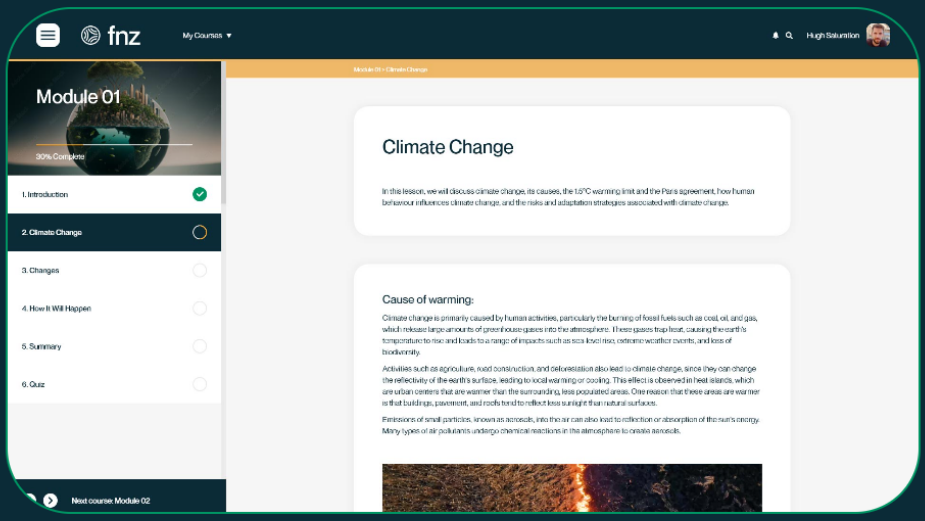
Find Out More



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