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Look ahead: Energy

The road to responsible growth

How to navigate the energy transition: aligning growth with purpose and decarbonisation

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Responsible growth for energy

While events such as the COVID-19 pandemic and the war in Ukraine are first and foremost human tragedies, they have also caused significant economic shocks, exacerbating pre-existing turmoil in the energy markets and adversely affecting businesses, supply chains and the cost of living.

All this is set against a backdrop of the net zero agenda and the need to address climate change. Energy markets are reeling from disruptive forces just at the time when we need to be redoubling our efforts to decarbonise our economies and societies.

It is difficult to envisage a more challenging and complex operating environment, with some sector players benefiting while others are facing financial distress. Critically, energy companies themselves are at different stages along the transition journey and therefore each faces a different challenge. For example, there are oil and gas companies shifting to low carbon plays, as well as utilities which are already well entrenched in renewables. However, all players will need to re-assess their strategic focus given a rapidly evolving energy market.

How should businesses, governments and investors respond? And what will that mean for responsible growth plans and long-term decarbonisation?



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The case for change

The energy sector must chart a path to recovery and growth which reflects the needs of shareholders and wider society.

With the growing awareness of reaching net zero, the energy sector is under increasing pressure to show it can balance growth with decarbonisation. The supply and price pressures growing in 2021, exacerbated by the Ukraine crisis, has forced energy security into this difficult mix.

This will be a complex balancing act for governments and energy corporates alike. For the former it is about sustainability, security of supply and affordability. For energy corporates it is about reducing emissions, growing low carbon production and delivering attractive and sustainable shareholder returns.

And the clock is ticking, as the speed of transition accelerates. It is not about delivering progress by 2050 but by 2030! The [IPCC Sixth Assessment Report](#) clearly states if global warming is to be limited to 1.5C, this will require a 43% cut in global greenhouse gas emissions by 2030.

Given the complexity of this challenge and the need for pace, energy corporates will have to review strategies, develop talent, advance partnerships and collaborate with government. All this will need to be done while addressing societal pressures to meet environmental social and governance (ESG) criteria.



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Levers for responsible growth

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As society manages through the transition, the complexity of change is manifesting itself across several dimensions, such as:

1. Affordability

Growing demand for oil and gas since 2021, combined with constrained supply, are exerting upward pressure on energy commodity prices. As a result, rising electricity and gas bills will impact the most vulnerable in society. In the UK, the energy price cap was raised in April 2022 by over 50%, with further increases expected. Drivers of petrol and diesel cars are also seeing fuel prices hit historic highs.

Commodity price increases are likely to persist in the medium term, with high prices expected throughout 2022. And some of the structural challenges facing supply in global oil and gas are unlikely to relent in the medium term, keeping upward pressure on prices.

Affordability will be top of mind for the Government as it charts future policies, as well as for companies bringing new products and solutions to market.



2. Resilient supply

The importance of resilient supply has been amplified by the war in Ukraine and the resulting sanctions against Russia, which previously accounted for approximately 10% of global oil production and around 40% of Europe's natural gas imports.

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The [UK Government](#) released a new energy strategy highlighting the medium term importance of North Sea hydrocarbons, as well as ramping up low carbon sources, such as offshore wind and nuclear. The UK is already on this journey and has made significant progress with over 11GW of offshore wind capacity already installed. With the offshore target raised from 40GW and now to 50GW by 2030, new ways of thinking are needed to accelerate the scale up. Several European governments also acknowledged the need to restart coal and oil-fired power generation, should gas supplies be disrupted.



