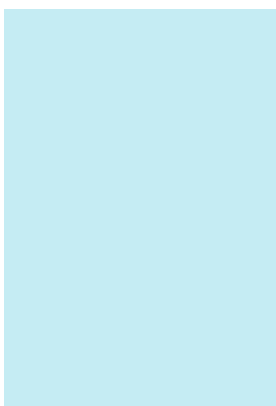


NORTH SEA TRANSITION DEAL (NSTD) SUPPLY CHAIN CHAMPION REPORT

Building on a UK strength



Sian Lloyd Rees – NSTD
Supply Chain Champion



Building on a UK strength

North Sea Transition Deal

Supply Chain Champion Report

Sian Lloyd Rees

There is a technology-rich supply chain in the UK which underpins the oil and gas industry and supports the jobs of up to 200,000 people. The companies in it range from the small-medium enterprises, up to the engineering, procurement and construction turnkey contractors. Having spent most of my career in the energy industry, both in oil and gas supply chain companies and as a wind farm developer, I'm a firm believer that building on the highly relevant solutions developed for the oil and gas sector will enable us to make faster progress towards the UK's clean energy ambition. Equally important is the proven credibility of this industrial strength in globally competitive markets.

I was delighted to accept the role of 'Supply Chain Champion' affiliated to the UK government and Offshore Energies UK (OEUK) as part of the North Sea Transition Deal (NSTD), which includes enabling the supply chain to support the energy transition as one of its priorities.

The work undertaken by Robert Gordon University (RGU)¹ and Rystad Energy² has enabled us to better quantify the significant opportunity and relevance of existing oil and gas solutions to future energy sector needs. The actions needed are outlined in this report, which has benefited hugely from the support provided by Katy Heidenreich, OEUK's director for the supply chain and people; and the wider OEUK team.

Some additional reflections from my time as 'supply chain champion' include:

- **Promotion** - The UK's oil and gas supply chain's capabilities and their relevance to the broader energy sectors are not well understood and the UK government no longer provides overseas support for companies operating in oil and gas. Other countries, notably Norway, are successfully marketing their supply-chain capabilities globally. A more effective approach for the UK should be considered when energy supply chains are in transition.
- **Prioritisation** - There are limited funds available in the UK to build industrial strength for the energy transition underway. The oil and gas supply chain is a highly efficient, well integrated ecosystem where funding support could quickly permeate, creating quick and effective value growth. Focussed investment in proven and highly relevant solutions would ensure more efficient use of funding and further de-risks renewable energy projects. This in turn has the potential to attract cheaper capital and inward investment to deliver a faster return on investment.
- **Pace** - Given uncertainties in the scale and timing of renewable energy and a declining oil and gas industry, the supply-chain opportunity will be most easily realised with early support from government and industry. For a supply chain well versed in competing in international markets, the support can be broad based, light of touch and for a relatively short duration, drawing on established governance and delivery models for a faster ramp-up.

¹ oilandgasuk.cld.bz/Harnessing-the-potential-Supply-Chain-Transformation-Report/14/

² oeuk.org.uk/product/uk-og-supply-chain-opportunities-in-the-energy-transition/

Executive Summary

The production decline in a mature basin is making it harder for the oil and gas supply chain to find work here in the UK. By contrast, the wave of investments in new energy is significant and opportunity is developing in new directions. By 2026 the UK will spend more on offshore renewable energy sources than on oil and gas.

Rystad Energy compared the oil and gas supply chain's present capability with future energy needs to quantify the size of the market that is accessible to it.

GROWTH is expected in current oil and gas supply chain capabilities in three main segments:	RELEVANCE of oil and gas capabilities to develop and service needs in new energy sectors:	GLOBAL accessible market for oil & gas supply chain
<ul style="list-style-type: none"> • 4% /yr growth in equipment and materials 	<ul style="list-style-type: none"> • 57% overlap in floating wind 	<ul style="list-style-type: none"> • £100bn in floating wind
<ul style="list-style-type: none"> • 6% /yr growth in engineering and construction 	<ul style="list-style-type: none"> • 80% overlap in hydrogen 	<ul style="list-style-type: none"> • £590bn in hydrogen
<ul style="list-style-type: none"> • 3% /yr growth in logistics and vessels 	<ul style="list-style-type: none"> • 83% overlap in CCS 	<ul style="list-style-type: none"> • £470bn in CCS

The significant and broad relevance of the oil and gas supply chain's solutions to our net zero ambitions are better defined. The supply chain will need to adapt, maintain and renew skills, which is a challenge when operating in a rapidly declining UK sector with predominantly low-margin, operational spending. Consequently, our world-class capabilities are moving to overseas markets.

