

# Spectrum

**New order:  
navigating the energy transition**

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The energy transition is an existential long-term risk for oil and gas companies, as the move away from fossil fuels towards low-carbon technologies impacts demand for hydrocarbons. The world is mobilising to tackle climate change and it will be critical for oil and gas debt issuers to clarify what part they could play in a decarbonising world and how the transition will affect their business models. As active, responsible credit investors, we believe a holistic understanding of corporate transition risks and actions to mitigate them is vital. We seek this by integrating environmental, social and governance (ESG) factors and engagement insights into our investment decisions.

## Net zero by 2050: the world is not on track

In October 2018, the Intergovernmental Panel on Climate Change published a report<sup>1</sup> which pointed out the benefits of mitigating a global rise in temperatures to 1.5°C. Conversely, there would be vastly more damage – including rising sea levels and severe heat – if temperatures increased by 2°C. But for there to be a 50% chance of achieving the 1.5°C increase, human-induced global net CO<sub>2</sub> emissions would need to be 45% lower in 2030 (compared to the 2010 baseline) and the world would need to achieve net-zero emissions by 2050.

These targets explain why a growing number of economies have committed to achieving net-zero emissions by 2050. Last December, the European Union (EU) presented its Green Deal, a roadmap for the bloc to become the first climate-neutral continent by 2050. And China – which accounts for 28% of global emissions and is the world's largest investor in coal-fired power stations – has announced a target to cut carbon emissions to almost zero by 2060. While China's pledge lacks specific actions, it does signal a willingness to embrace change.

But there has also been pressure from other areas. In September 2019, an estimated 4m people across 150 countries participated in what were likely the largest climate-change protests in history.<sup>2</sup> The share of US adults who think that dealing with climate change should be a top priority rose from 38% to 52% from 2016-20,<sup>3</sup> while Europeans rate climate change as the second-most serious global problem.<sup>4</sup>

There has also been a significant rise in investor-led climate-change initiatives in recent years (for more detail, see item one in the Appendix). These include the Climate Action 100+ – of which our stewardship team, EOS at Federated Hermes (EOS), is a co-leader – which seeks to engage with the world's largest corporate greenhouse-gas emitters, and the Transition Pathway Initiative, which assesses how prepared companies are for a low-carbon economy.

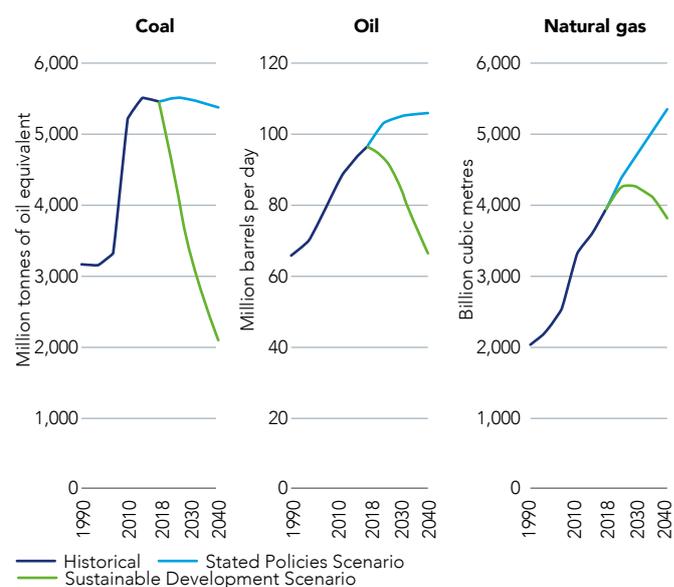
Despite these developments, progress has been slow. While 184 economies signed the Paris Agreement in 2015 – which

involved pledging to cut emissions in order to limit global warming to well below 2°C – estimates suggest that 75% of the commitments are insufficient.<sup>5</sup> Emissions in China, the world's largest emitter, are set to peak in 2030 at the latest.<sup>6</sup> In the absence of further climate-friendly policies, the world could be 2.7°C-3.1°C<sup>7</sup> warmer than pre-industrial levels by the end of the century.

## Oil and gas companies: reluctant to act?

Given that the transition to a low-carbon economy requires reduced hydrocarbon consumption, the oil and gas industry is set to be significantly affected. Yet analysis by the International Energy Agency (IEA) suggests that the absence of additional policy action, coupled with population and economic growth, mean that demand for oil and gas is likely to keep growing until 2040, while coal demand should remain stable (see figure 1). The IEA's Stated Policies Scenario (STEPS) analysis suggests there is a 50% chance that temperatures will stabilise at 2.7°C,<sup>8</sup> which is not enough to avoid the most severe effects of climate change.

Figure 1. A parting of ways: energy demand by scenario



Source: IEA, as at September 2020.

Most oil and gas companies use STEPs (or similar scenarios) to inform their long-term views on demand. Since demand is expected to rise in this baseline scenario for the next 20 years – a period that extends beyond the tenure of current corporate management teams – it is no surprise that firms are not in a rush to address the energy transition. Yet critics suggest that the IEA has underestimated the growth in renewables in the past,<sup>9</sup> which warrants caution for investors and suggests there is a need to question the scenarios. Indeed, BP recently said that oil demand could peak in the early 2030s.<sup>10</sup>

The IEA has also created a Sustainable Development Scenario (SDS), under which a 40% decline in oil consumption and unchanged demand for natural gas is required to limit warming to the parameters set out by the Paris Agreement.

### Transitioning to this new low-carbon economy – and the associated decline in demand for hydrocarbons – is a gradual but increasing material risk for oil and gas companies.

Yet this scenario requires dramatic changes in the world's energy system: the SDS scenario includes improved energy efficiency, increased use of renewables, a rise in electricity as a share of energy consumption, a decline in coal use and an initial rise (and then a fall) in natural-gas use (see item two in the Appendix for more detail). In addition, the IEA estimates that about 40% of actions to reduce emissions are in the early-adoption stage and require significant innovation and further development to get off the ground.



