Climate and Energy Benchmark in Oil and Gas

Insights Report

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ACT ASSESSING LOW CARBON TRANSITION

World Benchmarking Alliance

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Introduction

Our world needs a major decarbonisation and energy transformation to prevent the climate crisis we're facing and meet the Paris Agreement goal of limiting global warming to 1.5°C. Without urgent climate action, we will experience more extreme weather events, rising sea levels and immense negative impacts on ecosystems. These impact each and every one of us for decades to come, but more so the most vulnerable populations and regions.

196 countries signed up to the Paris Agreement in 2015, in the same year 193 countries committed to the UN Sustainable Development Goals (SDGs). The Intergovernmental Panel on Climate Change 2018 Special Report on limiting warming to 1.5°C showed that global CO2 emissions need to fall by about 45% from 2010 levels by 2030 and reach net zero by around 2050.

The private sector plays a critical role in driving decarbonisation and must take action now to meet the Paris Agreement goal. The WBA Climate and Energy Benchmark is an accountability mechanism that measures corporate progress against the Paris Agreement and whether companies are contributing to a just transition. Private sector engagement alongside action by governments and civil society is essential for meeting the SDGs and the Paris goal.

WBA's Climate and Energy Benchmark measures and ranks the world's 100 most influential oil and gas companies on their low-carbon transition. The Oil and Gas Benchmark is the first comprehensive assessment of companies in the oil and gas sector using the International Energy Agency's (IEA) Net Zero Emissions by 2050 Scenario which was released in May 2021. In partnership with CDP and ADEME (the French agency for ecological transition), the benchmark assesses 100 keystone oil and gas companies' targets and performance against their 1.5°C pathways, to see if they are on track to meet the Paris Agreement goal using the 2021 ACT (Assessing low-Carbon Transition) Oil and Gas methodology.

In this new era for energy production, oil and gas companies are at a crossroads: transform or become redundant. They can no longer plead ignorance of how urgently change is needed. The industry must acknowledge the wholesale transformation required to survive and signal the steps it is taking to meet this challenge.

This report presents our five key findings from the benchmark results, as well as a deeper dive into findings across each performance module assessed. The Oil and Gas Benchmark shows evidence of a systemic lack of accountability and action by the 100 companies. It paints a worrying picture of the state of play in one of the most significant sectors for the low-carbon transition. Despite glimpses of good practice in specific areas, companies are still in need of stronger leadership, more investment and greater transparency to scale the vast ambition and performance gap that exists in the sector.

WBA's mission is to build a movement to measure and incentivise business impact towards a sustainable future that works for everyone. Working with more than 250 organisations in our Alliance, we envision a society that values the success of business by what it contributes to the world. To achieve this, we need all actors in the ecosystem to drive the transformations needed. If you have any feedback on our findings, please reach out to Vicky Sins, Decarbonisation and Energy Transformation Lead at WBA: v.sins@worldbenchmarkingalliance.org.

Five key findings

The Oil and Gas Benchmark shows evidence of a systemic lack of accountability and action by the 100 companies. It paints a worrying picture of the state of play in one of the most significant sectors for the low-carbon transition. Despite glimpses of good practice in specific areas, companies are still in need of stronger leadership, more investment and greater transparency to scale the vast ambition and performance gap that exists in the sector.

Staying within 1.5°C means companies must keep oil and gas in the ground

Production from already approved oil and gas fields of the 100 companies will burn through and breach the 1.5°C carbon budget of the sector by 2037. Despite this calamitous trajectory, the most influential companies in the sector are purposefully going in the opposite direction, pursuing a 'take what you can, while you can' approach. Companies must transition away from oil and gas, not just to keep our planet safe but to ensure their own survival in a low-carbon economy.

WBA's Oil and Gas Benchmark is the first comprehensive assessment of companies in the oil and gas sector using the IEA's Net Zero Emissions by 2050 Scenario (NZE). The NZE is aligned with a 50% chance of limiting long-term temperature rise to 1.5°C (2.7°F).