Furthermore, oil and gas technology investment generally tends to happen in the early project phases. By contrast, renewable energy projects are confirmed relatively late in the development cycle, with less time for project specific innovation. The typical early investment signals for a supply chain – market scale in a predictable timeline – are also missing. Recognising this challenge, the governments of other regions are investing at scale to build industrial strength in renewable energy ahead of the global market evolving.

The UK has an opportunity to gain an early advantage by rebuilding and adapting a current supply chain capability. The UK could gain an early advantage by investing in proven technologies, which coupled with its stringent climate change policy, should de-risk projects and attract cheaper capital. It would require less upfront investment and when this is provided in the form of concessional capital, through a range of UK government funding mechanisms, companies can benefit from support in areas including R&D and business growth. This creates the right environment for companies to select the innovations that will best deliver competitive advantage, which helps as a catalyst for further flows of private investment.

A £50m government investment spread over five years, rising to £150m with matched developer and supply chain funding, should be established in 2024 and ringfenced to support the transition of the oil and gas supply chain. Renewable energy developers have already committed to investing in local content growth as part of the wind sector deal and NSTD. Creating strong, skilled, and innovative supply chains is in all parties' best interests and the government signaling its early priorities for investment will facilitate a collaborative focus.

Timing remains a challenge and the government funds should be re-purposed from an existing, approved budget and distributed through established funding mechanisms which include a tailored mix of grants, low interest loans and equity investments for maximum flexibility. An independent board should be established to oversee the programme, provide robust governance, and ensure the funds are used effectively. This is a model successfully applied in other industries. The board should include representation from the North Sea Transition Authority (NSTA), Offshore Energies UK (OEUK), renewable developers, supply chain members, academia and the UK government. The programme should be delivered by a dedicated team from the Net Zero Technology Centre (NZTC) and Offshore Renewable Energy ORE Catapult and engage with the energy transition zones across the UK.



Introduction

The UK has increased its ambition to operate 50 GW of wind energy, 10 GW of energy from hydrogen and up to 30mn tonnes/yr of CO₂ to be captured and stored by 2030. The UK was an early adopter of renewable energy developments, putting policy levers in place to attract inward investment and ramp up its wind energy developments to its current 30 GW of installed capacity.

Hitting the UK's revised net-zero emissions targets will be harder unless grid access and permitting is faster, project investment decisions are taken sooner and the commercial arrangements are attractive. Typically supply chains thrive on large, predictable opportunities in their customer base that stimulate investment in solutions and services.

Great British Energy is being established by the government as a publicly owned, clean-energy company to address some of these challenges and it will also invest in the industries of the future to create jobs. This focus is needed as the UK's early market success in growing wind energy was not replicated in terms of building an underpinning industrial capability across the UK, and international supply chains benefited. The UK is competing for resources in a global marketplace and other countries are already developing an industrial capability ahead of the market scaling to de-risk solutions and attract cheaper capital³.

There is an energy supply chain in the UK servicing its oil and gas sector. It employs up to 200,000 people and many of the companies already provide services to broader energy sectors. Spending in oil and gas has become mainly operational and low-margin, which is a further challenge to the resilience of the supply chain and its ability to invest in new market opportunities when project commitments and timelines are not always clear.

During my period as supply chain champion and in conjunction with OEUK, we focused initially on quantifying the opportunity for the oil and gas supply chain to transition its technologies and capabilities to support renewable energy generation, both in terms of market size and relevance of the solutions. Research by RGU and Rystad Energy confirm that the UK's technology-rich oil and gas supply chain will see many more opportunities emerge from floating wind, hydrogen and CCS.

