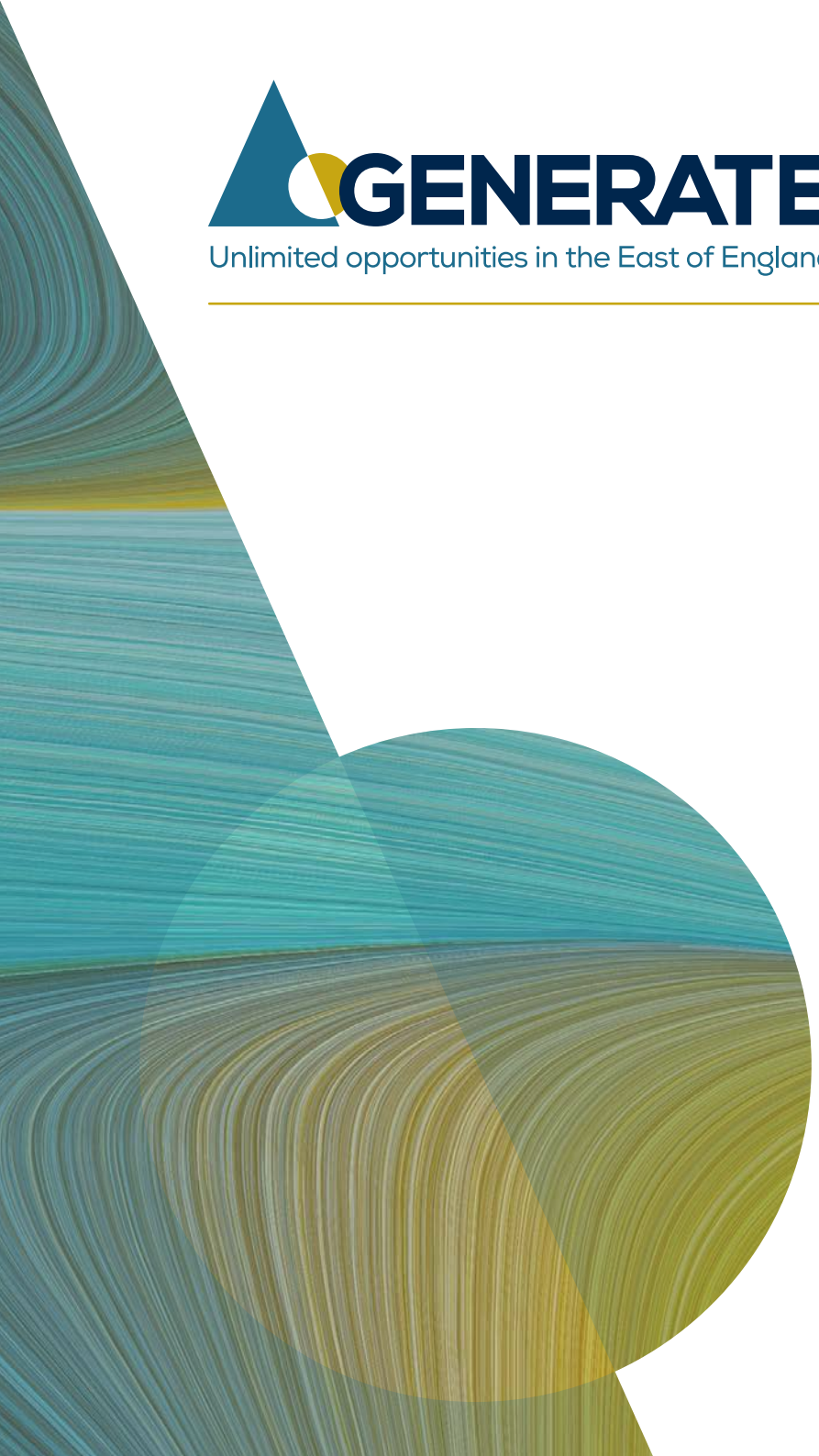
GENERATE

Unlimited opportunities in the East of England



THE **ENERGY** PROSPECTUS

Investment opportunities in the clean growth region

LET'S GENERATE THE FUTURE OF CLEAN GROWTH TOGETHER

The world is at a tipping point for climate change. Atmospheric CO_2 levels continue to rise, increasing the risk of extreme weather events and other environmental disasters that threaten lives and livelihoods. That is why the UK government has recently announced even tougher targets for reducing our carbon emissions by 2035 in our effort to reach Net Zero by 2050.

I am therefore delighted to introduce the new GENERATE brand for the East of England. This prospectus sets out our ambitions to be the UK's clean growth region. It highlights how the region can support industry and the development of new technologies, including making our power supplies cleaner, more sustainable, secure and resilient.

We have an amazing opportunity in the UK to make renewable energy the bedrock of our power supply. The GENERATE region is blessed with coastal waters that offer some of the best conditions in the world for offshore wind installations, and a rural landscape ideal for solar power and bioenergy generation.

We also have the high skilled workforce needed to develop new integrated energy systems and more energy efficient homes, offices and workplaces.

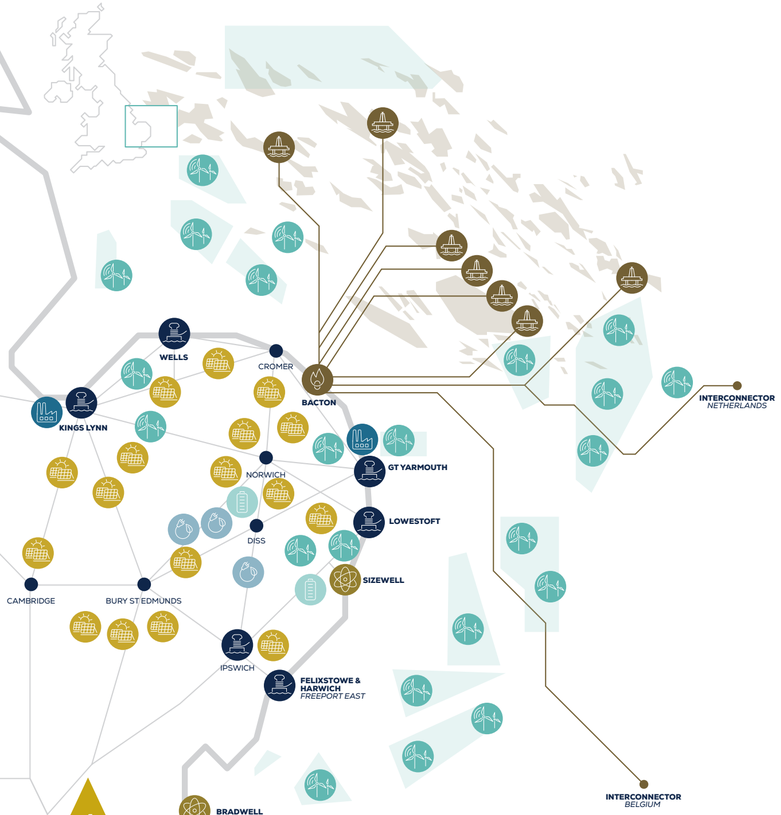
Here in Norfolk and Suffolk you will find world leading research and development centres in life sciences, engineering, advanced technologies, and low carbon energy generation, storage and usage. The business community is highly supportive, with industry bodies such as the East of England Energy Group (EEEGR) providing industry expertise and encouraging cross-sector collaboration. With outstanding universities, ambitious schools and colleges, innovation hubs, and an enviable quality of life, the GENERATE region offers ambitious people in the energy industry a great place to live and work.

Read on to discover how this integrated clean energy ecosystem can generate opportunities for your business.

MARK GOODALL

Chair, Norfolk and Suffolk All Energy Industry Council

CONTENTS



YOUR GENERATOR FOR CLEAN GROWTH

Welcome to Norfolk and Suffolk.
We are the UK's clean growth region, leading the nation's transition to Net Zero. Our vision is to develop integrated clean energy generation that supports the Government's Ten Point Plan for a Green Industrial Revolution.

£138 BILLION

LOW CARBON & ENERGY PROJECTS IN REGION BY 2050*

BATTERY STORAGE

BIOENERGY

GAS FIELD

GAS TERMINAL

GAS FIRED POWER STATION

NUCLEAR POWER STATION

PORT

SOLAR FARM

WIND FARM

INTRODUCTION

Our dynamic and collaborative energy ecosystem is helping to attract international investment in the onshore and offshore renewables sector. That will generate an estimated £138 billion of capital investment in low carbon power generation and related projects in our region by 2050. This makes it an ideal base for forward-thinking businesses developing clean energy technology or serving the low-carbon energy industry.

We have been fuelling the move to cleaner power generation for 60 years, since work started in April 1961 on the Sizewell A nuclear power station (followed in 1995 by Sizewell B, the most modern reactor in the UK). The first onshore terminal for natural gas from the Southern North Sea then opened in 1968 on the Norfolk coast at Bacton, which still handles 30% of the UK's gas supply. This helped drive the transition away from coal, which led to a 20% fall in the UK's CO2 emissions between 1970 and 2000*. *Source: UKERC

Our green revolution really got going in 2004, when one of the first commercial offshore wind farms started operations at Scroby Sands, off the coast of Great Yarmouth. It still generates enough power for around 40,000 homes a year and has become a tourist destination, with its visitor centre in the popular seaside town welcoming around 35,000 people every year.

It has also helped inspire local people to pursue energy sector careers by following relevant education pathways developed by local colleges with help from the industry, particularly the East of England Energy Group's (EEEGR) Skills for Energy programme.

The Southern North Sea (SNS) is now home to the largest concentration of offshore wind farms in the world, with almost 50% of the UK's operational fleet and 44% of its operational capacity. This includes the £2.5 billion, 714MW East Anglia ONE, located 43km off Lowestoft's coast, which became the world's largest operational offshore wind farm in 2020. It is also the first in a proposed super-array of up to six projects in the East Anglia Zone that could be built in the next 10-20 years.

In fact, three of the nine candidate zones for potential post-2025 development are in our region's coastal waters. This makes our ports the closest to a majority of both installed and planned projects, as well as being an established base for serving the UK's strategic gas fields in the SNS. That proximity of gas and offshore wind, along with nuclear at Sizewell, opens up the potential for the next giant leap in our clean energy transition journey: towards a low-carbon future.