The findings are startling. A company fully aligned with the 1.5°C scenario would receive a rating of 20A+. The median rating in this benchmark is 1.8E-. The highest rating is Neste's 8.1B=, with the companies next in line Engie with 7.9B= and Naturgy with 6.8C+.

Compared to our previous benchmarks on automotive manufacturers and electric utilities, the scores of these 100 oil and gas companies paint an even more worrying picture of a sector at odds with the low-carbon transition. It is far from impossible for companies to get a good rating on this assessment: the evidence shows that the best observed performance across each assessment indicator - achieved by a different company in each case - would result in a total performance score of 16.8/20. However, the evidence of good practice is sporadic at company and sample level. Out of the 100 companies, just three have set comprehensive emissions reduction targets, five have robust climate change expertise at board level and less than a third are disclosing the proportion of capital expenditure (CapEx) they invest in low-carbon and mitigation technologies.

No new oil and gas – yet many companies plan to look for more

The IEA's Net Zero by 2050 Roadmap sends a clear message that no new oil and gas fields can be approved for development if the 1.5°C goal of the Paris Agreement is to be met. This means that no company has room for new and not yet approved oil and gas projects. Despite this, evidence shows that companies intend to continue exploring for new reserves. One company, bp, was found to have pledged to undertake 'no new oil and gas exploration in new countries'. This is the most ambitious pledge of any company assessed but is still far from the requirement set out by the IEA to not develop any new fields – an action we need to see from all companies across the sector. Measures to limit fossil fuel supply must be accompanied by efforts to reduce demand for fossil fuels, but as discussed in key findings 2 and 3, oil and gas companies' efforts to support climate policy, increase customer demand for low-carbon energy and invest in clean technologies are just as inadequate.

Even with current reserves, carbon budgets will be blown

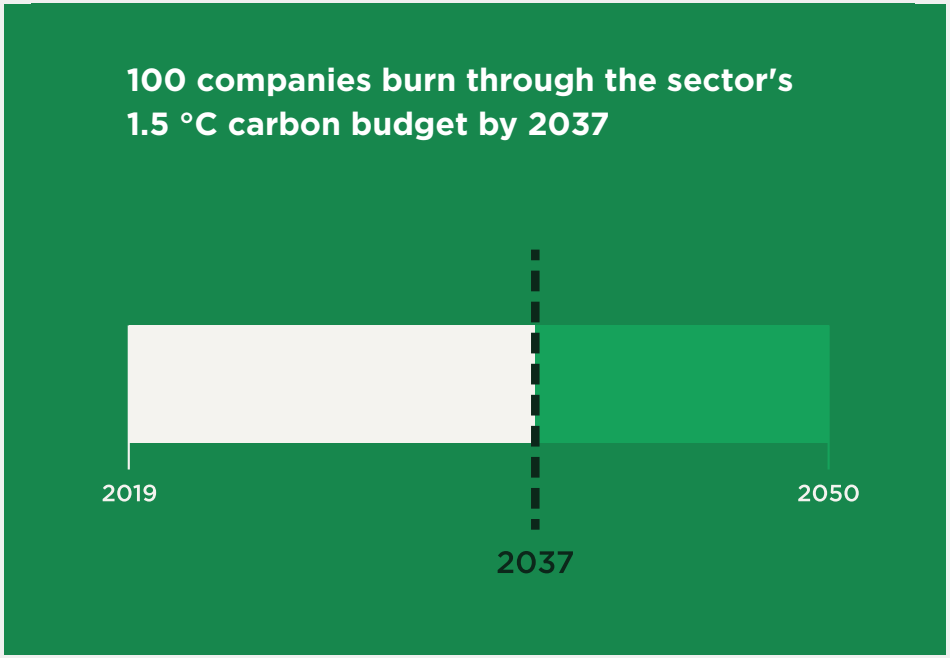
Our analysis shows that, from 2019 to 2050, the collective locked-in combustion emissions of the oil and gas companies in our sample is set to reach 393 gigatons (Gt). This is based on the emissions that will be produced from the combustion of the oil and gas projected to be extracted from the existing and already approved upstream assets of the companies in our sample. Under the 1.5°C scenario, the remaining budget for such combustion emissions – for the whole oil and gas sector – is significantly lower, at 292 Gt. This means the 80 extracting companies in our sample are already expecting to blow the whole sector's budget by more than a third.