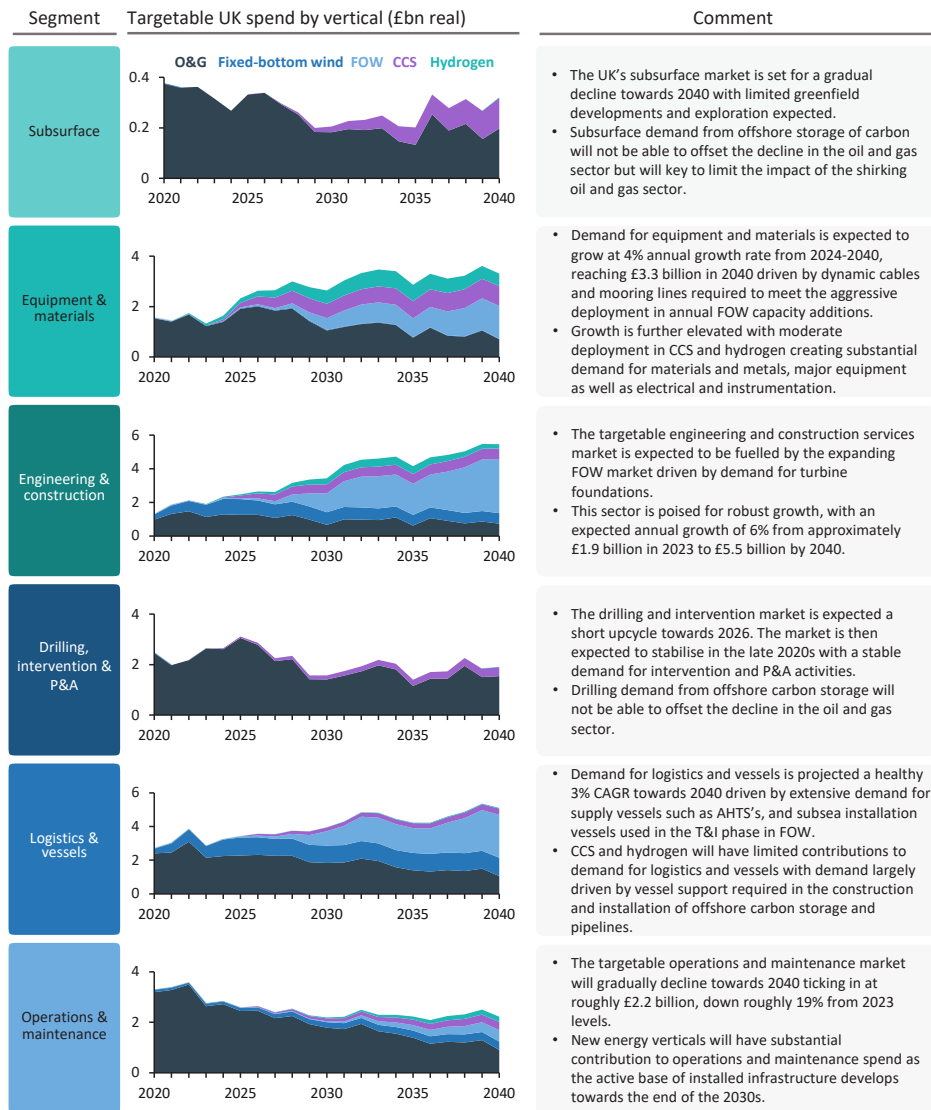
Realising these opportunities will depend on early investment in developing, maintaining and adapting capabilities for new applications. In the current economic climate and without an element of intervention, as seen in other economies, enterprises will pursue opportunities elsewhere.

³ home.treasury.gov/policy-issues/inflation-reduction-act
[commission.europa.eu/strategy-and-policy/priorities-2019-2024/
european-green-deal/green-deal-industrial-plan_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/green-deal-industrial-plan_en)

Promotion – The supply chain opportunity is significant and global

Knowing which segments of the new energy sectors the oil and gas chain could effectively target, how big the UK market demand is, and which links in the supply chain will prove the most effective – these are all key to understanding which technology and skills need priority investment. Rystad Energy undertook to quantify and categorise, on behalf of OEUK, the oil and gas supply chain’s capability and to map it across demand in new energy sectors. This lays the foundations for more dependable investments and government support.