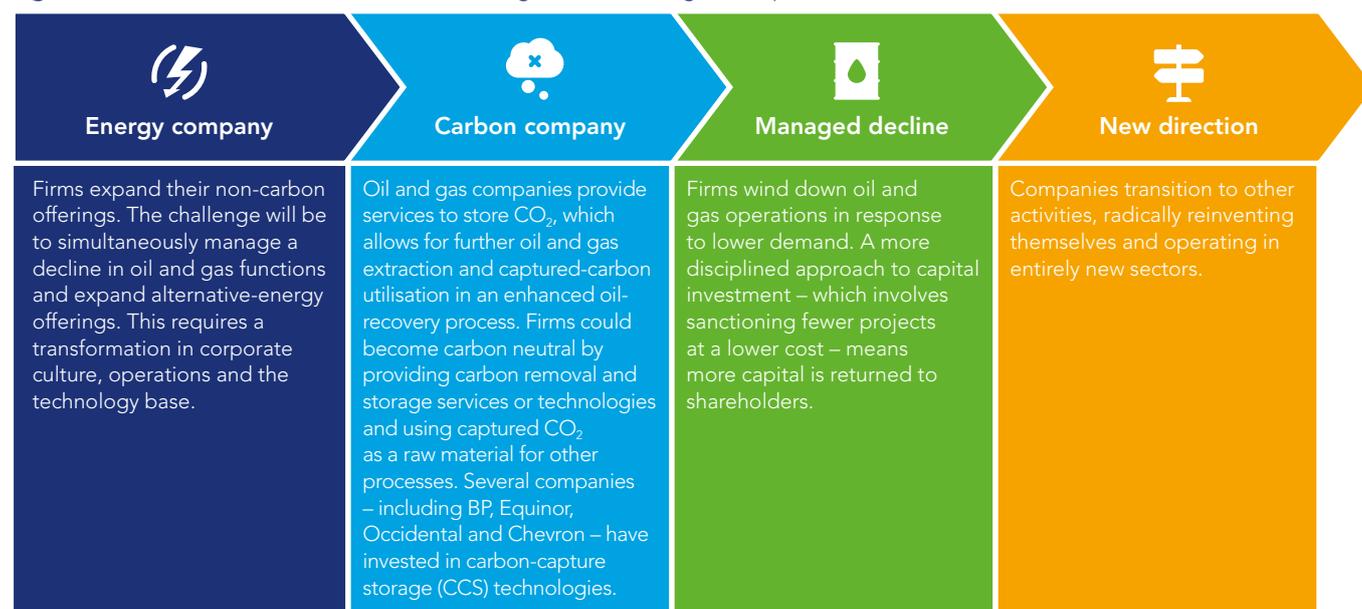
In September 2019, an estimated 4m people across 150 countries participated in what were likely the largest climate-change protests in history to date

### Plotting the path to net zero: a realistic goal?

Transitioning to this new low-carbon economy – and the associated decline in demand for hydrocarbons – is a gradual but increasing material risk for oil and gas companies. While scope 1 and 2 emissions (direct emissions and those generated from used and purchased electricity, respectively) are easier to tackle, they only account for 20% of the total generated by oil and gas firms. Scope 3 emissions, or those arising from combustion of the fuel by end users, are more problematic. Tackling them requires firms to make more fundamental changes, including altering their business models or using offsets.

The Science Based Targets initiative (SBTi) has come up with four potential transition frameworks to help oil and gas firms tackle these challenges and define their strategies going forward (see figure 2).

Figure 2. The road ahead: four transition strategies for oil and gas companies



Source: Federated Hermes, as at October 2020. For illustrative purposes only.

Given that even in the SDS there is a (diminished) role for oil and gas, we believe that oil and gas companies will still operate in a net-zero economy. Yet in order to do this, and to account for reduced hydrocarbon demand in a decarbonising world, firms will have to change their business models. Current evidence suggests that the path of least resistance is a gradual shift away from oil and gas production towards becoming a low-carbon energy company. Yet this will raise its own challenges, including whether companies have the correct skillsets to transition. Firms will need capital in order to rapidly pivot their businesses, and there are questions about expected returns in low-carbon technologies relative to oil and gas production and existing competition within the utility sector.

Becoming net zero will be more difficult for pure exploration and production companies, given that they do not have direct control over end-market products and therefore the scope 3 emissions that account for the majority of oil and gas emissions. The alternative would be to continue producing while sequestering CO<sub>2</sub> – as in the carbon-company scenario in figure 2. But with CCS technology in its infancy – and the lack of a global carbon price – there are few incentives for making such a commitment.

Regardless of whether firms commit to becoming net zero, all oil and gas companies will need to make changes as demand for hydrocarbons falls. Disciplined capital expenditure will be key, as companies will need to ensure that new investments are consistent with the marginal cost of supply for limiting warming to well below 2°C. As demand falls, so will this marginal price. For some firms, the transition challenges will be too great and they will instead need to focus on low-cost production, reducing their level of production, returning cash to investors and eventually winding down all operations (apart from the ones that can be offset by CCS).

## Atlantic divide: corporate transition strategies

Large European investment-grade oil and gas companies have led the way in communicating ambitions to achieve carbon neutrality by 2050. As such, many are shifting their strategies towards the energy company scenario outlined by the SBTi.

For most firms, this involves increasing investment in renewables, electricity generation, biofuels and carbon-capture technologies. Repsol, which was the first oil company in the world to announce a net-zero ambition, intends to prioritise value and cash generation over volume in its upstream business, and will assume an oil and gas curve compatible with the Paris Agreement scenario for future decisions on exploration and production.

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While the ambitions are commendable, more clarity is needed on how they will be achieved. We believe the most viable way that firms can indicate progress is by announcing interim targets with specific actions, as well as to link management compensation to climate-change targets. Encouragingly, all European oil and gas majors have disclosed interim targets (see figure 3). BP has also doubled the weight of environmental factors in determining its management's annual bonus to 20%, while share vesting is now explicitly tied to low-carbon operations and the energy transition.