The IEA's global carbon budget to stay below 1.5°C – for all sectors and human activity – is 500 Gt. This means that the oil and gas already expected from the keystone companies in this benchmark is on its way to consuming 80% of the total remaining global carbon budget.

National oil companies (NOCs), including those with international operations (INOCs), take up 54%, the seven oil majors (bp, Chevron, ConocoPhillips, Eni, ExxonMobil, Shell and TotalEnergies) a further 13% and independent companies 12%. Saudi Aramco and Gazprom have by far the largest projected combustion emissions. These two companies contribute 11% and 13% respectively of the projected 393 Mt.

Given how much carbon they are responsible for, if these companies do not radically change their actions, we cannot achieve the Paris Agreement goal. The only company assessed to have committed to reducing overall oil and gas production was bp, with an aim of a 40% reduction by 2030. Other companies such as Shell and TotalEnergies expect to see their oil production share decline, but this is undermined by plans to increase gas production. More companies need to make clear commitments, like bp's, to reduce oil and gas production and keep much of their oil and gas reserves in the ground to avert the climate crisis.

FIGURE 1



Smoke and mirrors: companies are deflecting attention from their inaction and ineffective climate strategies

Too many of the 100 companies deploy smoke-and-mirrors tactics to divert attention from their inaction and avoid accountability. They report that climate change is managed by boards, but only five out of the 100 are found to have the needed expertise. Companies' current climate change strategies are largely ineffective. And rather than rising to the challenge, they are using a lack of transparency and arms-length lobbying through trade associations to undermine climate action.

Need for greater transparency

Rather than rise to the challenge, many companies act half-heartedly, hide reality, and minimise or even deny the problem. The overall lack of comprehensive and comparable climate reporting across the companies assessed is evidence of hiding the truth.

Emissions data is poorly reported by the sector. The companies generally report some information on emissions from their direct operations, known as scope 1 and 2 emissions, but the reporting is often unclear about the operational boundaries and scope of emissions covered, or excludes significant emissions. For example, Saudi Aramco has only recently started reporting on scope 1 and 2 emissions outside of Saudi Arabia but continues to exclude some of its majority-owned subsidiaries such as S-Oil. More worryingly, just 33 companies disclose information on scope 3 emissions. Scope 3 emissions, which occur primarily from the combustion of oil and gas products by customers, account for approximately 80% of the 100 companies' total scope 1, 2 and 3 emissions.

FIGURE 2

Companies must support, not block, climate regulation

The 100 keystone companies have major influence and can use that to promote regulation that supports limiting temperature rise in line with the Paris Agreement goal. However, many of the companies assessed are directly and indirectly opposing such measures. 16 of the 100 companies have been found to directly oppose certain climate policies, including bp, Chevron, ConocoPhillips, ExxonMobil, Shell and TotalEnergies. 11 of the 16 companies that have directly opposed climate policy are headquartered in the USA .

There is also a worrying lack of transparency from companies on links with trade associations. Only 17 of the 100 companies have publicly stated policies on how they engage with trade associations on climate change positions. And 13 out of these 17 are still found to be participating in trade associations with climate negative positions, as board members or beyond membership fees. Out of the 20 US-headquartered companies assessed, 14 are part of the American Petroleum Institute (API), which pledged itself to fighting the Biden Administration's commitment to halt new oil and gas development on federal lands, as well as efforts to phase out gasoline and diesel-fuelled cars and trucks.

To stand any chance of achieving the 1.5°C temperature goal, influential companies must stop blocking climate policy, and instead support it, and ensure trade associations adopt the same policy and goals.