*Source Opergy

A VISION FOR INTEGRATED CLEAN ENERGY GENERATION

We are ambitious and intend to consolidate our position as the UK's clean growth region over the next 30 years. That means embracing new technologies and finding ways to make our power supplies cleaner, sustainable, secure and resilient. It includes decarbonising our gas supply, which remains a primary source of heat and power to UK homes and industry, investing in renewable generation, and developing alternative fuels and energy storage.

> OUR REGION HAS THE POTENTIAL TO GENERATE ENOUGH CLEAN ENERGY TO POWER THE EQUIVALENT OF 50% OF THE UK'S HOMES BY 2050.

We believe the energy ecosystem in our region has the potential to generate clean power for around 50% of the UK's homes by 2050. That takes account of existing and proposed developments in our region for offshore wind in the SNS, nuclear power at Sizewell B and Sizewell C, as well as other onshore renewables such as solar and biomass. We also have a real opportunity to become the UK's primary producer of clean hydrogen for domestic, industrial, road transport and maritime use.

Reforming natural gas into hydrogen has traditionally not been easy, cheap or clean. However, the development of carbon capture and storage technology and the use of renewable energy to power the reformation process have the potential to turn 'grey' hydrogen blue. At the same time, electrolysis powered by renewable energy offers the prospect of generating even cleaner pink and green hydrogen.

Those ideas have received a powerful boost recently from two developments in our region. The first was the Government awarding coveted Freeport status to Felixstowe (in Suffolk) and Harwich (in neighbouring Essex), following a combined bid that centred on the creation of an integrated hydrogen generation, storage and usage hub. The second came in the form of a report from the Oil & Gas Authority (OGA) that said Bacton has the potential to become a significant hydrogen production site for London and the South East.

A COLLABORATIVE CLEAN ENERGY ECOSYSTEM

Our clean growth mission is supported by the commitment of EEEGR, the energy industry's regional business organisation. EEEGR represents more than 200 specialist energy and engineering firms and has been an integral part of the community for the last 20 years, leading the drive to attract investment and raise skills in the region. It combines business development support with effective lobbying, innovation promotion, and event hosting, as well as running various special interest and supply chain groups.

Other partners in the region include the New Anglia Local Enterprise Partnership (LEP) and local authorities, which help deliver a wide range of business support, including grants for growth and infrastructure investment. The New Anglia LEP is responsible for setting the economic strategies for Norfolk and Suffolk and places a strong focus on the clean energy sector and it has established numerous Enterprise Zones across our region. The Great Yarmouth and Lowestoft Enterprise Zone in particular, with six sites in and around the ports, aims to support growing clusters of energy related companies.

A number of major strategic innovation projects are proposed for development on several Enterprise Zone sites including new innovation precincts, incubators and business centres which will accelerate business growth in key higher value sectors as well as boosting innovative activity. These centres will connect into the wider innovation, science and research network to help enhance the ecosystem of high growth, high value businesses across Norfolk and Suffolk. This plan supports a number of activities and projects aimed at repositioning Enterprise Zones for clean growth, through encouraging low carbon, low impact developments, alternative local energy sources, supporting greener business practices in key sectors and encouraging sustainable transport connectivity.

The region's educational establishment is also committed to helping develop the next generation of energy experts, engineers, technicians and environmentally minded managers, who will help build a greener economy.

The Eastern Colleges Group, a collective of visionary post-16 education providers comprising of West Suffolk College, One Sixth Form College and Abbeygate Sixth Form College are committed to sustainability

and have launched a Sustainability Centre at their University Studies campus at West Suffolk College. The college has also opened a state-of-the-art STEM Innovation Campus in Bury St Edmunds, with a growing pipeline of students in engineering, sciences and digital technology disciplines.

East Coast College, based in Lowestoft and Great Yarmouth, is focused on giving young people a clear pathway to professional qualifications that will help them gain work in the industry. Its new £11.7 million energy skills campus in Lowestoft and its offshore energy skills campus in Great Yarmouth offer courses designed with the needs of local businesses in mind.

SUPPORTING BUSINESSES TO GROW

New Anglia LEP also lead and deliver, in partnership with Suffolk Chamber of Commerce, New Anglia Growth Hub which enables businesses to access a range of business support services from hundreds of sources. The hub's service is free and impartial and can help access grants finance, start-up support and international trade support.

POWERED BY OUR INTELLECTUAL CAPITAL

More broadly, the energy industry can draw on the world-leading research and development expertise in our universities, scientific institutions and digital technology hubs. Those centres of excellence can help us better understand the effect of the industry's work on the environment. They can also help maximise the use of tools such as Artificial Intelligence (AI), data analysis, and advanced control systems to manage the integration of our energy supply.

University of East Anglia (UEA), with its campus next door to the Norwich Research Park, is ranked 1st in the UK for its impact in climate and environmental sciences. It is also one of the top 10 UK universities for research output. It works with multiple partners across a range of disciplines and its Marine Knowledge Exchange Network connects 1000+ cross-sector stakeholders.

The Centre of the Environment, Fisheries and Aquaculture Science (Cefas) has had its headquarters in Lowestoft for the last 100 years. It is a world-leading research organisation that specialises in marine science, technology and environmental policy, including monitoring and assessment. In particular, it provides scientific and policy advice to governments and other international organisations on the development of offshore renewable energy.

TACKLING THE CAUSES OF CLIMATE CHANGE AND RELATED CHALLENGES SUCH AS FOOD & ENERGY SECURITY.

UEA and Cefas have worked together since the UEA's founding in 1965 through the Collaborative Centre for Sustainable Use of the Seas (CCSUS). They are particularly focused on understanding and tackling the causes of climate change and related challenges such as food and energy security.

The University of Suffolk (UoS) has areas of distinctiveness in sustainability and digital futures. The Suffolk Sustainability Institute (SSI) was formed in February 2018 in collaboration with Suffolk County Council. The SSI has three primary areas of interest: sustainable energy, design and the built environment and ecology and conservation. The university's Digital Futures Institute (DFI) focuses on technology, creative digital and future digital applications. At the heart of this activity is the DigiTech Centre, a collaboration between UoS and BT Group, with funding from New Anglia LEP. Located within Innovation Martlesham at Adastral Park, the centre provides training in cutting-edge digital skills for the communications technology sector, and fuels high tech businesses requiring access to a talented technology workforce.

Norfolk and Suffolk has a thriving network of innovation hubs specialising in agri-food, engineering and digital/ICT, as well as clean energy. Of particular relevance to the development of integrated Net Zero energy systems is BT Group's global R&D headquarters at Adastral Park in Suffolk, because it is the UK's leading patent filer for AI (with 86 patent families). BT's reputation for applied research has also helped it to establish the Innovation Martlesham cluster of around 150 like minded businesses, which employ around 3000 computer scientists and technicians on the park.

Unlimited opportunities in the East of England

GENERATING OPPORTUNITIES FOR FORWARD-THINKING BUSINESSES

Our integrated clean energy ecosystem is already home to a diverse and innovative community of more than 4,000 energy, engineering and low carbon related businesses. These employ around 35,000 people and support a further 12,000 jobs in the wider supply chain. Nevertheless, considering the long-term multi-billion pound investment plans for the region, we believe there is ample opportunity here for many more businesses.

The region already leads the nation in operations and maintenance (O&M) facilities. Four of our ports provide bases for operational projects and there are two further bases under construction and one in planning. At the same time, the SNS hosts more than 150 gas-related platforms that also need expert supply and maintenance services.

Those platforms and associated assets will also need to form part of the process for decarbonising our natural gas industry. That might take the form of repurposing them to generate hydrogen on the platform, using the pipeline network to sequester carbon in depleted gas fields. Where necessary there will also be opportunities for decommissioning specialists to remove and recycle such offshore infrastructure in an environmentally friendly manner.

Our region is also the closest in the UK to the four high growth European markets for offshore wind energy: the Netherlands, Belgium, Germany and Denmark. Between them they plan to install an additional 37GW of capacity by 2030. That makes Lowestoft and Great Yarmouth an ideal base for firms looking to service these markets, which is another reason why both ports are seeing ongoing investment in their infrastructure and facilities.

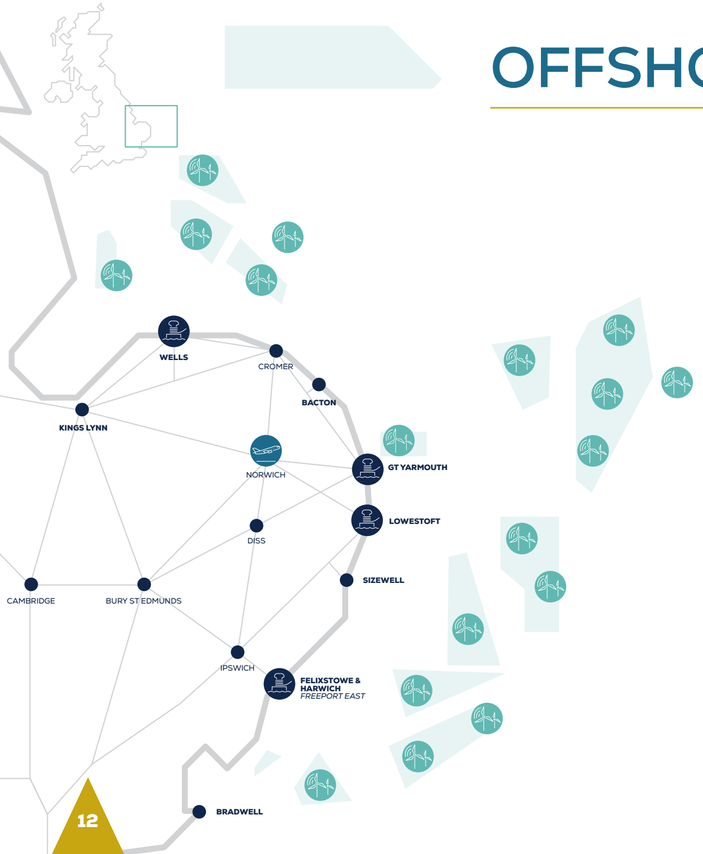
That investment is not confined to supporting industry. Both Great Yarmouth and Lowestoft, along with other towns in our region, have secured multi-million pound grants to improve the look and feel of their commercial centres for residents and visitors. This will ensure our region can continue to offer a great quality of life, as well as rewarding career and business opportunities.

Please read on to find out more about the individual sectors that are thriving in our region. If you are interested in relocation opportunities or want to discuss the support for start-ups and high-growth potential scale-ups, please contact our team. All the details are at the back of this prospectus.

