

## OIL &amp; GAS SECTOR

# The reality of net zero?

**Q**uickly accelerating from a walk into a gallop is never easy, but it is possible. That is what major energy companies are trying to do – and not a moment too soon. A brief look at the news headlines reminds us that environmental pressures worldwide are rapidly intensifying. BP's Chief Executive Bernard Looney captured the gravity of change required in one sentence: 'Providing the world with clean, reliable, affordable energy will require nothing less than reimagining energy.'

And BP certainly appears to be standing by that. Along with committing to being net zero by 2050, the announcement in early August that it has upped its targets again came a month earlier than anticipated. Among many targets, BP has committed to a 10-fold increase in low-carbon investment by 2030, with up to an eight-fold increase by 2025. And emissions from BP's operations will be 30–35% lower by 2030, while emissions associated with carbon in upstream oil and gas production will be 35–40% lower by 2030. This has set a high bar for other major energy firms. Greenpeace even gave the plans a rare, if tentative, thumbs up, calling it a 'necessary and encouraging start'.

Many others are also making the right noises. BP, Shell and Total are among those who have announced net zero by 2050, along with Spain's Repsol and London-listed Energean. Norway's Equinor is aiming for 'near zero' by mid-century, while Sweden's Lundin Petroleum has set an incredibly high bar, saying it will reach carbon neutrality by 2030. Comparatively, Italy's Eni is aiming for carbon neutrality by 2070. Other oil majors, including ExxonMobil and Chevron, are taking different routes (*see box: Mixed bag*).

## Technology matters – a lot

Some black holes need plugging for these targets to be both realistic and respected – the risk of falling short of these goals is very real. Aside from hindering what is still delicate momentum for this global overhaul, poor management could also lead to stranded assets and potentially destroy shareholder

**Net zero operations by 2050 is a new goal for some of the world's biggest oil and gas operators. Laudable, but how? Michelle Meineke reports.**



Major oil and gas companies have a mountain to climb  
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value, warns financial think tank Carbon Tracker. Neither would do global energy security, nor investors' confidence, any good. Plus, time is too short for backtracking; an intimidating fact that has paralysed some companies' efforts.

Above all, there must be encouragement and support within the energy ecosystem, regardless of targets, for we all stand to win (or lose). There are

bright spots. For one, renewable energy capacity investment has shown great resilience in the first half of 2020, according to research company BloombergNEF (BNEF). One sub-sector of renewables especially – offshore wind – has had by far its busiest half year ever for final investment decisions.

But with an eye on the climate clock, energy companies must break a sweat to clarify how they will make tangible and speedy progress. One of the major hurdles is a lack of commercially viable technologies (*see box: Key tech priorities*). There is no time to wait for the latest round of innovations, ie repeating the decades-long wait for lithium-ion batteries to evolve from the first prototype to the mass market.

'There is a stark disconnect between these high-profile pledges and the current state of clean energy technology,' highlighted the International Energy Agency (IEA) in July. 'While the technologies in use today can deliver a large amount of the emissions reductions called for by these goals, they are insufficient on their own to bring the world to net zero while ensuring energy systems remain secure – even with much stronger policies supporting them.'

Five years on from the signing of the Paris Agreement, it is concerning that early-stage technologies still play such an outsized role in energy companies' plans. Around 35% of the cumulative carbon dioxide emissions reductions needed to shift to a sustainable path come from technologies currently at the prototype or demonstration phase, the IEA points out. A further 40% of the reductions rely on technologies not yet commercially deployed on a mass-market scale.

In the agency's Sustainable Development Scenario, annual average investments in technologies that are currently only at prototype or demonstration stages total around \$350bn through to 2040. They reach nearly \$3tn in the 2060s. These are especially daunting numbers as energy stakeholders find their feet in a burgeoning recession triggered by the first truly global pandemic in a century, not to mention volatile oil prices.

## Key tech priorities

The key technologies the energy sector needs to reach net zero emissions are known today, but not all of them are ready. The IEA says that around half of the cumulative emissions reductions that would move the world onto a sustainable trajectory come from four main technology approaches:

- electrification of end-use sectors, such as heating and transport;
- application of carbon capture, utilisation and storage;
- use of low-carbon hydrogen and hydrogen-derived fuels; and
- use of bioenergy.

## Mixed bag

Inevitably with a global overhaul, the net zero narrative has its critics. Chevron's CEO, Mike Wirth, told Bloomberg: 'We have not set long-term targets that we are not exactly sure how we will get to. Our approach has been, get on the path, start taking actions, set short-term accountability metrics, make progress and start marching in that direction.'