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Figure 3. European oil and gas majors: emissions targets

Company	Region	Net-zero ambitions	Date announced	Net-zero ambitions: details	Interim emissions targets
Shell International Finance B.V.	Europe	Scope 1, 2 and 3 by 2050 (Scope 3 target on products sold) <b>Intensity</b>	April 2020	Committed to achieving net-zero scope 1 and 2 emissions by 2050. Net zero on all emissions from the manufacturing of products. Pivot towards serving customers that by 2050 are also net-zero emissions (net-zero scope 3).	Lower intensity by 3%-4% in 2022 compared with 2016. 30% reduction in scope 3 (net-carbon footprint) by 2035 and 65% by 2050.
BP Capital Markets plc	Europe	Scope 1, 2 and 3 before 2050 (Scope 3 target on production) <b>Absolute</b>	February 2020	Net zero across the entire operation in absolute terms by 2050 (excluding Rosneft). Reduce GHG emissions of production (scope 1, 2 and 3) to net zero. 50% reduction in carbon intensity of products by 2050. 50% reduction in operated methane intensity.	Emissions from operations 30%-35% lower by 2030. Emissions associated with carbon in upstream oil and gas production 35%-40% lower by 2030. Carbon intensity of the products it sells to be more than 15% lower by 2030.
Total Capital International S.A.	Europe	Scope 1, 2 by 2050 Scope 3 by 2050 in the EU (Scope 3 target on products sold) <b>Intensity</b>	May 2020	Net-zero scope 1, 2 and 3 in the EU by 2050. Net-zero scope 1 and 2 worldwide by 2050.	Reduce CO <sub>2</sub> intensity of global oil and gas production to less than 8kg per barrel of oil equivalent by 2025. Reduce the average carbon intensity of its energy products by 60% or more by 2050, with intermediate steps of 15% by 2030 and 35% by 2040 (scope 1, 2 and 3). Reduce absolute scope 3 emissions of European customers by 30% by 2030. Zero routine flaring by 2030.
Equinor ASA	Europe	Scope 1, 2 and 3 by 2050 (scope 3 on products sold) <b>Intensity</b>	November 2020	Reduce net-carbon intensity to zero by 2050 (scope 1, 2 and 3). Carbon-neutral global operations (scope 1 and 2) by 2030.	Reduce upstream CO <sub>2</sub> intensity to below 8kg CO <sub>2</sub> per barrels of oil equivalent by 2025. Reduce absolute GHG emissions from operated offshore fields and onshore plants in Norway by 40% by 2030, 70% by 2040 and to near zero by 2050 (scope 1 and 2). No routine flaring and near zero methane emissions by 2030.
Repsol	Europe	Scope 1, 2 and 3 by 2050 (Scope 3 target on production) <b>Intensity</b>	December 2019	Committed to achieving net-zero emissions by 2050. Considers scope 3 emissions of products from its primary energy production.	Reduce the carbon-intensity indicator by 10% by 2025, 20% by 2030 and 40% by 2040, against a 2016 baseline. Reduce CH <sub>4</sub> emissions intensity by 25% and routine gas flaring in exploration and production by 50% by 2025. Zero routine flaring by 2030.
ENI	Europe	Scope 1, 2 and 3 by 2050 (Scope 3 target on products sold) 80% <b>Absolute</b>	February 2020	Net-carbon neutrality across business for scope 1 and 2 by 2040. 80% reduction in scope 1, 2 and 3 emissions by 2050. Upstream net-carbon neutrality target for scope 1 and 2 emissions by 2030.	Reduce upstream carbon intensity by 43% by 2025 against a 2014 baseline. Zero process flaring by the end of 2025. Reduce emissions intensity by 15% by 2035 against a 2018 baseline. Reduce scope 1, 2 and 3 emissions by 80% and net emissions intensity of energy products by 55% against a 2018 baseline.

Source: Federated Hermes, as at October 2020.



**As the energy transition accelerates, it will become even more important for oil and gas companies across both Europe and the US to clarify their strategic responses.**

It should be noted that it can be difficult to compare ambitions across companies, particularly when absolute and intensity targets are used. There are problems with both: setting absolute targets forces companies to produce less oil and gas, even though this could be consistent with the demand profile under low-carbon scenarios, while intensity-based targets do not guarantee that absolute emissions are falling and do little to address financial and climate-related risks. Nonetheless, we believe that standards will harmonise over time now that there is a critical mass of companies setting targets.

It is apparent that European companies have made considerable progress in setting targets. But on the other side of the pond, American firms have been less active. Indeed, we often find that we are the first investors to raise low-carbon transition issues with the US high-yield energy companies that we engage with.

**We believe that engagement is a critical way to gain a better understanding of how companies approach transition-related risks.**

A few US companies have announced ambitions to become net zero. Yet these expressed ambitions only include scope 1 and 2 emissions, although some firms have set medium-term targets that aim to reduce carbon intensity and flaring (see the tables in the appendix). Range Resources, a holding in our credit portfolios, stands out as a rare example of a US firm that has announced net-zero targets for scope 1 and 2 emissions by 2025. It intends to achieve this by increasing the use of its electric fracking fleet and installing carbon offsets associated with reforestation and forest management.

The difference between the regions can be explained in part by the respective political environments in the EU and the US, increased shareholder pressure for carbon reduction in Europe and the fact that US firms are more conservative when setting long-term targets if it is not clear that existing technology can help deliver them. It is also harder for upstream producers – of which there are many in the US – to aim for carbon neutrality and to control scope 3 emissions: all the European companies that have announced targets are integrated energy firms.

Finally, the structure of the US and European energy markets differ. While the European market consists mostly of large, integrated players, the US space contains many more firms – some larger ones, but also an abundance of smaller shale companies. The oil-price crash this year means that many of these small firms have had to focus on surviving, with less time and resources available for making long-term strategic decisions about the energy transition.

## Stewardship: engaging for a greener future

As the energy transition accelerates, it will become even more important for oil and gas companies across both Europe and the US to clarify their strategic responses. Stewardship is valuable because it allows us to develop a much more detailed overview of management teams' thinking, culture and processes around climate-related risks. It also provides insights about current and future strategic planning, and the capital allocations that companies are using to both mitigate and capitalise on this fundamental issue.

We believe that engagement is a critical way to gain a better understanding of how companies approach transition-related risks. Our in-house stewardship team, EOS, has engaged with a range of companies on the energy transition, and our credit analysts participate in many of the meetings. Below we detail some of our engagements with the companies held in our credit portfolios.



## Petrobras: ambitious medium-term targets

EOS has engaged with Petrobras, a Brazilian energy company, on climate-change issues since 2015. After engaging with minority-elected independent directors on the topic, the Chair invited the EOS Lead Engager to present on industry best practice and their expectations for the firm's climate-change strategy.

In its 2018-21 business plan, Petrobras included the transition to low-carbon operations as a strategic pillar for the first time and published the first edition of its Climate Change Report in 2019, which incorporated several recommendations from the Taskforce on Climate-related Financial Disclosures.