OUR REGION CAN CONTINUE TO OFFER A GREAT QUALITY OF LIFE, AS WELL AS REWARDING CAREER AND BUSINESS OPPORTUNITIES

> **NORFOLK AND SUFFOLK'S ENERGY SECTOR HAS A LOT TO PLAY FOR OVER THE COMING YEARS AND IS PERFECTLY PLACED TO CAPITALISE ON THE OPPORTUNITIES ON THE HORIZON.**
>
> CJ Green
> Chair, New Anglia LEP

Unlimited opportunities in the East of England



OFFSHORE WIND

WHY CHOOSE THE SOUTHERN NORTH SEA TO SERVE THE GLOBAL OFFSHORE WIND SECTOR?

4.6 GW
OFFSHORE WIND POWER

8.3 GW
PROJECT PIPELINE TO 2030

1073
OPERATIONAL TURBINES

£1.3 BN PA
UK O&M BY 2030*

Are you looking to build your business by supplying goods and services to the global offshore wind energy sector?

Then the SNS off the Norfolk and Suffolk coast, in the East of England, is an ideal location. After all, the UK already has the world's largest offshore wind market, with 10.4GW of generating capacity, and 16 wind farms in the SNS generating **44%** (4.6GW) of that.

In fact, the SNS has the highest concentration of operational offshore wind farms in the world, including many of the largest, and a majority are within 100 miles of our main service ports at Great Yarmouth and Lowestoft. Overall, there are now **1073** wind turbines in the SNS, representing **47%** of the UK's total fleet (currently 2292). That concentration is set to grow as the region embraces the clean energy opportunities set out in the UK Government's 10 Point Plan for a Green Industrial Revolution (2020).

*Source ORE Catapult. **Based on installed capacity in 2021 of 4600Mw x 0.3886 offshore wind load factor x 8,760 hours / 3.618MWh annual consumption = homes powered equivalent.

> **THE EAST OF ENGLAND IS THE MOST RELEVANT PLACE IN GLOBAL OFFSHORE WIND**
>
> Jonathan Cole, Managing Director of Iberdrola Renewables Offshore.

GENERATING INVESTMENT OPPORTUNITIES

With a project pipeline out to 2030 for an additional 8.3GW of capacity, comprising five new build projects and four extensions, offshore wind in the SNS is set to drive the UK's transition to Net Zero. Those projects represent 30% of UK projects with planning consent and will deliver 40% of the UK's target of 40GW from offshore wind by 2030. They will also involve an estimated capital expenditure of up to £16 billion, compared with £28 billion for the rest of the UK and £72.6 billion in the rest of North-West Europe.

That investment is set grow to around £30billion by 2040, compared to £43 billion for the rest of the UK, and will drive the development of new O&M facilities in the region. The East of England already leads the nation in this respect, with seven operational sites and more under construction or in planning. That reflects the fact that our region is the closest not just to a majority of existing arrays in the SNS but also to three of the UK's nine potential post-2025 offshore wind development zones.

The East of England is also the closest UK region to four high-growth European offshore wind markets bordering the SNS: the Netherlands, Belgium, Germany and Denmark. Between them, they will install an additional 37GW of offshore wind generating capacity by 2030. This offers further opportunities for engineering and manufacturing firms, as well as maintenance services providers, looking to grow their business in both the UK and European markets.

THE SNS CURRENTLY GENERATES ENOUGH ENERGY TO POWER 4.3 MILLION UK HOMES.**

SUPPORTING YOUR AMBITIONS

If you choose Norfolk and Suffolk for your business, you can be sure of joining a supportive, experienced and dynamic community of energy professionals. Here you will find industry, academia, research and public sector working together to develop integrated systems for generating, storing and transmitting clean energy to the UK. Our whole system approach includes looking at using our growing offshore wind sector to decarbonise our strategically important gas sector and develop the blue/green hydrogen economy.

This means Norfolk and Suffolk is not just the location for businesses looking to maximise value from the manufacture, installation and O&M for offshore wind projects. It is also ideal if you want to serve other existing energy sectors, particularly gas, nuclear and solar, or develop innovative technologies such as flexible power generation, smart grids, and electric vehicle infrastructure.

Here you will find both funding and infrastructure to support your venture and partners to develop intellectual capital.

> **THERE ARE SOME INCREDIBLE COMPANIES HERE. EAST ANGLIA IS SUCH AN IMPORTANT EXPORTER OF SKILLS AND EXPERTISE ACROSS THE GLOBAL WIND BUSINESS.**
>
> Dr Catrin Ellis Jones
> Vattenfall

GENERATING THE SKILLS AND TALENT YOU NEED

You will also find a talented and growing workforce in the region with the skills you need to succeed. Over the last 20 years, EEEGR has, through its Skills for Energy programme, overseen the development of an integrated skills infrastructure. This brings together local colleges, universities, independent training providers and employers to develop and deliver courses that are relevant to the current and future needs of the energy industry.

Norfolk and Suffolk has the potential to benefit more than any other region in England from the growth in offshore wind. Forecasts indicate that the industry will create an additional 6,150 full time, well-paid, highly productive jobs by 2032 (an increase of more than 600%). This will require employees with a diverse mix of energy, engineering and marine skills.

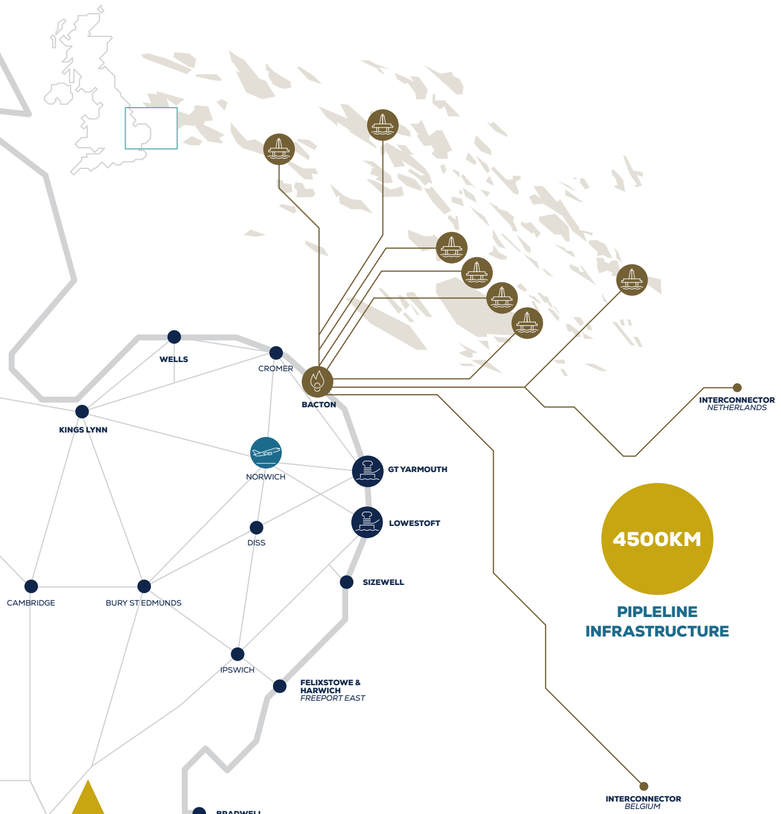
Unlimited opportunities in the East of England

To help our young people make the most of these opportunities, East Coast College, in partnership with local authorities, the New Anglia LEP and employers, has launched the Offshore Wind Skills Centre in Great Yarmouth and the Energy Skills Centre in Lowestoft to support energy, maritime and related sector training in the region. More recently New Anglia LEP, Norfolk County Council and Great Yarmouth Borough Council announced a £18 million investment in an offshore energy O&M campus for the Port of Great Yarmouth to support business growth. Similarly, East Suffolk Council has launched the PowerPark project next to the Port of Lowestoft and centred on the OrbisEnergy clean energy innovation and incubation hub.

The proximity of energy demand centres in London and the South East of England provide a ready market and low transmission costs for the power generated in the SNS. Operators also benefit from the region's close proximity to UK and European service ports and component load-out facilities. This has enabled the sector to maximise value and build strong links between the North Sea's energy clusters over the last 15 years, so helping to drive operational and technological innovation.

SNS GEOLOGY AND GEOGRAPHY PERFECT FOR OFFSHORE WIND

- Average wind speeds in excess of 9m/s
- Favourable geology suitable for lower cost foundations
- Shallow water, generally less than 50m, enables fixed foundations and easier installation
- Benefits of project clustering to reduce construction and O&M costs
- Proximity to UK and European port facilities to support all project phases and energy demand centres e.g. London, South East



GAS

THE TRANSITION FUEL OF THE FUTURE

Natural gas from the SNS first became a transition fuel to clean energy generation 60 years ago, when it was discovered off the Norfolk coast.

30%
OF UK GAS

150+
SNS PLATFORMS

£5.3 BN
INVESTMENT TO 2050

5 TRILLION CFT
UNTAPPED GAS

By replacing coal in many power stations, gas helped cut the UK's CO2 emissions by 20% between 1970 and 2000*. Now gas, and its associated infrastructure, is set to be a transition fuel that helps the UK develop a Net Zero energy system by 2050.

The SNS is the UK's natural gas basin and is likely to be a major source of supply for at least 30 to 50 years. The region already has 100 operational gas fields, more than 150 platforms and some 4,500km of pipelines. There are also some 8.8 trillion cubic feet (tcf) of natural gas in existing reserves and an estimated 5tcf of untapped gas in reservoirs and undeveloped discoveries.

Bacton Gas Terminal in Norfolk, which opened in 1968 to bring the first SNS gas ashore, remains a strategically important national energy asset. It now has six terminals across 4 sites, including two interconnectors linked to European gas infrastructure. These enable the UK to import and export gas and so maintain a secure and reliable energy supply.