Downstream, 60 of the 90 companies have no public strategy to influence clients to reduce their emissions. Only 18 companies include emissions reduction in any engagement with clients. Of these, only two companies, Engie and Neste, have quantified emissions reduction targets for clients as a priority in their client engagement strategy. Only three companies, BHP, Engie and Eni, have strategies to influence a majority of clients – at least 60% of their total revenues – to reduce emissions. Most companies that offer low-carbon products lack promotional activity to influence clients. There are 32 companies assessed that offer low-carbon products or energy efficiency services but have no promotional campaigns. All keystone companies should use their influence across the value chain to drive change by suppliers and clients throughout the oil and gas sector ecosystem.

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Greatest contributors to climate change show limited recognition of emissions responsibility through targets and planning

Non-transparent, unambitious or non-existent targets and strategies from the greatest contributors to climate change show they are not accepting their responsibility for global emissions. Scope 3 emissions in particular are the biggest source of emissions for the sector – some companies' scope 3 emissions are equivalent to emissions of whole countries. Our analysis finds a systemic lack of scope 3 accountability, with only three companies having comprehensive emissions reduction targets.

Targets to reduce emissions fall short of the 1.5°C goal

To achieve the decarbonisation and energy transformation, oil and gas companies need to have short-, mid- and long-term ambitions to cut emissions both from their own operations for extracting and producing fuel and from the use of these fuels by their customers. But companies' current ambitions fall short of the requirements to meet the 1.5°C temperature goal.

The 100 keystone companies must reduce their emissions in line with the 1.5°C scenario if we are to avert the climate crisis. Some of the biggest companies assessed have scope 3 emissions equivalent to some of the largest emitting countries in the world. For example, Saudi Aramco's 2019 scope 1, 2 and 3 emissions were greater than Germany, France, Italy and Spain's combined emissions. ExxonMobil's 2019 scope 3 emissions from petroleum sales were equivalent to Canada's emissions in the same year. Chevron's total emissions are roughly equal to those of the international shipping sector. The scope 1, 2 and 3 emissions of the ten biggest oil and gas producers account for almost 50% of the combined scope 1, 2 and 3 emissions of all 100 companies assessed. These companies are: Chevron, China National Petroleum Corporation, China Petroleum & Chemical Corporation (Sinopec), ExxonMobil, Gazprom, Marathon Petroleum, National Iranian Oil Company, Rosneft, Saudi Aramco and Shell.

Although 16 companies have set some form of target to reduce the emissions from the use of their products (scope 3 emissions), many of these targets could not be assessed as they included offsets to achieve emissions reductions and did not qualify under the ACT methodology. Others lacked sufficient information to allow for an assessment of their ambition or progress. Just three of the companies have set clear and comprehensive scope 1, 2 and 3 emissions reduction targets, without offsets, that could be assessed. Eni has the most ambitious scope 1, 2 and 3 emissions reduction target, while Marathon Oil has the best 1.5°C-aligned target for a 50% reduction in scope 1 and 2 emissions from oil and gas production and refining by 2025 from 2019 levels.

All companies need to scale up the ambition for their targets to meet the 1.5°C scenario and cover all emissions, together with intermediate targets to incentivise immediate action. Other stakeholders and actors are also beginning to signal their preparedness to hold companies to account on

their targets. In May 2021, the Dutch Court ordered Shell to increase its targeted emissions reduction to 45% by 2030, and shareholder activism at ExxonMobil, ConocoPhillips and Chevron's annual general meetings in 2021 has led to the appointing of new board members and increasing the ambition of emissions reduction targets.

Transition planning is falling short

Companies display inadequate transition planning and an inconsistent approach to climate action with the majority of companies fall short on providing sufficient detail. Oil and gas sector companies will require substantial changes to their businesses to thrive in a low-carbon world, over the short, medium and long term. However, only 13 companies out of the 100 have low-carbon transition plans that extend at least 20 years into the future. Four of these are the majors Eni, Equinor, Shell and TotalEnergies.

A shocking 46 companies' transition plans provide either no time-bound, measurable indicators of how they will be successful low-carbon businesses in the future or only provide minimal detail. Petrobras is one such example, with its stated long-term aims to operate in the petrochemicals, renewables and biofuels markets but with no targets or published planning to support its intentions. ExxonMobil similarly states carbon capture and storage (CCS) as a major part of its climate change plan but lacks a clear road map for the deployment and commercialisation of the technology. A further 13 companies have not indicated any plans or considerations to reduce emissions or transition their business in the short term.