UK supply chain growth largely based on three segments



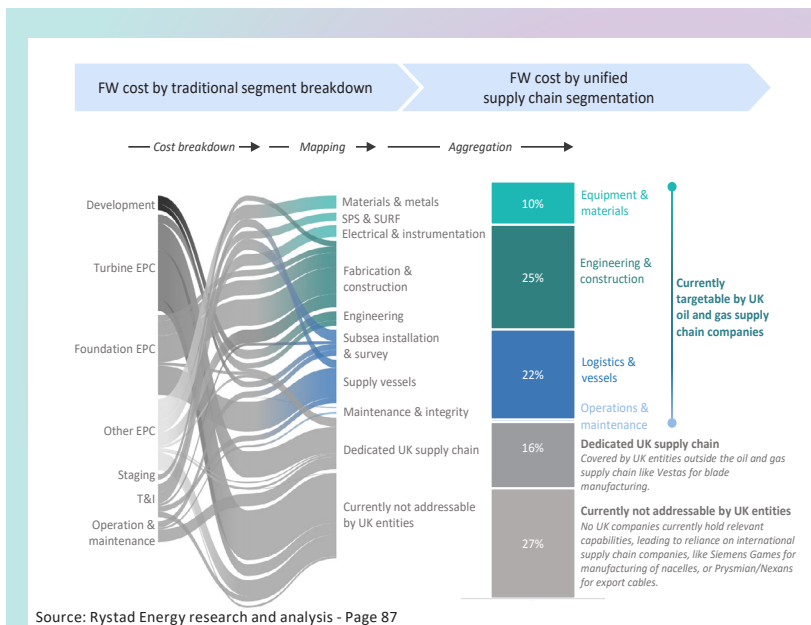
Source: Rystad Energy research and analysis - Page 37

The potential growth for UK oil and gas supply chain companies in the new energy sectors is concentrated in three broad segments:

- Equipment and materials: demand is expected to grow 4%/yr driven by dynamic cables and moorings;
- Engineering and construction services are expected to grow 6%/yr driven by offshore wind;
- Logistics and vessels: demand is expected to grow 3%/yr driven by offshore wind.

As can be seen from the diagrams below, the potential for the oil and gas supply chain is higher in CCUS and hydrogen, but the initial growth opportunity in the UK will be in offshore wind as developments are underway and scaling up. The opportunity for storing CO₂ in depleted fields should be brought forward as the UK not only has excellent reservoir management skills, but also a fleet of drilling rigs that will otherwise become stranded assets.