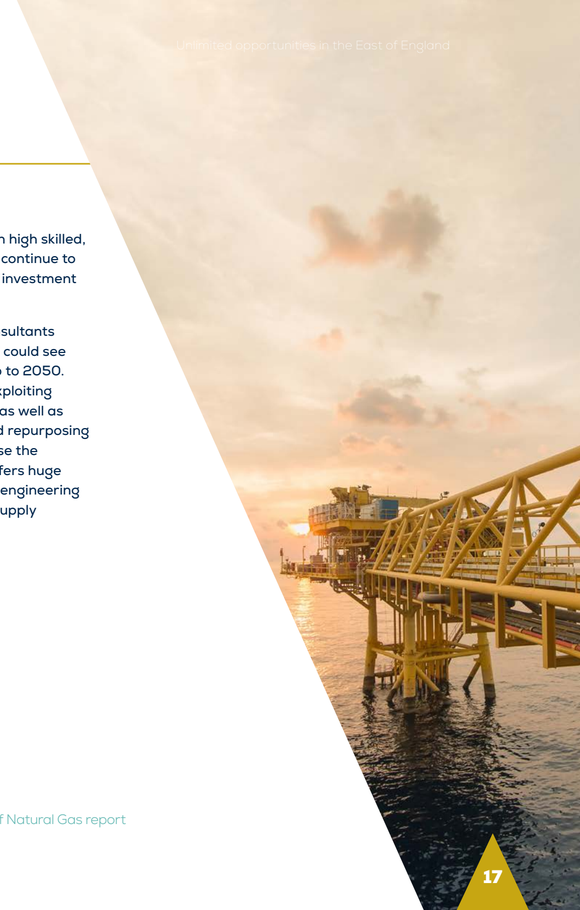
Bacton is responsible for delivering around 30% of the UK's total gas requirements through the national transmission pipeline. This is vital for industry as well as UK homes (80% of which use gas for cooking or heating).

Both the SNS and Bacton sustain high skilled, high value jobs in the region and continue to help attract billions of pounds of investment to the UK.

In fact, a report from energy consultants at Opergy forecast that the SNS could see new investment of £5.3 billion up to 2050. This would come from a mix of exploiting existing reserves and new finds, as well as developing new technologies and repurposing infrastructure to help decarbonise the energy sector. We believe this offers huge opportunities to manufacturing, engineering and O&M businesses looking to supply services to the industry.

*Source: UKERC, The Future Role of Natural Gas report

Unlimited opportunities in the East of England



DECARBONISING NATURAL GAS

As you will see from the Hydrogen section of this prospectus (page 24), the East of England is committed to generating green, blue and pink hydrogen at an industrial scale. Natural gas is an obvious candidate for generating blue hydrogen as we already have the infrastructure at Bacton to introduce a lower carbon blend of gas and hydrogen into the national transmission pipeline. It may also be possible to use the offshore pipeline network to store carbon captured in the process in depleted gas fields.

SNS gas fields also align closely with the offshore wind leasing zones, which has already helped create considerable synergies between the two sectors in skills and, marine logistics and technologies. There is now the potential for developing an integrated offshore power generating network that would save money, maximise value from renewable energy and strengthen the resilience of the UK's energy supply. This would also benefit skilled technicians and other professionals by opening up more opportunities for cross-sector collaboration, as well as inter-sector training and certification (something colleges in our region are keen to support).

DEVELOPING AN INTEGRATED OFFSHORE POWER NETWORK

Here are three ways that an integrated offshore power generating network might work:

1. **'Gas platform electrification'** aims to use electricity directly from offshore wind turbines to power the gas production platforms (and perhaps generate blue hydrogen before bringing the gas ashore).
2. **'Gas to wire'** would use gas to generate electricity on the platform and then bring it ashore using the existing sub-sea cables from the offshore wind turbines.
3. **'Power to gas'** would use electricity from offshore wind to create green hydrogen through desalination and electrolysis and then bring that to shore using existing gas pipelines.

An integrated clean energy ecosystem would help investors and entrepreneurs find the talent, experience and support to grow their businesses. It would also drive the development of new technologies that can accelerate the UK's journey to Net Zero. Some of these ideas are already being explored in various projects such as the Bacton Hub (see the Hydrogen section), and by our education sector (see Workforce & Skills section).

As well as an experienced community of energy professionals, Norfolk and Suffolk has talented digital technology and advanced engineering communities, including those based at hubs such as Innovation Martlesham and Hethel Engineering Centre. Along with researchers in our academic centres of excellence, including University of East Anglia in Norwich and University of Suffolk in Ipswich, these professionals are developing cutting edge ideas including AI, sensor technologies and remote machine automation. They are already playing their part in the development of integrated energy systems.

Unlimited opportunities in the East of England

CARBON CAPTURE, UTILISATION AND STORAGE

The SNS is well placed to develop Carbon Capture, Utilisation and Storage (CCUS) technologies. Bacton Gas Terminal and its proximity to depleted SNS gas reservoirs and infrastructure, such as the Hewett field for storage capacity, could facilitate the transition to Net Zero by tackling emissions from existing energy assets, providing solutions in hard to decarbonise sectors and support the rapid scaling up of low-emissions hydrogen production.

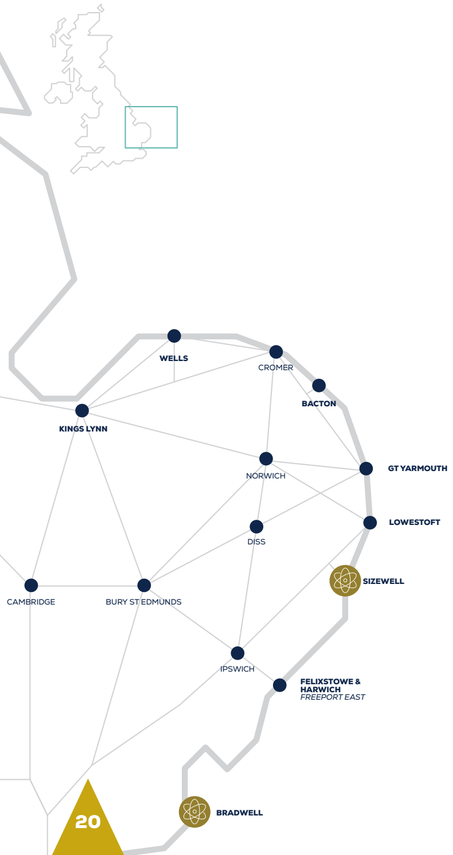
REPURPOSING OPPORTUNITIES

As well as repurposing and upcycling existing gas assets, we must face the challenge of decommissioning many of them. According to the OGA, the SNS has more than 164,800 tonnes of ageing infrastructure, some 20 years past its planned lifespan, which will need to be brought to shore for recycling and disposal. While the OGA forecasts that this work could cost the industry £2.5 billion by 2030, this has the potential to also create new businesses and jobs in engineering and efficient waste management. The SNS is ideal for testing new decommissioning methods because the gas platforms are smaller than elsewhere and its shallow waters make it easier to handle vessels, infrastructure and equipment. There are also a number of service ports in close proximity with talented workforces, making it easier for businesses to find experienced professionals to collaborate on projects. You can see one such venture already in Great Yarmouth, where Peterson and Veolia have partnered to create an environmentally friendly decommissioning facility that is already handling SNS recycling projects.

Here in Norfolk and Suffolk we aim to generate the workforce of the future capable of tackling these and other clean energy challenges. The new £11.3 million Energy Skills Centre at East Coast College's Lowestoft campus is focused on delivering training programmes centred on the needs of the engineering, maritime, energy and offshore sectors. It provides students, and commercial customers looking to up-skill their employees, with qualifications ranging from Level 3 certifications to higher level programmes and apprenticeships.

Source: www.iea.org/reports/net-zero-by-2050 and Hydrogen East Bacton Energy Hub report

Whether your business is interested in decarbonising the gas sector or helping to decommission assets, Norfolk and Suffolk has the talented workforce and experienced partners to help you succeed.



NUCLEAR

NEW NUCLEAR FROM THE CLEAN ENERGY COAST

Nuclear power has been a key part of the energy sector in our region since construction of Sizewell A on the Suffolk coast began in April 1961. Sixty years later, Sizewell B is still operational and EDF Energy is seeking planning consent for Sizewell C. The Sizewell C Consortium of more than 200 companies, as well as several trade unions, wholeheartedly supports that proposal and is urging the UK Government to give it the go-ahead.

The UK will need a mix of clean energy generation to achieve its target of Net Zero by 2050. That's why nuclear power, which generates up to 20% of the UK's electricity every day regardless of the weather, is strategically important to the nation's energy supply. The Sizewell site could generate secure, reliable, low-carbon electricity and support thousands of well paid jobs across the supply chain for decades to come.

Sizewell B, which celebrated 25 years of operations in 2020, already employs around 520 people full time and a further 250 full-time contractors. This brings around £40 million into the local economy every year, and an extra £30 million in an outage year, when the workforce can grow by an extra 1,000 people. Thanks to their talent and dedication, Sizewell B generates enough low carbon electricity each year to power 2.2 million homes, around 3% of the UK's total energy demand.

£4.5 BN
SZC VALUE TO REGION

1500
APPRENTICESHIPS ENABLED

73,000
JOBS DURING SZC CONSTRUCTION

900
SZC OPERATIONAL JOBS

SEIZE THE SIZEWELL SUPPLY CHAIN OPPORTUNITY

The construction and operation of Sizewell C will deliver significant economic, social and environmental benefits, not just to the region but also to the country. EDF Energy has already committed to investing in local employment, skills and education and aims to spend up to 70% of the construction value in the UK. A recent report by Ernst & Young, commissioned by the Sizewell C Consortium found this will support around 73,000 jobs including 35,000 in Suffolk, and more than 2,500 businesses across the UK during the 10-12 year construction phase.

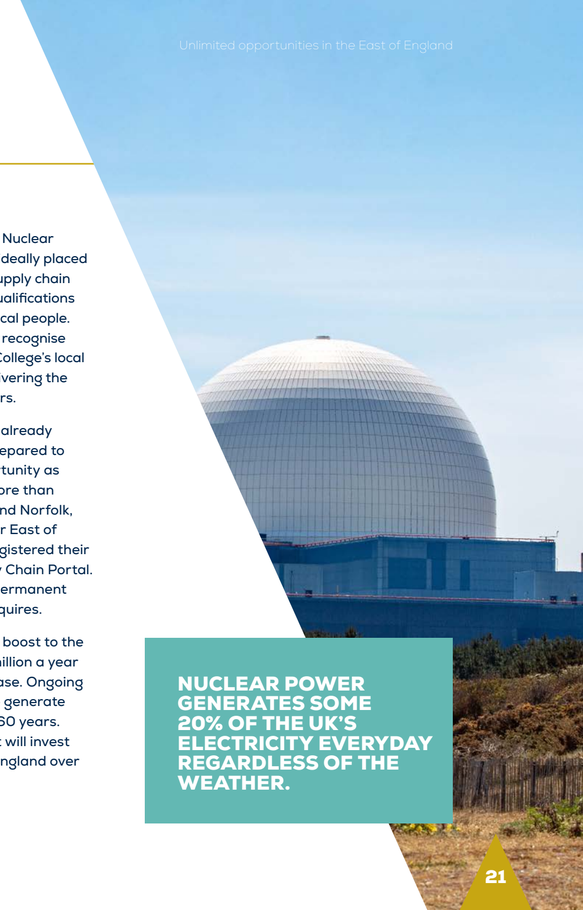
EDF Energy will enable the creation of around 1,500 apprenticeship opportunities on the construction site. It will also support additional apprenticeships across Suffolk and Norfolk by transferring part of its Apprenticeship Levy to local SMEs (using a scheme run by the New Anglia LEP). Once Sizewell C is completed, the company will employ 900 people in permanent operational jobs to run the power station.