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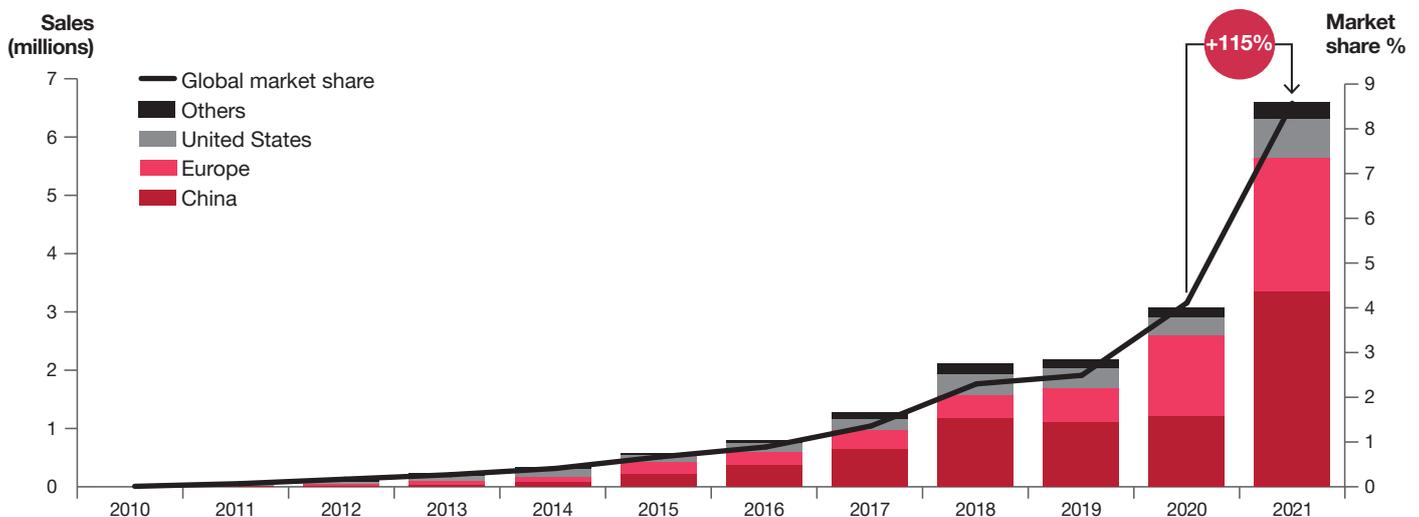
While the road to net zero by 2050 remains visible, such measures would represent a significant deviation from the central decarbonisation pathway envisaged just a few months ago; however, it remains to be seen whether this is sufficient to keep the UK on course to meet its net zero target. Different pathways will be adopted in different markets depending on their starting point and access to alternative energy sources and reliance on imports and affordability. There is no single ‘one size fits all’ solution.

3. Decarbonisation

The other element of the transition is the need to decarbonise. The initial wave of sector decarbonisation, focused on power generation, has made real progress. For example, 40% of the UK’s power generation capacity is now sourced from renewables. The UK Government is also targeting a decarbonised grid by 2035. We shall see an increasingly important role for nuclear power in the UK as the only stable baseload low carbon fuel currently available, given the intermittency of renewables. However, large scale nuclear will take time to bring to the market. But given its importance to electricity generation (it contributed 16% to UK power in 2020), progress to grow its share is welcomed.

The electrification of road transport represents the second wave of decarbonisation, which is well underway. As illustrated in Figure 1 (below), global sales of **electric vehicles are rising**, reaching about seven million in 2021 – just shy of 10% of total global car sales.

Figure 1: Global sales of electric vehicles



International Energy Agency (IEA)



The third wave of decarbonisation, focused on heating and industry, will be harder to address.

It is likely we will see a portfolio of low carbon solutions for heating, including a scale up of heat pumps and potentially some use of hydrogen. Heat pumps are efficient and have proven popular solutions for residential and commercial heating in countries such as Norway and Sweden. In the UK, where much of the housing stock is old and draughty, homes must be better insulated before deploying this technology. Moreover, installation costs for heat pumps are high and the supply chain is still evolving. Hydrogen for residential heating is currently undergoing a number of trials; rolling it out at scale would require significant investment in production and distribution infrastructure.

Industrial production will also be hard to decarbonise. Heavy industries such as refining, cement production and steel manufacturing, for example, are all energy-intensive processes for which the decarbonisation pathway is not yet clear. In the UK, hydrogen, combined with carbon capture technologies, is being positioned as the solution for key industrial clusters, such as Net Zero Teesside, ZeroCarbon Humber and HyNet North West.

The transition will require energy firms to manage a delicate balancing act as they transform: upskilling their workforce to become digitally enabled; redeploying people and operations to decarbonising industrial clusters; developing new low carbon technologies; and helping foster supply chains to deliver the projects.

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What to do next

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Either way, energy corporates will need to articulate their purpose and strategic pathway to 2030, what their right to win is and how this strategy will reshape portfolios and business structures. Progress needs to be measured and corporates must communicate this strategy enterprise-wide and to the market for shareholders and broader stakeholders.”



Items on the responsible growth to-do list, which stakeholders should consider, include:

Review and align purpose and strategy

Energy corporates will need to revisit their strategy and governments their policies and regulation in light of recent events. Both will have to evaluate measures to take to meet the 2030 decarbonisation objectives and assess whether it is enough. And for government these steps will be balanced against affordability considerations and for corporates against shareholder expectations.

As already referenced, the British Energy Security Strategy is a response to this challenge.¹ The investment required by the UK Government to meet its low carbon targets will be significant. To realise these targets will require a centralised approach to ensure there is a clear pathway to deliver on the objectives, underpinned by government support where needed, to allow capital from the private sector to drive the transition. Moreover, a degree of co-ordination is called for between government – both central and local – as well as the regulator, industry and investors rarely seen before.

For energy corporates, it is partly about replacing revenue by transitioning into alternative low carbon sources of production, new products and services. For others who already have a well established presence in this market, it is about considering new revenue and profit pools to broaden the decarbonisation offering. Either way, energy corporates will need to articulate their purpose and strategic pathway to 2030, what their right to win is and how this strategy will reshape portfolios and business structures. Progress needs to be measured and corporates must communicate this strategy enterprise-wide and to the market for shareholders and broader stakeholders.