While the firm has not expressed an ambition to be carbon neutral by 2050, it has announced targets to reduce the carbon intensity of its operations by 32%, its methane intensity by 30%-50% and carbon intensity in refining by 16%, all by 2025. Our Credit team has participated in meetings with the firm and was encouraged by its goal to become one of the world's lowest-cost producers – something that will help it manage the transition.

## Hess: preserving value

We were pleased to hear that the senior management and the board are directly involved in Hess's annual climate-risk assessment exercise, which is also a key input into the company's strategic plan. In order to understand the pace and changing nature of the energy transition, the firm seeks experts from leading universities to present research to the management and board.

Hess has confirmed that should the transition accelerate, it is likely to seek ways to return capital to shareholders in an orderly manner, with a focus on cost management

and balance-sheet strength. It has no plans to diversify into renewables.

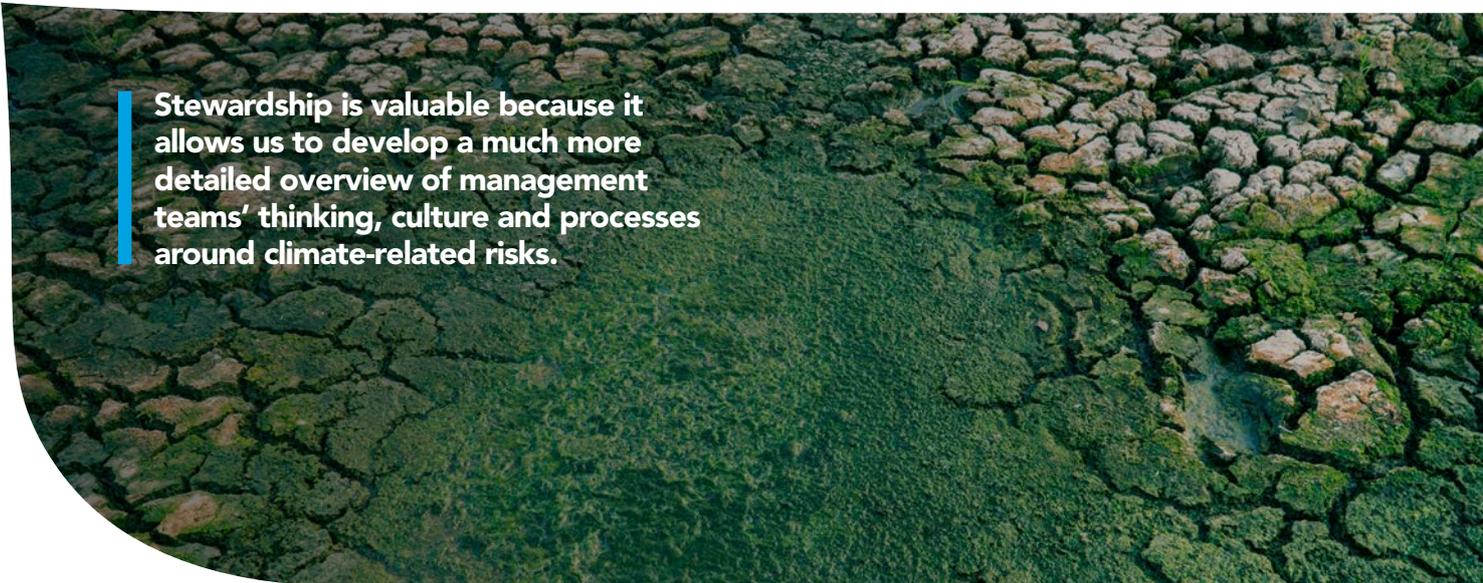
When we asked the firm about whether it had net-zero ambitions for 2050, it pointed out that it is much harder for pure upstream producers to set targets for scope 3 emissions – largely because they do not have direct control over lowering end-product emissions other than through measures such as carbon capture or offsets.

## BP: a new direction

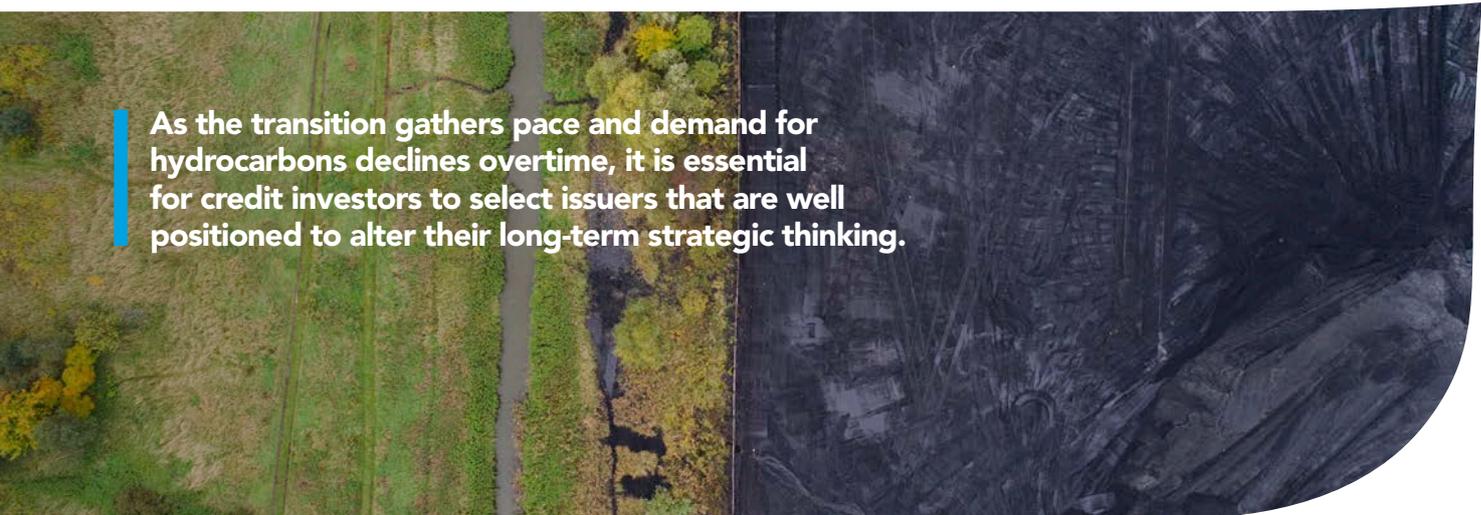
EOS has engaged with BP since 2008 and currently leads Climate Action 100+'s engagements with the firm. The team led the drafting of the 2019 shareholder resolution focused on strategy, capital expenditure and targets that included reducing emissions to levels consistent with the Paris Agreement. The resolution passed with the support of more than 99% of shareholders.