West Suffolk College is a National College for Nuclear approved provider and the region's flagship National Skills Academy Nuclear (NSAN) accredited provider, it is ideally placed to spearhead the nuclear skills supply chain bringing nationally recognised qualifications and economic opportunities to local people. The National College for Nuclear recognise the importance of West Suffolk College's local knowledge and experience in delivering the skills needed to support employers.

The local business community is already supporting this project and is prepared to take full advantage of the opportunity as soon as it gets the go-ahead. More than 1,000 businesses from Suffolk and Norfolk, and a further 318 from the wider East of England region, have already registered their interest on the Sizewell C Supply Chain Portal. A number will form part of the permanent outage team that the project requires.

All this activity is set to deliver a boost to the local economy of around £125 million a year during the core construction phase. Ongoing operations are then expected to generate a further £40 million a year for 60 years. Overall, EDF Energy estimates it will invest up to £4.5 billion in the East of England over Sizewell C's lifetime.

Unlimited opportunities in the East of England



NUCLEAR POWER GENERATES SOME 20% OF THE UK'S ELECTRICITY EVERYDAY REGARDLESS OF THE WEATHER.

COMBATING CLIMATE CHANGE

Once operational, Sizewell C will provide 3.2GW of reliable, low carbon electricity each year for 60 years. This is enough to power around 6 million homes a year and, on current projections, will be enough to meet 7% of the UK's total annual energy needs. That will save around 9 million tonnes of carbon emissions every year, compared to a similar sized gas-fired power station, so helping us reach our Net Zero target by 2050.

EDF is also committed to reducing the impact of Sizewell C's construction on the environment and improving biodiversity around the site. It has already designated more than 250 hectares of land for wildlife as part its plans. That includes converting over 150 hectares of arable land into native grassland since 2015.

At the same time, EDF is working with neighbouring Leiston on a project to make it one of the first Net Zero towns in the UK. The project is led by a team of community representatives and local councils, with support from engineers and a number of specialist consultants. As well as providing project management skills, EDF Energy's experts are identifying ways of decarbonising homes and businesses in Leiston.

Sizewell is not only in an area of outstanding natural beauty but also overlooks an important marine habitat. That's why, over the last 10 years, EDF Energy has worked with scientists from Cefas, in Lowestoft, to better understand this environment. Using fundamental research from Cefas, EDF Energy aims to develop Sizewell C in the most sustainable way possible.

> **ADDING DAC TO OUR EXISTING PLANS FOR HYDROGEN PRODUCTION AT SIZEWELL C MEANS WE CAN GO EVEN FURTHER TO REDUCING CARBON EMISSIONS**
>
> Julia Pyke, SZC Director of Financing

DEVELOPING LOW CARBON TECHNOLOGIES

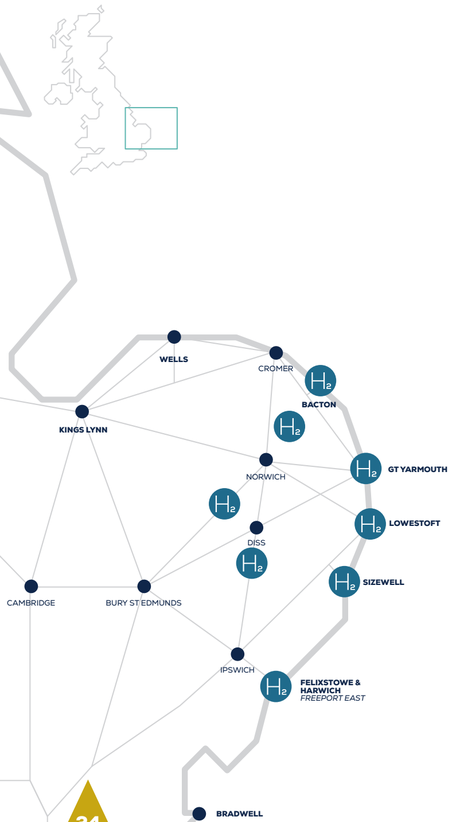
EDF Energy is also looking at ways of supporting a wider energy hub of businesses that are developing low carbon technologies with the potential to deliver on the Government's 10 Point Plan for a Green Industrial Revolution. In November 2020, it announced that it was looking for commercial partners to work on two clean-energy related demonstrator projects. These will test the idea of using spare low carbon heat from Sizewell B to create green hydrogen and to facilitate Direct Air Capture (DAC) of atmospheric CO2.

The green hydrogen demonstrator project aims to run an electrolyser with the potential to produce up to 800kg of hydrogen a day. It would then use this in vehicles and machines on the Sizewell C construction site to reduce the use of diesel and its associated carbon emissions. EDF Energy is also working with the Freeport East consortium and other partners in the region to see if it can supply sufficient hydrogen to meet their zero-carbon transport ambitions

In May 2021, EDF Energy announced that Sizewell C has been awarded £250,000 by the Government to lead a consortium of engineers and carbon capture experts at the University of Nottingham, Strata Technology, Atkins, and Doosan Babcock on a design study for a unique DAC system which runs on low carbon heat powered by the proposed new nuclear power station.

The Direct Air Capture demonstrator project will test the viability of using some of the power station's thermal output to reduce atmospheric CO2 and so potentially become carbon negative in operation. If the demonstrator is successful, EDF Energy envisages establishing a large-scale DAC plant on the Sizewell C site. If your business has experience in these or other relevant low carbon technologies, please contact the EDF Energy Innovation team.

Source for data on Sizewell, the Sizewell C Consortium and Ernst & Young



HYDROGEN

HIGH HOPES FOR HYDROGEN

Hydrogen could be the clean fuel that radically decarbonises the way we generate power for our homes, industry and transport. Recognising this, the UK Government, in its Ten Point Plan for a Green Industrial Revolution, has set an ambitious industry target of creating 5GW of capacity for low carbon hydrogen production by 2030. We believe the East of England is an ideal location for building that capacity, with the technical skills to bring hydrogen to market safely using existing infrastructure and innovative technologies.

Norfolk and Suffolk's energy sector is already one of the UK's primary generators of renewable electricity. Wind turbines in our coastal waters produce around 44% of the UK's total 10.4GW of offshore wind energy, which is essential for producing green hydrogen. At the same time, Sizewell B currently produces enough nuclear power for around 8% of UK homes, which could be used off-peak to produce pink hydrogen.

The SNS is also the UK's principal gas basin and 30% of our natural gas comes ashore at the strategically important Bacton Gas Terminal complex on the Norfolk coast. This offers the potential for taking an integrated approach to the production and storage of blue hydrogen. As well as using offshore wind energy to reform natural gas, the carbon could be captured and stored in depleted gas fields using the existing offshore pipeline infrastructure.

There are three principle ways of producing clean hydrogen, called Green, Blue and Pink.

- Green is made from water, using electrolysers powered by wind energy
- Blue is made from natural gas, using renewable energy to strip the carbon from the methane ('reforming') and then sequestering it using Carbon Capture and Storage technologies
- Pink uses the same electrolysis process as Green but is driven by nuclear power.

At the same time, the hydrogen could be blended at low-levels with natural gas entering the national transmission network. This would reduce CO2 emissions when the gas is burnt but without the need to immediately retrofit homes and industry to handle the hydrogen. We believe such an integrated and innovative approach would greatly accelerate the UK's energy transition to Net Zero by 2050.

TURNING IDEAS INTO REALITY

A recent OGA study has concluded that the Bacton area has the potential to become a significant hydrogen production site for London and the South East. A consortium of industry experts, called Hydrogen East, is now looking to develop the Bacton Energy Hub idea. As well as being a major clean energy demonstration project, it could increase the life of the SNS gas assets and maximise their economic value beyond the current 40-50 years forecast.

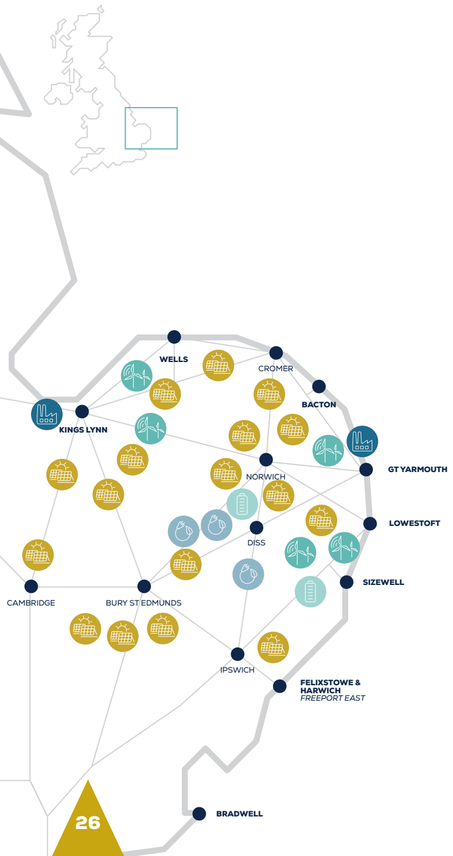
Meanwhile, EDF Energy is looking at developing a green hydrogen demonstrator project at Sizewell B on the Suffolk coast. It is also working with the Freeport East consortium (centred on the ports of Felixstowe and Harwich) on plans to produce 1GW of hydrogen (20% of the UK's 5GW target) to help decarbonise the maritime and road haulage sectors. Both these projects have the potential to create high value jobs and drive clean energy innovation.

In fact, we believe that the development of large-scale hydrogen production, storage and distribution presents significant business opportunities for the energy supply chain across our region. There is also considerable potential for people with transferable skills and expertise gained in the offshore wind and gas sectors to benefit from the growth in the hydrogen economy.