Floating Wind

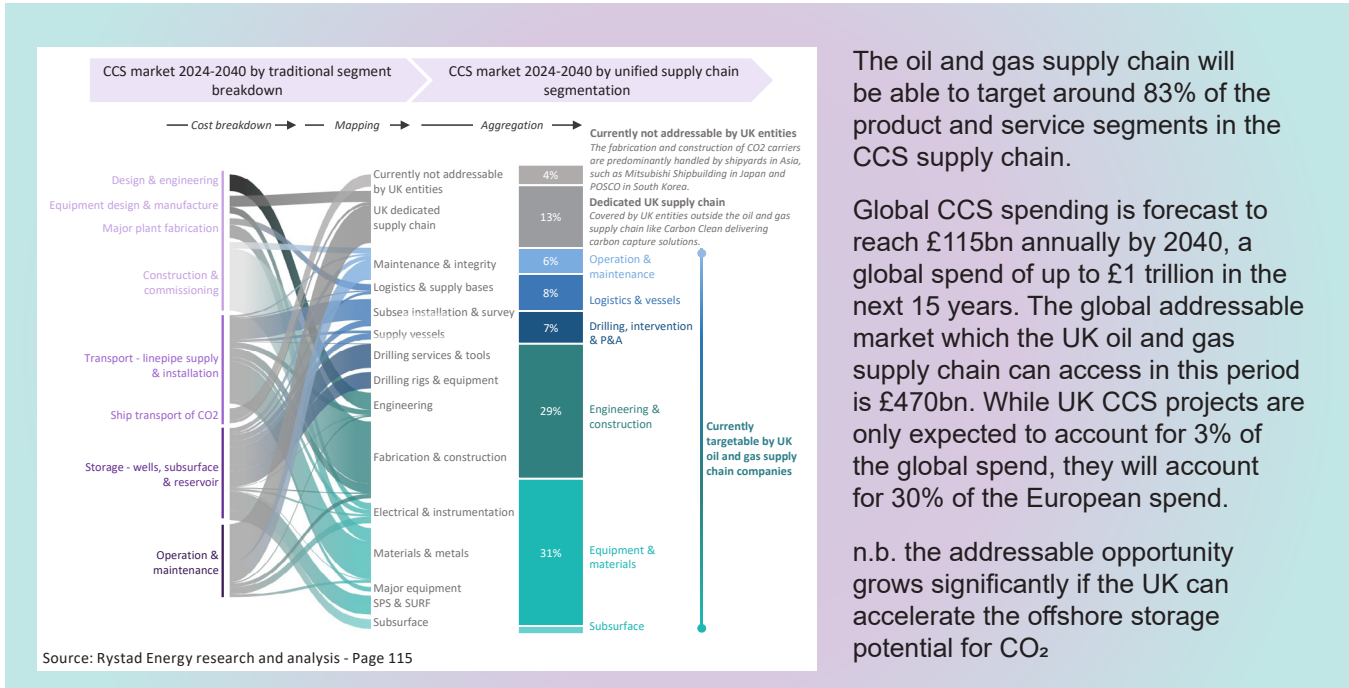


The oil and gas supply chain will be able to target around 57% of the product and service segments needed for floating wind (FW) projects.

Global cumulative offshore wind capacity is expected to reach 275 GW by 2030.

The global addressable market spend which the UK oil and gas supply chain can access in this period is £100bn.

CCS

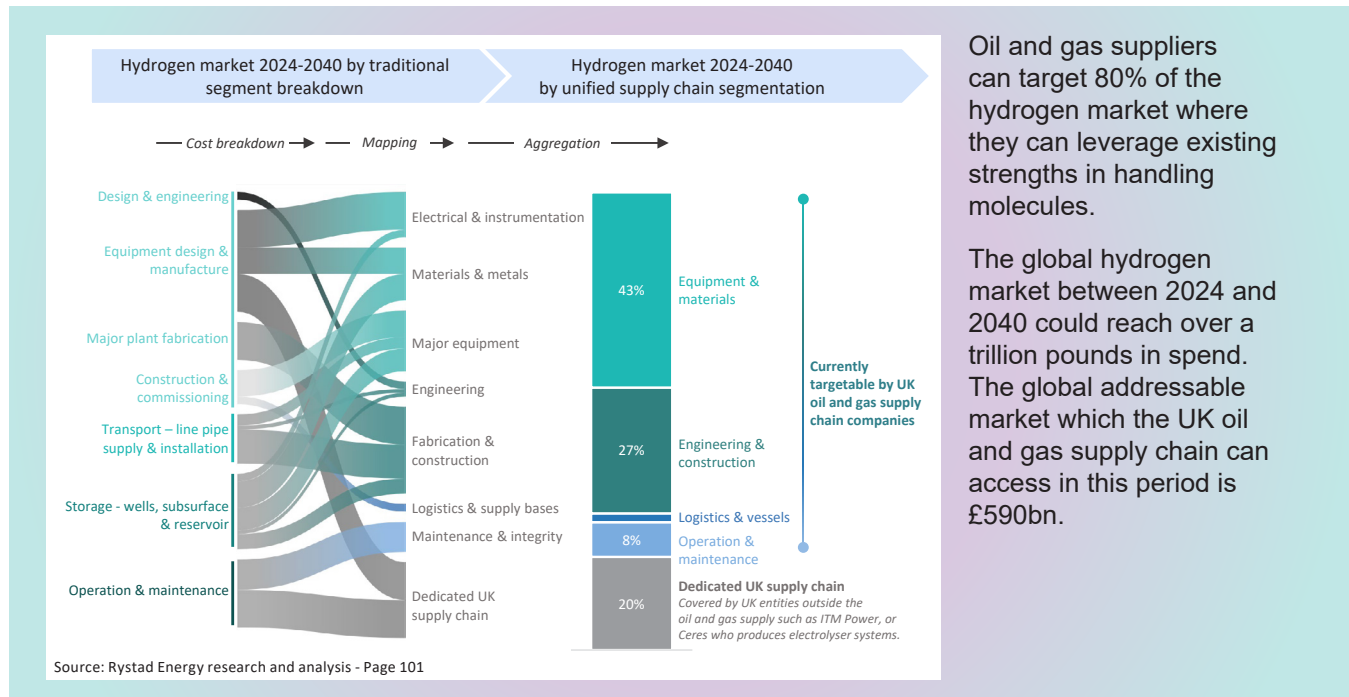


The oil and gas supply chain will be able to target around 83% of the product and service segments in the CCS supply chain.