Including financial projections and using an internal carbon price enables companies to transition in a controlled manner, reducing risks to the business. But again, a shocking 59 companies provide no financial content in their transition plan or have no transition plan at all. 63 of the companies do not report use of an internal carbon price. Some companies, however, do exhibit better climate-related financial behaviours. Equinor, for example, conducts price sensitivity analysis for its project and asset portfolio, provides information on CapEx to be employed and on expected rate of return for renewables. Repsol uses an internal carbon price of USD 25/tonne (t) which it will increase to USD 40/t in 2025. However, the IEA's NZE scenario expects advanced economies carbon price to reach USD 75/t in 2025. The company also clearly describes the amount of CapEx to be employed in low-carbon activities as well as internal rate of return for renewables.

Empty promises: companies' capital expenditure in low-carbon technologies not nearly enough

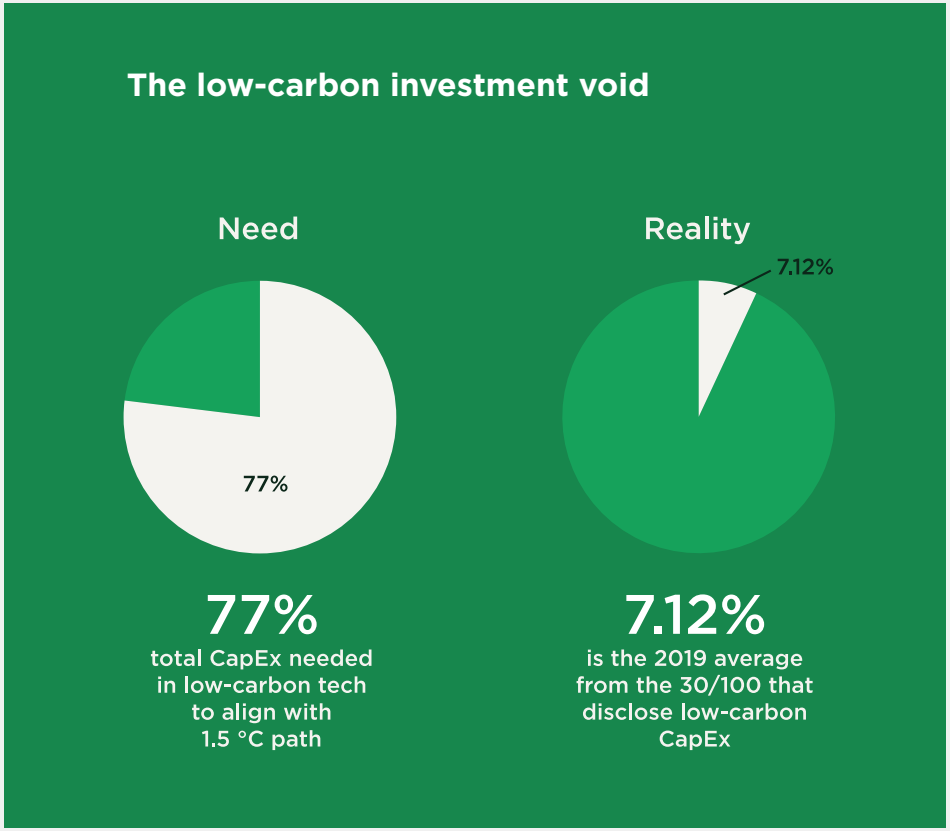
Despite their stated low-carbon commitments, companies aren't walking the talk when it comes to investment in technology to drive the transition. Scenario analysis and investment in a low-carbon future is shockingly low across the 100 companies. Only 30 companies reported their proportion of capital expenditure (CapEx) for low-carbon and mitigation technologies in 2019. Further, existing low-carbon revenue streams are insignificant and the share of CapEx companies are allocating to low-carbon technologies is entirely insufficient to decarbonise at the scale and pace required.