> **THE BACTON AREA HAS THE POTENTIAL TO BECOME A SIGNIFICANT HYDROGEN PRODUCTION SITE FOR LONDON AND THE SOUTH EAST**
>
> OGA Bacton Energy Hub report

Unlimited opportunities in the East of England

SOLAR, BIOENERGY & ONSHORE WIND



THE SUNSHINE COAST

The breadth and depth of the East of England's energy sector is not confined to offshore wind, nuclear and gas. We also have a burgeoning onshore sector with a particular strength in solar PV, as well as onshore wind and bioenergy (for power generation and the production of biogas and biodiesel). These opportunities are set to grow as landowners and farmers look at ways of decarbonising agriculture, including by taking land out of intensive cultivation.

The East of England is well known as a holiday destination in part because it has a reputation for being dry and sunny. In fact, Norfolk and Suffolk benefit from around 1,600 sunshine hours a year, making it an ideal location for large scale solar farms. As a result, the East of England already has in excess of 2GW of solar PV capacity and developers are planning to build many more, including the Sunnica Energy Farm which would be the largest solar farm in the UK.

That sunny climate has helped make Norfolk and Suffolk one of the largest agricultural regions in the UK, producing nearly 14% of England's crops and 9% of its livestock output. It is also the largest straw producing region in the UK, with around 310,000 hectares of cereals and some 60,000 hectares of oilseed grown each year, yielding more than 1 million tonnes of straw a year. This, along with large quantities of animal waste and other biomass available in the region, offers significant opportunities for sustainable energy generation.

Norfolk and Suffolk is already a leading area for animal waste biomass installations, with a third of the national capacity at two large power stations near Thetford in Norfolk and Eye in Suffolk. Snetterton in Norfolk is also home to one of the UK's newest straw-fed biomass plants. Overall, the East of England has more than 560MW of installed bio-energy capacity across 181 sites and the bio-energy industry is estimated to be worth in the region of £2 billion.

The region's low-lying landscape is not as windy as the SNS, where we have the UK's largest concentration of offshore wind farms. Nevertheless, the East of England has a high concentration of onshore wind farms with around 480MW of capacity installed across 883 sites. This is set to grow – and with it the operations, maintenance and installation opportunities – as developers look to repower older smaller turbines with larger more efficient models.

2GW
INSTALLED SOLAR PV

25
BIOENERGY PLANTS

480MW
ONSHORE WIND POWER

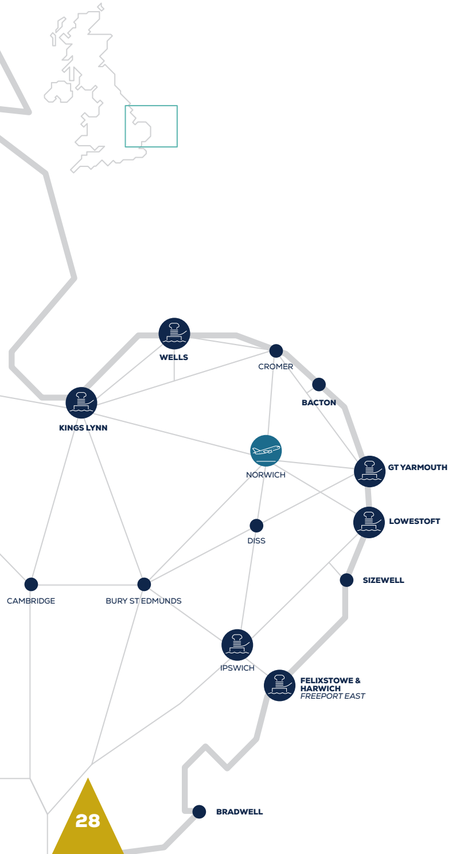
A BRIGHT FUTURE FOR SOLAR

The Sunnica Energy Farm, on the West Suffolk border, would be the region's first grid-scale solar energy farm, with the capacity to send up to 500MW of renewable energy to and from the National Grid. This would be enough to power around 100,000 homes. As well as solar PV panels, it will include a battery energy storage system, creating resilience in energy supplies. The project, which is classed as a Nationally Significant Infrastructure Project due to the amount of renewable energy it would produce, is currently going through the planning system.

Meanwhile EDF Renewables has proposed two 50MW solar farms for the region, at Tye Lane near Ipswich and Bloys Grove near Norwich. Both would be around 80 hectares in size and include strong commitments to improving biodiversity by maintaining existing trees and hedgerows and planting more. At the same time, by taking the land out of intensive cultivation and encouraging meadow grasses and flowers to grow under the solar panels, the land will in time act as a carbon sink.

Unlimited opportunities in the East of England

PORTS



SAFE HARBOURS WITH SEAS OF OPPORTUNITY

As you'd expect from a region with 150 miles of coastline, Norfolk and Suffolk has a number of working ports, including the UK's busiest container port at Felixstowe. The ports of King's Lynn and Ipswich tend to be used for trade in agricultural and industrial goods, including grain, fertiliser, and aggregates. The ports of Great Yarmouth and Lowestoft, along with the smaller Port of Wells, are major centres for servicing the offshore gas and wind energy sectors in the SNS.

Great Yarmouth and Lowestoft now have the largest concentration of offshore wind projects in the world within 100 miles of them. As a result, they offer the fastest steaming times to 70% of the installed and planned offshore capacity in the SNS. This has made them an ideal base for many energy businesses engaged in the construction, O&M of turbines and associated sub-sea structures.

THE FASTEST STEAMING TIMES TO 70% OF THE INSTALLED AND PLANNED OFFSHORE CAPACITY IN THE SNS.

Businesses looking for modern offices, industrial units or development land, including quayside space, can take advantage of the Great Yarmouth and Lowestoft Enterprise Zone, which aims to grow energy related clusters in and around the ports. The Enterprise Zone is within an hour's drive of Norwich International Airport, with daily flights to Aberdeen and Schiphol and helicopter services providing access to installations in the SNS.

The Great Yarmouth Enterprise Zone also benefits from having Local Development Orders which offers streamlined planning process. Beacon Park, located in Gorleston, is already established as a business hub for the energy sector.

FREEPORT EAST

Port of Felixstowe, in partnership with Harwich in Essex, recently won the UK wide bid to be one of eight new Freeports. Freeport East aims to create a green-energy innovation cluster that will draw on the region's strengths in offshore wind and nuclear to create a Hydrogen Hub that will help decarbonise road, rail and maritime freight transport. It will work with partners across the region, including businesses, universities and the technology research campus at Adastral Park, just outside Ipswich.

OPERATIONS AND MAINTENANCE

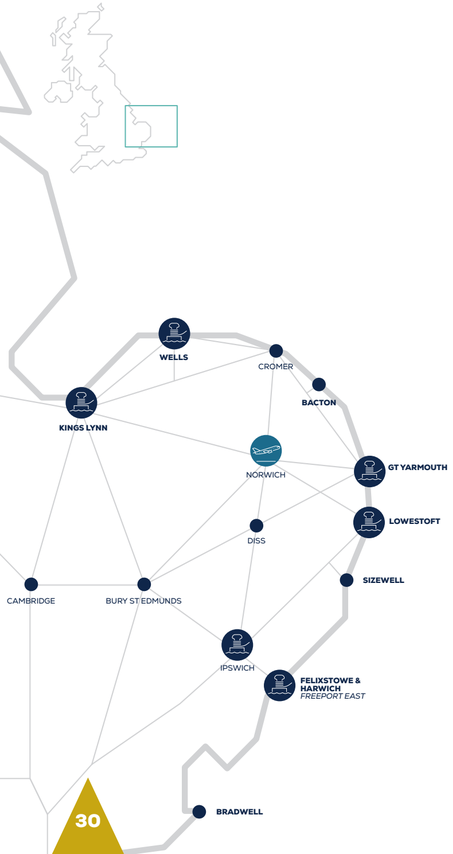
Our region already leads the UK for offshore wind O&M facilities; with more to follow to support the 10GW+ of proposed developments in the SNS.

- **Lowestoft – ScottishPower Renewables O&M base for East Anglia ONE**
- **Lowestoft – SSE/RWE O&M base for Greater Gabbard**
- **Great Yarmouth – Equinor O&M base for Dudgeon and operations centre for Hywind, Scotland**
- **Great Yarmouth – RWE O&M base for Scroby Sands**
- **Port of Wells (Egmere Business Zone) – Equinor O&M base for Sheringham Shoal**
- **Harwich, in Essex – RWE O&M base for Galloper**

Unlimited opportunities in the East of England

Unlimited opportunities in the East of England

PORTS



GREAT YARMOUTH

The port of Great Yarmouth is a modern, multi-purpose facility offering 24/7 unrestricted operations. Its deep-water outer harbour can accept vessels up to 220m in length and up to 10m at chart datum with a 1-2m tidal range, while the river port can accept vessels of up to 120m in length, or up to 5.7m at chart datum with a 1-2m tidal range. Peel Ports recently invested £12 million upgrading its quays, equipment and storage areas to support the offshore energy industry.

Located within close proximity to two of the largest planned windfarm developments by Vattenfall and ScottishPower Renewables, where there is a combined 6.4GW capacity to be installed. The port offers both a deep-water outer harbour and river harbour enabling it to support Crew Transfer Vessels (CTV) and Service Operations Vessels (SOV) used for the O&M of windfarms.

Peel Ports have a fully functioning North terminal, with plans to create a brand-new Southern Terminal, consisting of an additional 350m of quay, RoRo ramp, new heavy lift pad area and approx. 10 hectares of strengthened outdoor storage space.

ranjit.nagra@peelports.com

O&M CAMPUS

Norfolk County Council, Great Yarmouth Borough Council and New Anglia LEP have recently announced £18 million of funding to deliver an offshore energy O&M campus. Redeveloping vacant parts of land owned by Great Yarmouth Borough Council, the Crown Estate and Peel Ports, this is a positive response showing plans for investment within Norfolk and for the offshore wind sector. The project began in July 2021 with phase 1 due for completion scheduled for Spring 2022.

The site, which will be located at the entrance of River Yare will have a closer proximity to the SNS offshore energy developments and will reduce O&M costs and maximise efficiency of supporting activities. The site will also be within close proximity to the outer harbour, giving clients access to deep water as well as the river port, making this attractive to O&M businesses looking to invest in the new site.

The O&M campus could provide up to 32,040m2 of prime industrial/commercial space (23,960m2 of industrial/commercial floorspace and 8,080m2 of exterior/laydown/storage space), accommodating significant inward investment in office, storage and technical buildings, creating around 650 jobs.