Global CCS spending is forecast to reach £115bn annually by 2040, a global spend of up to £1 trillion in the next 15 years. The global addressable market which the UK oil and gas supply chain can access in this period is £470bn. While UK CCS projects are only expected to account for 3% of the global spend, they will account for 30% of the European spend.

n.b. the addressable opportunity grows significantly if the UK can accelerate the offshore storage potential for CO₂

Hydrogen



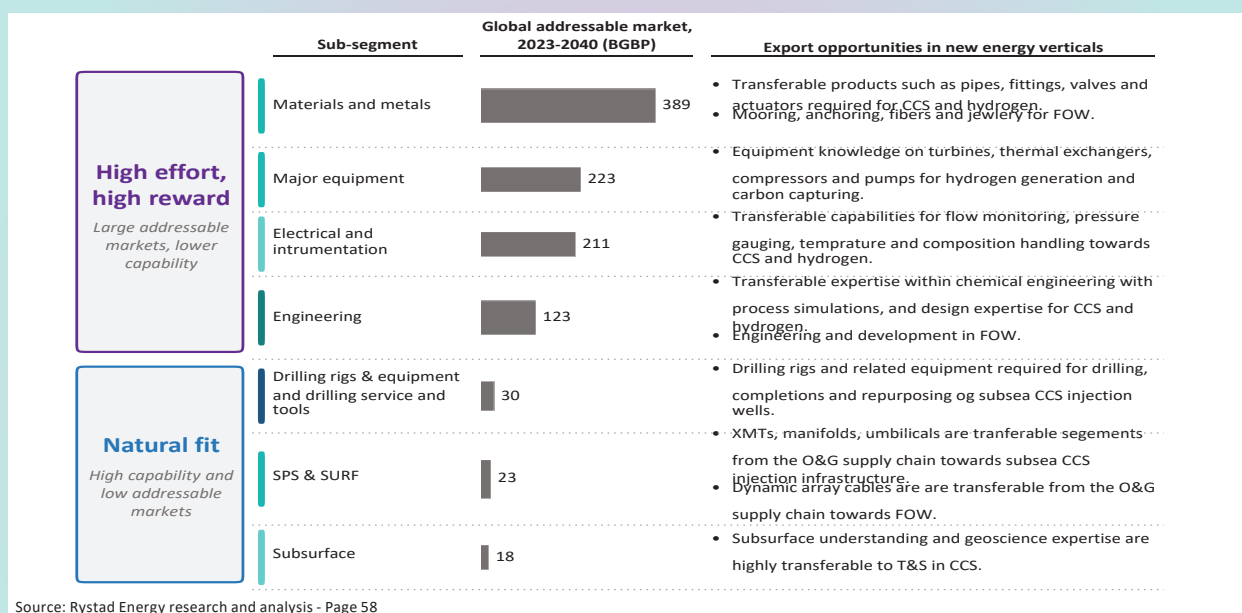
Oil and gas suppliers can target 80% of the hydrogen market where they can leverage existing strengths in handling molecules.

The global hydrogen market between 2024 and 2040 could reach over a trillion pounds in spend. The global addressable market which the UK oil and gas supply chain can access in this period is £590bn.

While the overseas expansion of new energy sectors affords export opportunities for UK oil and gas supply chain companies, they can also apply their strong capabilities to specialist, niche areas serving larger markets.

Major equipment spending will be upwards of £200bn from 2023 to 2040 and industrial equipment such as thermal exchangers, compressors, pumps and turbines will be in high demand. Companies with their roots in the oil and gas supply chain will be in the market to supply many of them.

Oil and gas supply-chain activities include services related to drilling: subsea production systems and subsea umbilicals, risers and flowlines; services for the transport and storage