This year, BP became the first European oil major to announce an ambition to achieve net-zero emissions by 2050, with a focus on the energy it produces. In August, BP provided more clarity about how it could achieve this. Its initiatives include to:

- Increase low-carbon investment 10-fold in the years to 2030.
- Partner with 10-15 cities and three core industries in its decarbonisation efforts.
- Reduce oil production by 40% in the years to 2030 through active portfolio management and a pledge not to explore in new countries.
- Lower emissions from its own operations by 30%-35% in the years to 2030.
- Ensure the carbon intensity of its products are more than 15% lower by 2030.



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**As the transition gathers pace and demand for hydrocarbons declines overtime, it is essential for credit investors to select issuers that are well positioned to alter their long-term strategic thinking.**

### Changing course: looking for survivors

We combine our insights from engagement meetings with bottom-up, fundamental investment analysis, which informs our view of how attractive a company is from a credit perspective. This analysis involves looking at more traditional metrics such as balance-sheet strength and sector dynamics, as well as assessing how the company's ESG policies and behaviours impact enterprise value.

As the transition gathers pace and demand for hydrocarbons declines overtime, it is essential for credit investors to select issuers that are well positioned to alter their long-term strategic thinking. Oil and gas companies with high-quality assets that can break even at low prices are attractive. As greater scale allows companies to further reduce costs, companies in attractive basins are likely to benefit from increased consolidation, as evidenced by the recent announcement of a merger of equals between Devon and WPX. In addition, strong balance sheets and sufficient liquidity should help firms navigate the associated decline in prices and potential uptick in commodity-price volatility going forward.

Despite the challenges, we believe there are companies that are well-positioned to tackle the transition to a low-carbon economy in the years ahead. One example of this is our current holding Aker BP, a Norwegian producer with high-quality assets, low breakeven prices and low operational carbon emissions.

In February 2020 Aker BP became one of the first non-major oil companies to clarify its transition strategy and explain how it could contribute to a decarbonising world. The firm wants to remain an efficient, pure low-cost upstream producer with a focus on reducing its operational environmental footprint. One way it has already begun to do this is by electrifying some offshore production using shore power, which reduces reliance on diesel to power operations and limits the associated emissions, effluents and noise impacts. It also plans to work with other companies by contributing data, knowledge and technology to drive low-carbon solutions for the industry.

Aker BP has differentiated itself from its peers by including the impact of carbon pricing in its cost breakeven for new projects. The firm told us that a 2050 net-zero target was high on its agenda and that it would talk to investors after it has looked into how it can reduce scope 3 emissions.

### Worthy ambitions: will energy companies rise to the challenge?

Oil and gas companies are at a critical juncture. As the physical and economic risks of global warming become increasingly clear, populations, governments and investors have mobilised to champion the importance of transitioning to a low-carbon economy and achieving net-zero emissions by 2050.

Energy companies have responded in a variety of ways. While some – namely larger, investment-grade European issuers – have set ambitious net-zero targets for 2050, others in the US have been less active. As the low-carbon transition accelerates in this decade, it will become an imperative for all firms to clarify how it will affect their business models in the years ahead.

As active, responsible credit investors, we believe that it is critically important to understand the transition strategies of oil and gas issuers. The engagement activities of EOS provide vital insights, which we supplement with a top-down assessment of industry dynamics and a granular, bottom-up analysis of a company's fundamental characteristics.

While the energy industry clearly faces a myriad of challenges, our interactions with companies have left us reasonably reassured. On the whole, we see a raft of opportunities to seek out energy companies with high-quality assets, low production costs, strong balance sheets and a willingness to alter their long-term strategic thinking. These qualities will fortify their ability to navigate the energy transition in the years ahead.

## Appendix

### 1) Investor initiatives

#### Climate Action 100+

- Launched in December 2017, Climate 100+ is an investor initiative that aims to ensure the world's largest corporate greenhouse-gas emitters take necessary action on climate change. The companies include 100 systematically important emitters that account for two-thirds of annual global industrial emissions, alongside more than 60 others with significant opportunities to drive the clean energy transition. To date, more than 450 investors with an excess of \$40trn in assets under management have signed up to the initiative.

#### The Institutional Investors Group on Climate Change (IIGCC)

- The European body for investor collaboration on climate change aims to mobilise capital for the low-carbon transition and ensure resilience in the face of a changing climate by collaborating with business, policymakers and fellow investors. The IIGCC has more than 250 members, which are mostly pension funds and asset managers across 15 countries. With over €33trn in assets under management, it works to support and help define the public policies, investment practices and corporate behaviours that address the long-term risks and opportunities associated with climate change. In August 2020, the IIGCC issued the first-ever framework for net-zero investing.

#### Transition Pathway Initiative (TPI)

- Launched in 2017 by the Church of England National Investing Bodies and the Environment Agency Pension Fund, the TPI is a global initiative led by asset owners and supported by asset managers. Aimed at investors and free to use, it assesses how prepared companies are for a low-carbon economy and supports efforts to address climate change. The initiative assesses companies on 1) how they manage greenhouse-gas emissions and risks and opportunities related to the low-carbon transition, and 2) how their current and future carbon performance might compare to the international targets and national pledges set out in the Paris Agreement.

#### The Carbon Disclosure Project (CDP)

- The CDP is a not-for-profit charity that runs a global disclosure system for investors, companies, cities, states and regions to help them manage their environmental impacts. Set up in 2000, the CDP scores companies from A to F on their progress towards environmental stewardship. The scores are split into three categories: climate change, water security and deforestation. High scores require detailed content and a comprehensive disclosure of a firm's awareness of climate-change issues, their management methods and attempts to address these issues.

#### The Task Force on Climate-Related Financial Disclosures (TCFD)

- The TCFD was created in 2015 by the Financial Stability Board, with the aim to develop consistent climate-related financial-risk disclosures that companies, banks and investors can use when providing information to stakeholders. The TCFD focuses on the governance and management dimensions of climate change.