Others say that the three-decade timeline suggests some energy companies are hedging their bets. 'If they really wanted to do it, they could bring the targets closer, to 2035 or so,' said Siamak Adibi, a Senior Consultant at FGE London. 'Net zero is a sort of paradox. It is not possible to be achieved by oil companies when they have oil and gas assets to monetise and still want to guarantee a reasonable return for their investment.'

While valid points, it is worth remembering that, ten years ago, the idea that some of the world's fossil fuel behemoths would commit to a net zero target would have been scoffed out of most boardrooms. The Paris Agreement, the world's most comprehensive climate-related deal signed in 2015, was already a momentous step. Global commitments on this scale had not been made for nearly two decades since the Kyoto Protocol in 1997.

And now, despite extreme social and economic global turbulence, energy companies are not backtracking on their environmental promises. Instead, they are pushing ahead with ambitious targets, net zero or not. So, fostering a collaborative and knowledge-sharing clean energy ecosystem for fossil fuel operators is pivotal to even have a slight chance of adhering to the Paris Agreement.

Equally, the net zero goal spans three decades for most companies. There will be plenty more dents to the global psyche – civil, environmental, economic, etc – so companies' roadmaps must be designed so that the energy transition rolls on, regardless. Efforts cannot falter every time news headlines erupt.

### Non-negotiable

Most of the largest companies in the world now account and report on the emissions from their direct operations (scopes 1 and 2), but scope 3 emissions are proving more complex. The GHG Protocol Corporate Standard classifies a company's greenhouse gas (GHG) emissions into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy, while Scope 3 emissions are all indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Some are managing, such as Total, which has pledged net zero

for all three scopes across all its production and energy products used by its customers in Europe by 2050 at the latest. The oil major has also reduced its Scope 3 average carbon intensity by 6% since 2015.

Others are finding it harder. ExxonMobil, for one, argues that Scope 3 emissions do not provide any meaningful insights into the company's emission reduction performance and could mislead the numbers. This could be especially true for non-integrated energy companies, which have far greater control over their supply chain.

But full transparency is non-negotiable, especially as Scope 3 emissions can often represent a company's biggest GHG impacts.

### Next steps?

One route towards greater transparency is developing a full GHG emissions inventory – incorporating all scopes – so companies can understand their total impact and address weak spots and promote stronger areas. For example, Eni will pursue a strategy that aims to obtain an 80%

reduction in net Scope 1, 2 and 3 emissions by 2050.

International reference protocols do not indicate an unequivocal estimation methodology that allows a concise and comparable representation of GHG emissions. So, Eni created a new methodology, which was reviewed by independent experts at the Imperial College London. The result of its application has also been verified by RINA, an independent certification company. This methodology includes all GHG Scope 1, 2 and 3 emissions, in absolute and relative terms, linked to the energy products sold, whether they derive from equity or non-equity productions.

This proactivity highlights the need – and viability – for industry-wide standardised reporting and comparative methods. This is especially essential as nearly every time a company announces a new target, there are different parameters (eg carbon dioxide target cut, scope of emissions covered, scope of operations covered).

How offset mechanisms, such as the European Union's Emissions Trading Scheme EU ETS, can evolve to support net zero goals is critical, as is the development of the carbon capture and storage (CCS) market. From the perspective of the Paris Agreement, the deployment of CCS globally remains well off track, according to the Global CCS Institute.

To meet climate mitigation targets, an estimated 2,000-plus large-scale CCS facilities must be deployed by 2050, requiring hundreds of billions in investment. Today, there are just 51 CCS facilities globally. Nineteen are in operation, four are under construction and 28 are in various stages of development, with an estimated combined capture capacity of 96mn tonnes of carbon dioxide per annum.

Looking ahead, the stakes are high – disconcertingly so. Failure to tick the right boxes in a net zero journey will undeniably jeopardise energy security and the planet. Now it is time to avoid finger pointing, continually up ambition and get to work. ●

## What does 'net zero' mean?

Net zero refers to achieving a balance between the amount of greenhouse gas (GHG) emissions produced and the amount removed from the atmosphere. There are two different routes to achieving net zero, which work in tandem – reducing existing emissions and actively removing GHGs.

A gross zero target would mean reducing all emissions to zero. This is not realistic, so instead the net zero target recognises that there will be some emissions, but that these need to be fully offset, predominantly through natural carbon sinks, like oceans and forests.