GREAT YARMOUTH INCUBATOR

Great Yarmouth Borough Council are leading the delivery of a business incubator facility providing shared workspace and innovation facilities for small to medium sized enterprises (SME) and start-up businesses supporting the delivery of the energy industry.

The facility will provide the space to co-locate and work with similar organisations with affordable, adaptable and flexible workspaces enabling knowledge sharing and business collaboration.

Located on South Beach Parade, the Incubator will form an important cluster of businesses in Great Yarmouth, increasing employment and entrepreneurial opportunities, benefiting from its close proximity to the port and energy sector hub, located nearby.

info@generate-energy.co.uk

OUTER HARBOUR

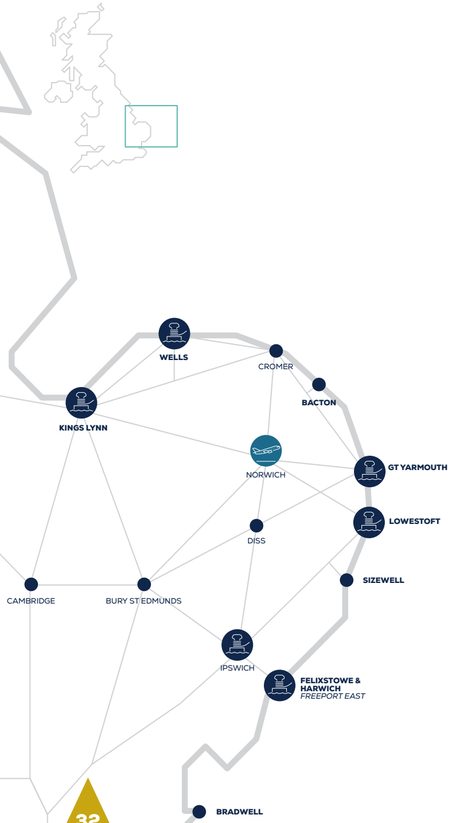
- Quay space – 28,500m2
- Land potential – 50 acres
- Deep water for new generation of wind installation vessels
- No lock or air draught restrictions

INNER HARBOUR

- Multiple berths
- Pontoon potential in designated locations
- Lock free easy access at all states of tide
- Multi-million investment to create an energy O&M campus
- 24/7 operations
- Land to lease
- O&M base for Equinor's Dudgeon offshore wind farm
- Installation base for Sheringham Shoal and Lincs offshore wind farms
- Purpose-built turbine pre-assembly base for Galloper offshore wind farm
- Construction and installation base for East Anglia ONE offshore wind farm
- Adaptable storage and warehousing
- Dry dock facilities

Unlimited opportunities in the East of England

PORTS



LOWESTOFT

The Port of Lowestoft handled around 75,000 tonnes of cargo in 2020, a figure which is set to double in 2022. The port has emerged as a thriving centre for companies servicing the offshore energy sector and handles in excess of 6,700 vessel calls each year, including platform supply, crew transfer, support and marine survey vessels.

It sits adjacent to PowerPark, which is home to the OrbisEnergy innovation and incubation centre for clean energy businesses as well as a number of leading offshore wind developers, operators and experienced supply chain partners.

LEEF

In March 2021, ABP announced a five year plan to develop the Lowestoft Eastern Energy Facility (LEEF) involving an initial £25 million investment in state of the art infrastructure to support the offshore energy industry. From 2024 LEEF East will create a step change in marine capability and capacity for offshore wind customers, with three new deep-water berths spanning over 360m, additional CTV berthing capacity and 8 acres of hinterland. LEEF East is ideally positioned to support Lowestoft's existing customers and future offshore wind projects with O&M and construction support activities. The LEEF West project is expected to be in place by 2026, bringing up to 200m of additional quayside and up to 2.6 acres of infill land.

ABP aims to provide superb port facilities which help to deliver the energy transition, to generate a robust economic base by securing core port sectors, and to reinforce Lowestoft's success by widening competitive advantage in offshore wind O&M.

In the meantime, ABP's Town Quay project has kickstarted a new growth phase for the port, creating 2.5 acres of solid laydown area, new bunkering facilities and new fenders alongside its 200m, 6.1m draught quayside.

Network Rail have recently invested in Lowestoft's rail sidings, allowing freight trains to utilise the port to distribute aggregates across the UK. £400,000 will be invested to upgrade port infrastructure to support the long-term supply of aggregates into the port, reducing HGV road journeys.

At the west end of the port, further investment has been made to prepare a 13 acre site to support major local infrastructure projects, including the Gull Wing Bridge and Flood Risk Management Projects. The site is ready for further major national infrastructure projects.

plitten@abports.co.uk

POWERPARK

PowerPark, located immediately to the north of the Port of Lowestoft's outer harbour, has been designated by East Suffolk Council as a location for clean energy businesses, building upon the success of existing operators and supply chain companies resident in the area. The park will be a catalyst to boost employment, attracting high profile businesses to Lowestoft and skilled roles to the local area.

In September 2020, East Suffolk Council launched its PowerPark Design Vision which outlines the key principles and overarching design concepts for the 24.7ha site. The vision sets out proposals on how the area can develop, enabling its role to accommodate businesses which are expected to invest or expand in the area over the next 10 years, responding to market conditions and business needs.

OUTER HARBOUR

- Total port area - 39.2 ha
- Quay length - 1,400m

INNER HARBOUR

- Quay length - 2,100m
- Surrounding Enterprise Zones
- 24/7 operations
- Lock free easy access at all states of tide
- Construction support base for Galloper Offshore Wind Farm
- Adjacent PowerPark, home to ScottishPower Renewables, SSE/RWE, OrbisEnergy
- Mobile cranage at North Quay terminal with 16,000 sq. m of storage
- 5,000 sq. m of storage space
- 3 modern transit sheds
- Vessel support facilities for CTV operators
- Former Shell Base available for redevelopment - 5.46 hectares
- Dry dock facilities

CREATING THE CONDITIONS FOR SUCCESS

To support business to invest in Lowestoft, a high-quality scheme comprising of 14 flexible businesses units ranging from 34m2 to 223m2 is coming to PowerPark from September 2022. The Newcombe Road site will include units with office, warehousing and workshop space with 5m eaves height and allocated on-site parking. Available with competitive lease options, the development will act as exemplar of sustainable building methods, incorporating clean energy power supply and innovative energy efficiency and storage technologies.

The development offers easy access to the port of Lowestoft, OrbisEnergy and East Coast College's Energy Skills Centre and will benefit from ultra-fast broadband.

economicregen@eastsuffolk.gov.uk

WORKFORCE & SKILLS

GENERATING AMBITION: ENERGISING CAREERS

The East of England's energy sector has developed a skilled and diverse workforce over the last 60 years. This has helped many businesses succeed here and grow by exporting their services around the world. Employers, educators, training providers, and the public sector in our region are committed to continuing to build on that talent base by investing in education and training for a new generation of energy professionals.

The drive to Net Zero by 2050 will see a radical shift in the UK's energy supply, as we decarbonise industry and build our onshore and offshore low carbon capabilities. Developments off the coasts of Norfolk and Suffolk alone could create more than 6,000 well-paid, high-skilled, full-time jobs by 2032 (a 600% increase on current direct employment). At the same time, the Ernst & Young report: Sizewell C A catalyst for jobs and growth in the East of England, commissioned by the Sizewell C Consortium has found that the proposed Sizewell C nuclear power station would support around 73,000 jobs, including 35,000 in Suffolk, and more than 2,500 businesses across the UK, as well as enabling around 1,500 local apprenticeships during its 10-12 year construction phase.

These developments will need people with capabilities ranging from level 2-3 qualifications for apprentices, through technical qualifications in areas such as safety and maintenance, to degree level and beyond in engineering, computing and other technologies – as well as expert project and people managers. That is why EEEGR has been working with industry and education providers to develop our energy skills infrastructure. Its Skills for Energy programme has been running since 2005 to inspire the next generation and to ensure that skills development in the region meets the changing technical and commercial needs of our energy sector.

CELEBRATING 20 YEARS
EEEGR has been working with industry and education providers to develop our energy skills infrastructure over the last 20 years.

SKILLS FOR OUR CLEAN ENERGY FUTURE

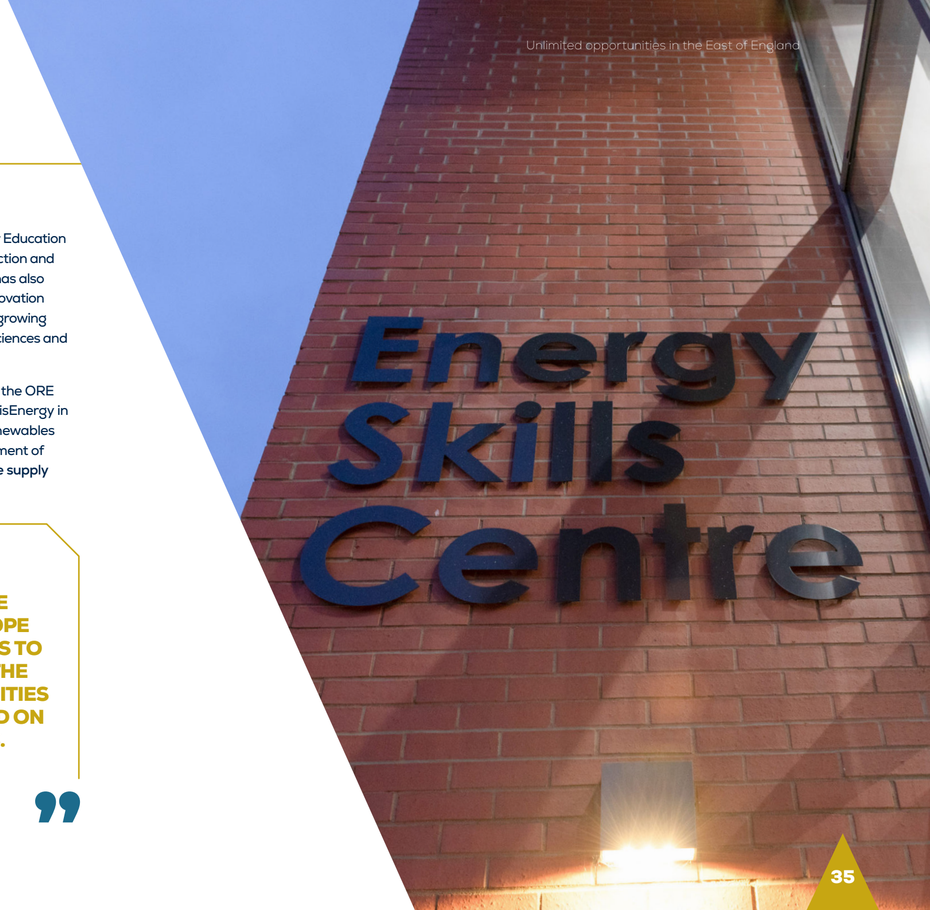
Among other activities, such as career event days, the Skills for Energy programme has helped establish new degree programmes in our region's universities and colleges and new technical training centres. For instance, University of East Anglia now offers BEng and MSc degree programmes in Energy Engineering and Energy Engineering with Environment Management. It is also opening the £4.4 million Productivity East industry hub that aims to develop engineering, technology and management skills and support business innovation and growth in the region.