#### Science-Based Targets initiatives (SBTi)

- The SBTi argues that setting science-based targets is a powerful way to boost corporate competitive advantage in the transition to the low-carbon economy. It is a collaboration between the CDP, the United Nations Global Compact, the World Resource Institute and the Worldwide Fund for Nature and is one of the We Mean Business Coalition commitments. The initiative showcases companies that set science-based targets through case studies, events and media, emphasising that science-based target setting can increase innovation, reduce regulatory uncertainty, strengthen investor confidence and improve profitability and competitiveness. With the support of a technical advisory group, it also defines and promotes best practice in science-based target setting and offers resources, workshops and guidance to reduce the barriers to adopting the targets. Finally, it independently assesses and approves the targets of individual companies.

### 2) IEA scenarios: key assumptions

#### Sustainable Development Scenario

- The global economy's energy intensity falls by over 3% a year, compared to a 1.2% actual improvement in 2018.
- Renewables provide two-thirds of the global electricity supply by 2040, compared to a quarter today.
- The share of electricity in global energy consumption rises from 19% today to more than 30% by 2040. The largest increase in demand comes from electric vehicles, with around half of the global car fleet and most of the world's urban buses set to become electric.
- More than two-thirds of final energy consumption comes from other sources that include oil and gas with reduced emission intensity, low-carbon fuels like biofuels, synthetic fuels and renewable gases and alternative energy carriers such as hydrogen.
- The share of coal in the global primary energy mix falls from 27% today to 10% in 2040. This will be hard to deliver, given that there are 2080 gigawatts (GW) of coal-fired power plants in operation and a further 170 GW under construction. If solutions to bring down emissions from the existing stock of coal-fired plants are not implemented, it will be hard to meet sustainable targets.
- Petrochemicals is the only area that records rising oil demand, as oil use as a petrochemical feedstock continues to increase.
- Natural-gas use rises until 2030, before falling back to current levels by 2040. Demand in advanced economies is a third lower by 2030, although this is offset by developing economies – such as China and India – where natural gas plays a role in replacing coal. There is a major reduction in the emissions from extracting, processing and transporting natural gas, with reduced methane emissions in the supply chain.
- Low-cost resource holders such as OPEC+ regulate their production in order to maintain a floor for oil prices.

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### 3) Emissions-reduction targets among energy companies

#### Investment-grade companies

Company	Region	Net-zero ambitions	Date announced	Net-zero ambitions: details	Interim emissions targets	Climate-related strategies	Paris Agreement-aligned	TCFD	Carbon pricing	Emissions disclosures by scope			Executive pay linked to climate targets	
										1	2	3		
Shell International Finance B.V.	Europe	Scope 1, 2 and 3 by 2050 (Scope 3 target on products sold) <b>Intensity</b>	April 2020	Committed to achieving net-zero scope 1 and 2 emissions by 2050. Net-zero on all emissions from the manufacturing of products. Pivot towards serving customers that by 2050 are also net-zero emissions (net-zero scope 3).	Lower intensity by 3%-4% in 2022 compared with 2016. Reduce scope 3 (net-carbon footprint) by 30% by 2035 and 65% by 2050.	Purpose is to "power progress together with more and cleaner energy solutions". Operational improvements for efficiency, increase low-carbon energy, biofuels, hydrogen and carbon sinks. Sell more products with a lower carbon intensity (renewable power, biofuels and hydrogen) and work with customers to decarbonise (scope 3). Yet to release an updated investment plan to achieve net zero.			Expects implementation to be global over the 2020s and for a price range of \$25-\$60 to have developed by 2030. Sees carbon pricing as "a critical component for success".				Sustainable development accounts for 20% (safety 10%, environment 10%).	
BP Capital Markets plc	Europe	Scope 1, 2 and 3 before 2050 (Scope 3 target on production) <b>Absolute</b>	February 2020	Net zero across the entire operation in absolute terms by 2050 (excluding Rosneft). Reduce GHG emissions of production (scope 1, 2 and 3) to net zero. Reduce carbon intensity of products by 50% by 2050. Reduce operated methane intensity by 50%.	Emissions from operations 30%-35% lower by 2030. Emissions associated with carbon in upstream oil and gas production 35%-40% lower by 2030. Carbon intensity of the products it sells to be more than 15% lower by 2030.	From international oil company to integrated energy company. Within 10 years, aims to have increased its annual low-carbon investment 10-fold to \$5bn a year: renewables, bionenergy, hydrogen CCU. By 2030, develop 50 GW of net renewable generating capacity, a 20-fold increase from 2019. Reduce oil and gas production by at least 1m barrels of oil equivalent a day by 2030, or by 40% from 2019.			Internal carbon price of \$40 per tonne to guide decision-making. Applies a higher value of \$80 per tonne to stress test the robustness of its portfolios in jurisdictions highly exposed to carbon regulations. Has carbon pricing principles.				The weight of the environmental measure of management's annual bonus will double to 20%. Performance share is now tied explicitly to low carbon and the energy transition with a 30% weight for the performance award.	
Exxon Mobil Corporation	US			Has declined to set net-zero targets as it believes it is a "beauty contest". <sup>11</sup>	15% reduction in methane emissions and 25% reduction in flaring by 2020. 10% reduction in GHG emissions intensity at Imperial Oil Sands by 2023.	"Fueling the world safely and responsibly". Will incorporate carbon capture and cogeneration to reduce CO <sub>2</sub> emissions.			Talks about "support for carbon pricing mechanisms" in its 2020 Carbon Summary Report.			The firm states that they are "innaccurate and out of their control". <sup>12</sup>	Includes "effective management of risks relating to climate change".	
Total Capital International S.A.	Europe	Scope 1, 2 by 2050 Scope 3 by 2050 in the EU (Scope 3 target on products sold) <b>Intensity</b>	May 2020	Net-zero scope 1, 2 and 3 in the EU by 2050. Net-zero scope 1 and 2 worldwide by 2050.	Reduce CO <sub>2</sub> intensity of global oil and gas production to less than 8kg per barrel of oil equivalent by 2025. Reduce the average carbon intensity of its energy products by 60% or more by 2050, with intermediate steps of 15% by 2030 and 35% by 2040 (scope 1, 2 and 3). Reduce absolute scope 3 emissions of European customers by 30% by 2030. Zero routine flaring by 2030.	"Ambition is to become the responsible energy major". Plans to increase its allocation of capital expenditure for low-carbon electricity from 10%-20% by 2030 (the highest level for majors is currently 10%). Targets a 25 GW renewable generation gross capacity in 2025 and will "continue to expand its business to become a leading international player in renewable energies". Investing in CCS, biofuels and sustainable aviation fuels. Considers natural gas to be a key alternative to coal.			Internal carbon price of \$30-\$40 per tonne, depending on the price of oil.				Target to lower GHG emissions from Total's oil and gas installations.	
Equinor ASA	Europe	Scope 1, 2 and 3 by 2050 (scope 3 on products sold) <b>Intensity</b>	November 2020	Reduce net-carbon intensity to zero by 2050 (scope 1, 2 and 3). Carbon-neutral global operations (scope 1 and 2) by 2030.	Reduce upstream CO <sub>2</sub> intensity to below 8kg CO <sub>2</sub> per barrels of oil equivalent by 2025. Reduce absolute GHG emissions from operated offshore fields and onshore plants in Norway by 40% by 2030, 70% by 2040 and to near zero by 2050 (scope 1 and 2). No routine flaring and near zero methane emissions by 2030.	"Developing as a global offshore wind major". Investing \$10bn in solar and wind until 2025, which accounts for 55% of investment in solar and wind by oil majors. Spending \$6.5bn over the next three years to build its capital-intensive offshore wind portfolio. Grow renewable energy capacity 10 times to between 4-6 GW by 2026 and 12-16 GW by 2035. Set a goal in 2017 to invest around 100bn Norwegian krone (\$11bn) in new renewable energy towards 2030. Significant pipeline of offshore wind projects globally. CCS and hydrogen pilot projects.			Applies an internal price on CO <sub>2</sub> emissions of at least \$55 per tonne in all investment decisions. Goal is to make carbon pricing a cornerstone for tackling climate change.				Has set short, medium and long-term climate-related targets for its emissions to drive performance.	
Ecopetrol S.A.	Colombia			N/A	Reduce GHG emissions by 2030 under a business-as-usual scenario. Zero routine flaring by 2030.	Looking to offset GHG emissions with nature-based solutions, carbon markets and forest carbon projects.								
Saudi Arabian Oil Company	Saudi Arabia			N/A	Zero routine flaring by 2030	Zero routine flaring by 2030. Flare-gas recovery systems, energy efficiency programs, leak detection and repair programs.								The firm rewards performance in the areas of financial, operational and safety and sustainability. These are too vague to be climate related.