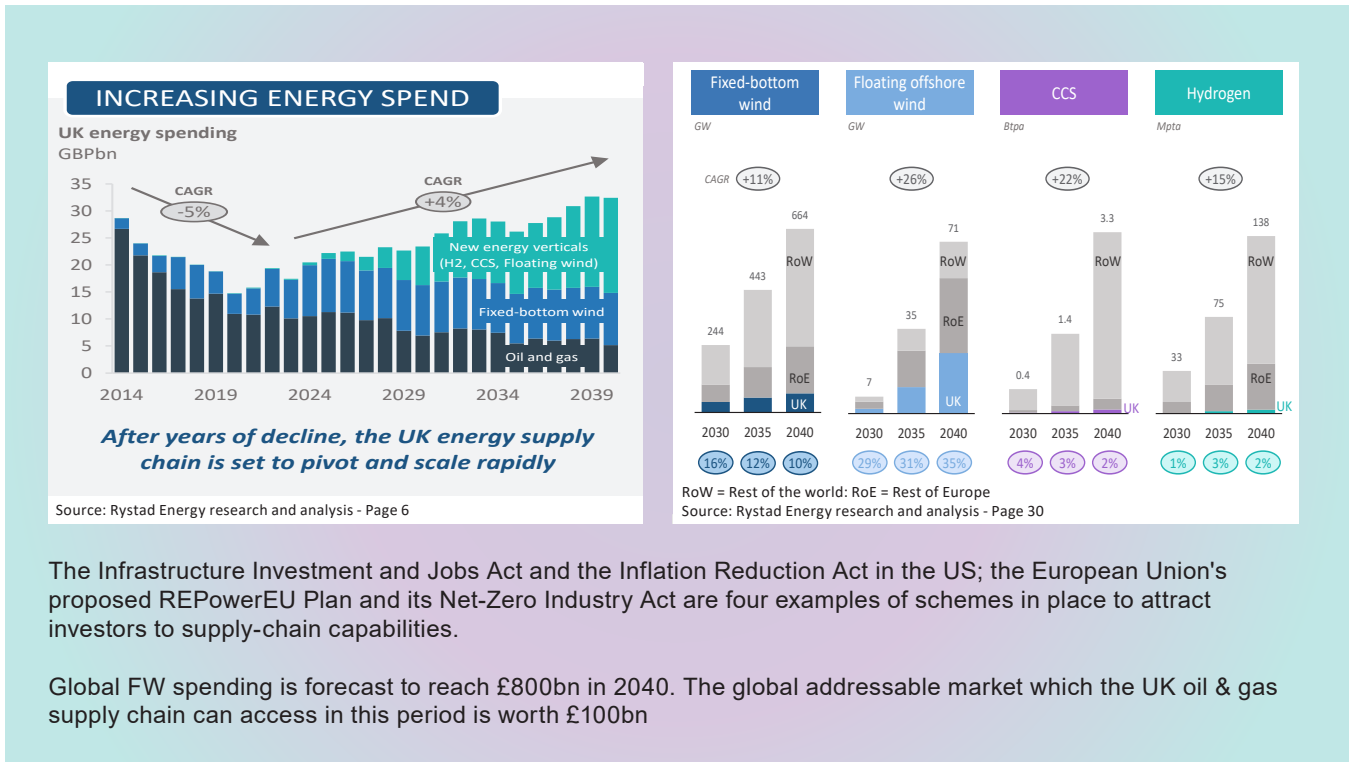
The materials and metals segment make up the largest addressable market globally, worth up to £400bn across hydrogen, CCS and floating offshore wind. This segment includes pipes, fittings, valves, actuators required largely in the CCS and hydrogen sectors; and mooring, anchoring, fibre ropes, and jewelry for floating wind. It is a highly relevant and significant opportunity for oil and gas companies in the UK today.

elements of CCS; and manifolds, Christmas-trees and other infrastructure for CCS injection wells. Dynamic array cables in floating wind also offer opportunities in an export market worth some £5bn/yr.

Underpinning all of the above is the UK's robust tradition of engineering, procurement, construction and installation work which will help to win contracts overseas.

Prioritisation – The need for action is pressing

OEUK engaged with RGU to build a data visualisation tool. It shows that after years of decline, the overall UK energy supply chain is set to grow in new directions. This wave of new energy investments is a chance for the oil and gas supply chain to enhance its capabilities and diversify its revenue streams globally, not just in the UK.



Oil and gas investment in the UK continues to shrink: by around 2026 it will be less than the investment in offshore renewable energy developments. But, floating wind, CCUS and hydrogen will not ramp up appreciably until 2030. Globally, things move rather faster, highlighting the need to support the oil and gas supply chain by 2024 to enable access to overseas markets.

While the UK has the potential to accelerate the ramp up of floating wind more quickly than other regions, CCS and hydrogen development are lagging behind other regions. Even where there is ongoing supply chain strength today, such as in subsea construction and surveying work, further scaling is needed to meet the expected demand.