1. PwC shared its insights on the security strategy in a [press release](#).



Nurture talent

Developing and communicating the strategy to address the transition will be key to attracting and retaining talent. Businesses will need to develop a portfolio of capabilities – from energy specialists to software engineers and climate change experts – while building diversity of thought across organisations to foster new ideas and innovation.

But recruitment will not always be the answer. Partnering with other companies in the energy transition is another way to access talent and build capabilities.

In other sectors, sizable investment has gone into university and talent programmes. For example, [the University of Sheffield Advanced Manufacturing Research Centre](#) is a partnership between industry and academia, specialising in advanced machining, manufacturing and materials for aerospace and other high-value manufacturing sectors.

EDF, meanwhile, uses a sponsored nuclear university programme to create its own [talent pool](#).

Embrace partnerships to develop capabilities in pursuit of net zero

Government partnering with business will be a key combination in the energy transition, a reality reinforced by the UN's COP26 climate summit.

The UK Government's net zero strategy provides a clear policy framework for the delivery of net zero but it is complex and requires many actors. Challenges include the development of the grid system to allow it to cope with a range of different and more localised energy sources, as well as the scale and diversity of the investment required across a variety of different decarbonisation solutions.

Both government and industry have a strong track record of success in partnerships. The UK Government is playing an important role in catalysing funding to accelerate decarbonisation. Success in UK offshore wind, where capacity grew from zero to approximately 11GW, shows how private capital can be mobilised once the risk/return profile is set and understood.

As for industry, energy corporates have long used partnerships to build capabilities and syndicate financial / technical risk. These partnerships will increasingly be brokered with government, at the central and local level, from decarbonising industrial clusters to building electric vehicle charging infrastructure. Moreover, partnering will transcend sectors, such as allying with technology, retail and service companies to foster innovation.

Understand risk and returns in a fast developing market

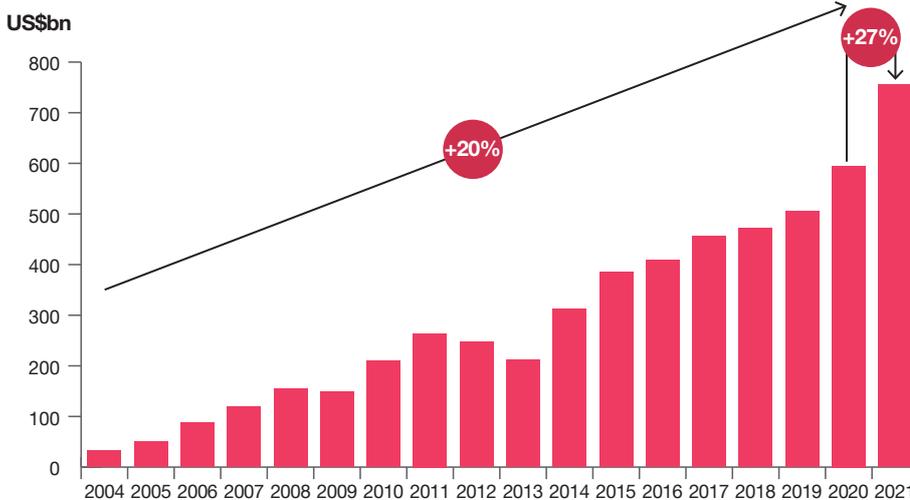
The concept of partnering is also a key element in de-risking transition investments. Furthermore, access to capital will underpin all aspects of the transition from sustainability and energy security to affordability.

Multinational companies and institutional investors have a major role in providing the capital needed to scale up low carbon technologies and make them commercially viable. As shown in Figure 2, global investment in the energy transition nearly reached **\$800 billion in 2021**.



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Figure 2: Global investment in energy transition – 2004-2021



Source: BloombergNEF



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There is no shortage of capital; the challenge is matching the right investor to the right project, technology or company. The energy transition has created an explosion of different business models with different risk profiles in an industry which traditionally has been dominated by capital-intensive production and regulated network infrastructure.

This means there is now something for everyone in this market: from asset-light technology businesses to the next generation of hydrogen infrastructure and everything in between. And many of these segments are developing rapidly – the perceived risk profile of electric vehicle charging infrastructure, for example, is decreasing rapidly, with some high quality businesses now attracting long term, lower risk capital that wouldn't have been interested only a year or two ago.

Investors looking to participate in the energy transition need to understand how these markets will develop; the transition provides an opportunity to deploy significant amounts of capital to match risk return profiles.

The next few years will be pivotal for governments and energy corporates as they address the complexity of the managed transition. As countries ramp up their ambitions in low carbon technologies, significant capital and technical expertise will need to be deployed at pace and scale. This will require extensive partnerships and co-ordination across government and industry. Marshalling this resource will require bold strategies, strong innovation and deep capabilities.

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