Company	Region	Net-zero ambitions	Date announced	Net-zero ambitions: details	Interim emissions targets	Climate-related strategies	Paris Agreement-aligned	TCFD	Carbon pricing	Emissions disclosures by scope			Executive pay linked to climate targets
										1	2	3	
<b>Integrated energy</b>													
Hess Corporation	US			N/A	Reduce scope 1 and 2 GHG emissions intensity (divided by production) of operational assets by 25% by 2020 compared to a 2014 baseline. Reduce flaring intensity by 25% against a 2014 baseline. Lower methane emissions intensity from US onshore upstream operations to less than 0.47% by 2025.	Investing in innovative research and scientific solutions to mitigate climate change. Incorporating carbon-risk scenario analysis into business planning.			Applies either an actual carbon price for assets and the intended forward investments where regulatory frameworks exist, or a sustained CO <sub>2</sub> cost of \$40 per tonne.				20% of annual compensation incentives are tied to the environment, health and safety.
Repsol	Europe	Scope 1, 2 and 3 by 2050 (Scope 3 target on production) <b>Intensity</b>	December 2019	Committed to achieving net-zero emissions by 2050. Considers scope 3 emissions of products from its primary energy production.	Reduce the carbon-intensity indicator by 10% by 2025, 20% by 2030 and 40% by 2040, against a 2016 baseline. Reduce CH <sub>4</sub> emissions intensity by 25% and routine gas flaring in exploration and production by 50% by 2025. Zero routine flaring by 2030.	"At the forefront of the sector in the fight against climate change". Increasing its target for low-carbon electricity generation capacity by 3,000 MW to 7,500 MW by 2025. Aims to become a leader in renewable energies. Increasing the production of biofuels and chemical products with a low carbon footprint. Committed to applying the best available technologies. One example is CCUS. If necessary, will offset emissions through reforestation and other natural climate sinks to achieve net-zero emissions by 2050.		Internal carbon pricing applied to all new investments: \$25 per tonne of CO <sub>2</sub> in 2018 and \$40 per tonne from 2025 onwards.				40% of long-term executive pay will be linked to the decarbonisation strategy and Paris Agreement alignment.	
Chevron	US			In March 2020, the CEO stated that it "won't go carbon neutral anytime soon".	Reduce methane by 25% and flaring intensity by 30% by 2023 from 2016 levels.	"To be among the most efficient producers of fossil fuels". Believes that increasing the emissions efficiency of fossil-fuel production is the same as decreasing overall fossil-fuel emissions. As a result, will continue to produce fossil fuels.		Uses various carbon prices for different jurisdictions.			Not included in the recent sustainability report.	Executive pay tied to methane and flaring targets.	
Gazprom	Russia			N/A	Reduce emissions by up to 80% by 2050. Reduce gross GHG emissions by 20% by 2021.	Will use green energy sources in Serbia, including solar and wind power. Implementing a climate-change adaptation programme.							A key-performance indicator is to reduce relative rates of GHG emissions, expressed as CO <sub>2</sub> equivalent.
<b>Exploration and production</b>													
ConocoPhillips Company	US	Scope 1 and 2 by 2050 No scope 3 target <b>Intensity</b>	October 2020	Committed to achieving net zero in scope 1 and 2 by 2050.	Reduce scope 1 and 2 GHG emissions intensity by 35%-40% by 2030 against a 2017 baseline. Aims to meet the World Bank zero routine flaring initiative goals by 2025. Reduce methane emissions intensity by 10% by 2025.	Net-zero ambition is a Paris-aligned climate-risk strategy. Uses CCUS techniques. Adding continuous methane monitoring devices.		The firm expects governments to price carbon at \$40 per tonne by 2024.					Includes ESG performance in executive and employee compensation programs.
Aker BP	Norway			N/A	Reduce CO <sub>2</sub> emissions by 140,000 tonnes by 2030 compared to a 2016 baseline. Aims for CO <sub>2</sub> emissions intensity to be below 5kg per barrel of oil equivalent from 2020.	-		Uses a carbon price of \$90 per tonne of CO <sub>2</sub> for investment decisions in 2020, which will increase to \$105 in 2030.			Disclosed to the CDP, but not in its sustainability report.		
Noble Energy Inc.	US			N/A	Lower nitrogen oxide and particulate matter emissions by about 60%, with no timeline. Reduce methane emissions across the natural-gas supply chain. Has achieved the ONE future coalition goal to reduce methane emissions across the value chain to 1% or less of gross natural-gas production by 2025.	A member of Colorado Oil and Gas Association's Voluntary Ozone Reduction Program. Partnered with government agencies, NGOs and academic institutions to better understand how pneumatic devices can operate with lower emissions.							40% of the short-term incentive plan includes safety and environmental performance.
Canadian Natural Resources Limited	Canada			The firm has a net-zero oil-sands emission goal, but provides no timeline. This is also to be achieved by innovation, rather than carbon offsets. No mention of scope 1, 2 or 3 goals.	On track to meet the Alberta government's target to reduce absolute methane emissions by 45% by 2025 compared to 2014 levels.	The firm is carrying out CCS projects and is engaging in climate policy and regulation. Emissions offsets, gas conservation and pneumatic controller retrofit projects are part of the methane reduction plan.							
Devon Financing Corp ULC	US			N/A	Committed to reducing the methane intensity rate to 0.28% or lower by 2025. It was 0.324% at the end of 2018.	-		Very minimal and not mentioned on the TCFD Website.					