Meanwhile, East Coast College, which offers a range of energy, engineering and electrical courses for the sector, has opened an Offshore Wind Skills Centre in Great Yarmouth and a new £11.7 million Energy Skills Centre in Lowestoft, supported by investment through the New Anglia LEP.

The New Anglia LEP is also funding a Nuclear Readiness Programme to help local businesses make the most of supply chain opportunities with Sizewell B and C. The project is facilitated by the National Skills Academy Nuclear (NSAN) with delivery through NSAN's Eastern flagship centre, West Suffolk College. The college offers a wide range of Apprenticeships and Higher Education programmes in engineering, construction and management. West Suffolk College has also opened a state-of-the-art STEM Innovation Campus in Bury St Edmunds, with a growing pipeline of students in engineering, sciences and digital technology disciplines.

New Anglia LEP is also working with the ORE Catapult (which has an office at OrbisEnergy in Lowestoft) on the Fit 4 Offshore Renewables programme to support the development of **competent, capable and competitive supply chain partners.**

> **"WITH SOME OF THE LARGEST OFFSHORE WIND PROJECTS IN THE UK, THERE IS HUGE SCOPE FOR LOCAL COMPANIES TO TAKE ADVANTAGE OF THE ECONOMIC OPPORTUNITIES THIS BRINGS AND BUILD ON REGIONAL STRENGTHS."**
>
> Andy Holyland
> Regional Innovation Manager for East of England, ORE Catapult



ENVIRONMENTAL SUSTAINABILITY

PROTECTING OUR ENVIRONMENT

Norfolk and Suffolk's commitment to integrated clean energy generation is not simply driven by economics but by our society's needs. As a low lying coastal region with many towns, villages and highly productive farms that are vulnerable to rising sea levels, we have a vested interest in preventing runaway climate change. We also want to protect our natural environment, which has created a nationally important landscape that is enjoyed by residents in all seasons and attracts more than 140 million visitors a year.

We have numerous designated protected environments, including Areas of Outstanding Natural Beauty (AONB) along the Norfolk and Suffolk coasts, National Nature Reserves, Sites of Special Scientific Interest (SSSIs) and other conservation zones both on and offshore. Quite a few of these ecologically important areas lie within the Broads National Park, which stretches across 300sq km of east Norfolk and north Suffolk. This is Britain's largest protected wetland, its third largest inland waterway and a globally important wildlife habitat.

Its rich mosaic of 7 rivers and 63 broads (all dug by humans) contains 14% of the UK's peat-land and is home to some 11,000 species, including around a quarter of Britain's rare birds, animals and plants. However, a 2013 report from the Tyndall Centre at the UEA, into the effects of climate change, predicted a 30-40cm rise in sea levels along our coast by 2100. That would lead to damaging tidal surges driving salt water deep into this freshwater system and destroying aquatic life that depends on it.

SCIENCE LED NATURE CONSERVATION

That is why organisations like the Norfolk and Suffolk Wildlife Trusts, and local Farming Wildlife Advisory Groups, are working closely with landowners and public bodies to protect vulnerable land and build rich habitat networks. Many farmers are also increasingly looking at decarbonising their operations by using no-plough and other regenerative agriculture techniques, not just to reduce costs but also to improve soil health and fertility. Others, like the Wild East alliance of landowners, are looking to re-wild large areas of land and so help sustain otherwise threatened wildlife.

Norfolk and Suffolk is also home to internationally renowned marine and environmental sciences research centres at UEA and Cefas. Working together, they aim to use innovative science and practical expertise to develop a whole-system approach to the sustainable use of the world's seas. For instance, they are currently working with local partners, including the energy sector, on further enhancing the regions capabilities as the UK's clean energy powerhouse, while promoting economically and environmentally sustainable activity in the SNS.

GREATER SOUTH EAST ENERGY HUB

The Greater South East Energy Hub (GSEEH) is a collaboration of eleven LEPs including New Anglia LEP, who are working together to increase the number, scale and quality of local energy projects being delivered across the greater south east region of England.

Local action is needed to transform our energy system and reduce carbon emissions. Local energy enables economies and communities to grow while limiting their impact on climate change.

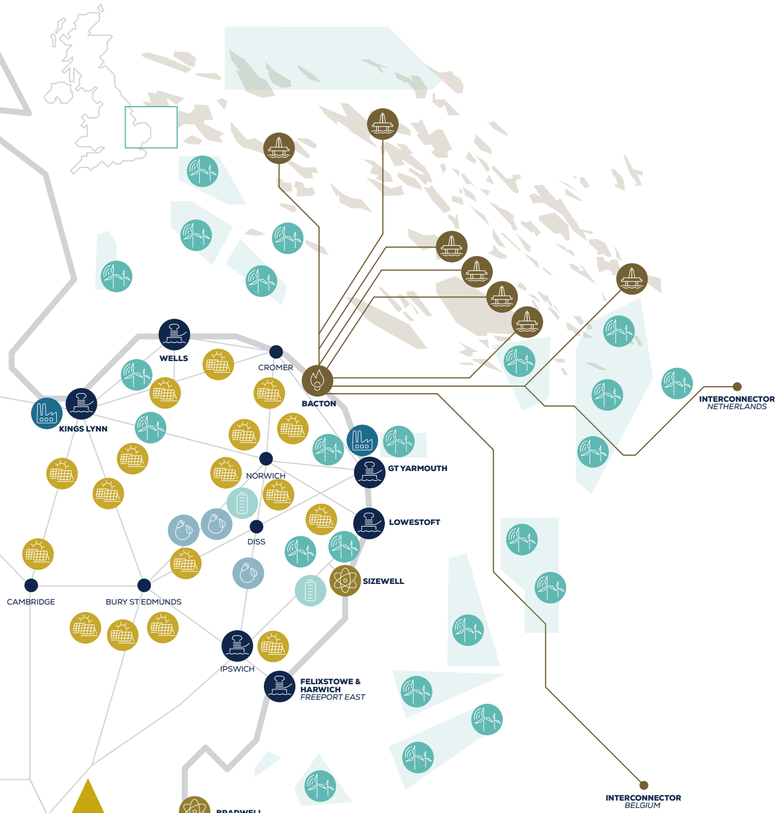
GSEEH's network of energy experts offers leadership on the economic, social and environmental benefits of local area energy and provides project management, technical support, and advice on finance and investment to help projects succeed. GSEEH also has access to a national network of learning and knowledge sharing on successful projects and business models.

info@energyhub.org.uk

GSEEH CURRENT PROJECTS

- **Energy efficiency**
- **Distributed generation**
- **Community energy**
- **Electric vehicle transition and charging infrastructure**
- **Off-gas properties**
- **Low carbon living and working**
- **Decarbonisation of heat**
- **Whole energy systems**
- **Grid constraints and infrastructure innovation**

Unlimited opportunities in the East of England



GENERATE

Unlimited opportunities in the East of England

GENERATE connects the UK's clean growth region to global energy investors by showcasing our unique energy offer, our highly skilled energy supply chain, and our unrivalled centres of innovation, research and science.

GENERATE and its partner network of committed energy professionals are here to drive clean growth and facilitate businesses to thrive in the UK's clean growth region.

GENERATE is a partnership founded by Norfolk County Council, Suffolk County Council, Great Yarmouth Borough Council, East Suffolk Council, North Norfolk District Council and the New Anglia LEP.

PARTNERS

EEEGR
EAST OF ENGLAND ENERGY GROUP

A membership organisation ranging from energy developers to supply chain companies. EEEGR is the voice of the East of England's energy sector providing knowledge support and opportunities to help their members' businesses grow.

office@eeegr.com

Norfolk & Suffolk Unlimited

Promotes Norfolk and Suffolk's world-class business offer globally to attract inward investment. It promotes the area as a place rich with investment opportunities focussed on our world-leading expertise and capability in clean growth, ICT/digital and agri-food sectors.

info@norfolksuffolkunlimited.co.uk

NEWANGLIA GROWTHHUB
for Norfolk and Suffolk

Led by the New Anglia LEP, and delivered in partnership with Suffolk Chamber of Commerce, New Anglia Growth Hub helps business access a range of free and impartial support services including access to grants, finance, start-up support and international trade support.

growthhub@newangliagrowthhub.co.uk

NEWANGLIA
Local Enterprise Partnership
for Norfolk and Suffolk

New Anglia LEP drives economic growth by securing public and private investment and delivering programmes with businesses, local authorities and education partners to improve infrastructure, skills and business support. ensuring businesses have the funding, support, skills, and infrastructure needed to flourish in Norfolk and Suffolk.

julian.munson@newanglia.co.uk

CATAPULT
Offshore Renewable Energy

ORE Catapult plays a key role in delivering the UK's Net Zero targets by accelerating the creation and growth of UK companies in the offshore renewable energy sector. Using its unique facilities and research and engineering capabilities to bring together industry and academia and drive innovation in offshore renewable energy.

andy.holyland@ore.catapult.org.uk

CONTACT

READY TO JOIN US?

We hope this Energy Prospectus has inspired you to explore the opportunities to develop your business in the UK's clean growth region.

GENERATE and its network of energy partners are here to help, providing the information, connections and advice to support your investment decision.

Find out how we can help your business to thrive.

CONTACT

generate-energy.co.uk

info@generate-energy.co.uk

@generateeast

GENERATE

All information correct at time of going to print
July 2021


GENERATE
Unlimited opportunities in the East of England
generate-energy.co.uk
info@generate-energy.co.uk