However as oil and gas investment declines faster than originally predicted, the resilience of the associated supply chain weakens and investment in new and adapted solutions becomes less feasible. This gap needs to be bridged for the UK industry to grow as much as it could.

Pace - Intervention should be early, light-touch and time-bound

Industrial growth plans for broader infrastructure and manufacturing are needed but will take time to mature, while action is needed now to retain capability in the UK's energy supply chain.

A portfolio of net zero innovation funding mechanisms already exists in the UK, including for research and development (R&D) and the Green Investment Growth Accelerator (GIGA) fund to build manufacturing capability. The UK government also established streamlined routes in 2023 to support broader economic growth that aligned with the government's strategic priorities in innovation, clean energy and local growth. Great British (GB) energy is currently being established and will also invest in industry to create jobs.

Each investment mechanism serves a slightly different purpose, with the oil and gas supply chain already applying where appropriate. However the conditions under which individual funds are awarded are not necessarily compatible with the requirement to adapt, extend and standardise existing technologies and solutions collaboratively across a broad supply chain, where the interdependencies of solutions have often delivered the greatest benefit.

The focus should be on establishing a short-term funding mechanism tailored to the oil and gas supply chain's needs and into which government, developers and the supply chain all contribute funds equally. Adopting an agile methodology will allow for quicker adjustments and iterations, helping the supply chain to adapt to new challenges and opportunities more effectively without the need for long term investment.

Adopting a matched funding approach, whereby government commits £50mn and developers and supply chain each match the amount invested by government creates an initial £150mn fund and attracts further inward investment. The government could finance its share by repurposing some of the money it has already committed and budgeted to the energy transition. The NSTD and the government's wind sector deal already commit developers to 50% local content in their UK operations by 2030 and they are willing to invest. Aligning priorities across government and industry facilitates the collaboration needed.

The UK government has extensive experience in the design of funding mechanisms to ensure accountability and compliance in public-private partnerships. An existing mechanism should be adopted and a governance model similar to that adopted by the Offshore Wind Growth partnership (OWGP) could be used to administer the fund, as it is both proven and agile.

Specifically for the oil and gas supply chain, the collaborative fund, £150M spread over 5 years, should be governed by an independent board with representation from NSTA, OEUK, renewable energy developers, supply chain members, academia and the UK government. Companies apply directly to the board for funding, the board selects the proposals meriting investment and a dedicated team from NZTC/OREC provide programme management expertise, engaging with the energy transition zones across the UK where appropriate.

⁴ www.gov.uk/government/publications/subsidy-control-act-2022-streamlined-routes



RECOMMENDATIONS

- The recommendation is for £50mn of pre-committed net zero government funding to be re-purposed and ringfenced to support the oil and gas supply chain transition. This funding model is predicated on developers and supply-chain companies each matching the amount invested by government, raising the initial amount available to £150mn.
- The fund is spread over five years, commencing in 2024, and should include a tailored mix of grants, low interest loans or equity investments for maximum flexibility. An appropriate public/private grant funding mechanism should be applied.
- The fund should be governed by an independent board with representation from NSTA, OEUK, renewable developers, supply chain members, academia and the UK government. Companies apply directly for funding, the board selects the propositions to invest in and programme management support is provided by a dedicated team from NZTC/OREC, engaging with the energy transition zones across the UK.
- SME inclusion in propositions and jobs based in the UK for at least five years are conditions of award. Prioritisation should be based on market potential and UK strength.
- My role as NSTD supply chain champion benefited greatly from its affiliation to the UK Energy Minister and OEUK, providing both insight and early participation in discussions regarding industrial growth and the relevance of the oil and gas supply chain in its achievement. It's key that the role continues in its current form for the next 2-3 years as we gain pace in the energy transition.
- Government bodies such as the Department for International Trade and UK Export Finance should play a bigger role in the overseas promotion of the UK's oil and gas supply chain capabilities, as they pertain to the broader energy transition.

Explanatory note: the North Sea Transition Deal is a collaborative effort between the UK government and the offshore oil and gas industry as they work towards a net zero emissions future. It is based on achieving five outcomes, one being the enablement of a technology and solution rich oil and gas supply chain to support the energy transition. The NSTD Supply Chain Champion role was created to drive action and engagement to ensure the UK supply chain is optimally positioned to take advantage of the emerging opportunities.



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info@OEUK.org.uk

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