Company	Region	Net-zero ambitions	Date announced	Net-zero ambitions: details	Interim emissions targets	Climate-related strategies	Paris Agreement-aligned	TCFD	Carbon pricing	Emissions disclosures by scope			Executive pay linked to climate targets
										1	2	3	
<b>Exploration and production</b>													
Marathon Oil	US			N/A		"An industry leader in reducing emissions from refinery flares". Applying technologies to reduce emissions, including ultra-high efficiency flares and vapour recovery but not CCS. Participating in voluntary industry initiatives to reduce emissions and monitoring proposed regulatory and legislative changes.							

**High-yield companies**

Company	Region	Net-zero ambitions	Date announced	Net-zero ambitions: details	Interim emissions targets	Climate-related strategies	Paris Agreement-aligned	TCFD	Carbon pricing	Emissions disclosures by scope			Executive pay linked to climate targets
										1	2	3	
<b>Integrated energy</b>													
Petroleos Mexicanos	Mexico			N/A					As a state-owned company, Pemex will participate in the carbon price that Mexico is establishing.				
Petrobras Global Finance B.V.	Brazil			N/A	Reduce exploration and production carbon intensity by 32% by 2025 and exploration and production methane intensity by 30%-50% by 2025. Reduce refining carbon intensity by 16% by 2025.	Reinject about 40m tonnes of CO <sub>2</sub> by 2025 using CCUS projects.							

**Energy and exploration**

Occidental Petroleum Corporation	US		March 2019	Aspires to become carbon neutral but has set no dates.	Recently acquired Anadarko so is developing a new baseline for targets. Zero routine flaring by 2030. Reduce methane emissions intensity to below 0.25% by 2025 from a 2017 baseline of 0.32%.	Launched Oxy Low Carbon Ventures, which is focused on low-carbon technology solutions. Investing in CCS.			Capital approval process assumes a \$50 per tonne price for carbon sensitivity modeling.				Expanded the sustainability component of the annual cash incentive award. Established quantitative targets to advance the use of CCUS.
Apache Corporation	US			N/A	Reduce methane emissions intensity to 0.37% by 2025. Aims to achieve the ONE future coalition goal to reduce methane emissions across the value chain to 1% or less of gross natural-gas production by 2025. Eliminating gas flaring of Egypt operations by 2030 in line with the national initiative.	Implementing a leak-detection program, including ongoing monitoring and timely repair. Plans to replace, remove or retrofit high-bleed pneumatic controllers with low- or zero-emitting devices within the next five years.							Introduced an annual goal that relates to GHG emissions, flaring and SDGs, but no detail on how to achieve this.
Continental Resources Inc.	US			N/A		A "leader in gas capture". Replaced some higher-horsepower engines with lower-horsepower ones to reduce the volume of gas used.		Very minimal, light mention.					
EQT Corporation	US			N/A	Aims to achieve the ONE future coalition goal to reduce methane emissions across the value chain to 1% or less of gross natural-gas production by 2025.	More reactive than proactive, will reduce leaks with a leak-detection and repair programme.							
Range Resources Corp.	US	Scope 1 and 2 by 2025 <b>Absolute</b> No scope 3 target	August 2020	Net-zero target for scope 1 and 2 emissions by 2025.	15% reduction in emission intensity relative to 2019 levels by 2025.	Aims to achieve its 2025 goal through the use of carbon offsets associated with reforestation and forest management. Uses an electric fracking fleet.							
WPX Energy Inc.	US			N/A		More reactive rather than proactive, will reduce flaring by maximising gas capture.							

<sup>1</sup> 'Special report: global warming of 1.5 °C', published by the IPCC.

<sup>2</sup> 'How big was the global climate strike? 4 million people, activists estimate.', published by Vox on 22 September 2020.

<sup>3</sup> 'How Americans see climate change and the environment in 7 charts', published by the Pew Research Centre on 21 April 2020.

<sup>4</sup> 'What is the European Green Deal and will it really cost €1tn?', published by the Guardian on 9 March 2020.

<sup>5</sup> 'Most countries aren't hitting 2030 climate goals, and everyone will pay the price', published by National Geographic on 5 November 2019.

<sup>6</sup> 'Climate change: China aims for 'carbon neutrality by 2060'', published by the BBC on 22 September 2020.

<sup>7</sup> 'Temperatures', published by the Climate Action Tracker.

<sup>8</sup> 'The oil and gas industry in transition', published by the IEA.

<sup>9</sup> 'Is the IEA underestimating renewables?', published by DW on 26 March 2018.

<sup>10</sup> 'BP warns of oil demand peak by early 2020s', published by the FT on 14 September 2020.

<sup>11</sup> 'US oil majors are snubbing climate-conscious rivals in Europe', published by Bloomberg on 5 March 2020.

<sup>12</sup> '2020 energy and carbon summary', published by ExxonMobil in January 2020.

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