Low-carbon investments and revenues must increase to transform oil and gas companies

Companies need to be making significant investments to shift their business activities towards low-carbon compatible ones. The benchmark assessment estimates that oil and gas companies should be investing 77% of their total CapEx in low-carbon technologies to align with a 1.5°C scenario and accelerate their transition from being purely oil and gas companies to integrated energy companies. Companies are not providing evidence of sufficient levels of low-carbon investment to prepare for the future. Coupled with companies' lack of transparency, this leaves investors and stakeholders in the dark about companies' contributions, progress and action towards the low-carbon transition.

Only 30 of the 100 companies assessed reported the proportion of CapEx they invested in low-carbon and mitigation technologies in 2019. Only four companies invested more than 10% of CapEx in low-carbon technologies in 2019, with the clear leaders being Naturgy and Neste,

FIGURE 3



which invested 64% and 48% of CapEx in low-carbon technologies respectively. 12 companies published information on their low-carbon CapEx investment plans until 2024, with eight of these headquartered in Europe.

The IEA's NZE scenario sees almost 50% of the CO2 reductions by 2050 coming from technologies which are currently in the demonstration or prototype phase. Research and development (R&D) into technologies such as low-carbon intensity hydrogen or geothermal power offers oil and gas companies a way to be at the forefront of new clean energy markets. Indeed, low-carbon R&D is stated by many companies as being at the heart of their transition plans. However, this is undermined by companies' lack of disclosure on the topic. While R&D expenditure information was found for 51 companies, only 17 of these companies report information on the proportion of this expenditure dedicated to low-carbon technologies in 2019. Eni, Neste and Suncor are the leaders in overall R&D investment reporting, with around 50% of their R&D expenditure going into R&D for low-carbon technologies.

Just 11 companies reported some information on low-carbon revenue in 2019. The low-carbon revenue levels for these companies are very low, with the exception of Cosmo, Neste and TotalEnergies. Only one company, Engie, has set out what proportion of its future revenue is expected to come from low-carbon sources.

One crucial technology area for the sector is carbon capture, use and storage (CCUS) and CO2 removal (CDR) technologies. While some of the companies assessed have public messages on CCUS and CDR, few companies show evidence of R&D that is adequate for the speed at which these technologies need to be scaled up to meet the 1.5°C scenario. Only four companies disclosed information on the proportion of their R&D expenditure in CCUS or CDR in 2019. These include Chevron, Petrobras and PTT, which all invested less than 2%, and TotalEnergies, which invested 10.3%. Companies are expected to dedicate 5% of their R&D expenditure into CCUS and CDR technologies under a 1.5°C scenario.

Scenario analysis

Climate scenario analysis is a process to identify and assess how climate-related trends and changes lead to opportunities and risks (both transition and physical risks) that may affect a company's business, strategies and financial performance. When properly used, scenario analysis gives confidence to investors, policy-makers and other stakeholders that companies have considered appropriate information to understand the impacts of a range of scenarios to the business and make a resilient low-carbon transition strategy. The companies assessed in the benchmark, however, do not show enough detail of their use of scenario analysis that can assure stakeholders that they are adequately preparing for the low-carbon transition.

Of the 100 companies assessed, just 55 indicate that they undertake climate scenario analysis. Of these, 29 provide limited or no detail on the scope of analysis. Just 11 companies express the results in terms of the financial impact on their business. The Task Force on Climate-related Financial Disclosures (TCFD) recommendations, backed for mandatory reporting by the G7 in June 2021, note that "organisations with more significant exposure to transition risk and/or physical risk should undertake more rigorous qualitative and, if relevant, quantitative (...) analysis". All companies in the oil and gas sector have transition and physical risks and should prepare for the impact of these by using a 1.5°C scenario analysis.

The TCFD further highlights that "it is important to understand the critical parameters and assumptions that materially affect the conclusions drawn". Nine companies state that they are undertaking scenario analysis but do not reference any of the conditions they have considered, while 36 companies do consider a range of changing conditions in their scenario analysis but fail to report details. Companies seriously need to improve the quality of their scenario analysis not just to build stakeholder confidence but also to be able to draw robust conclusions to support their transition planning.

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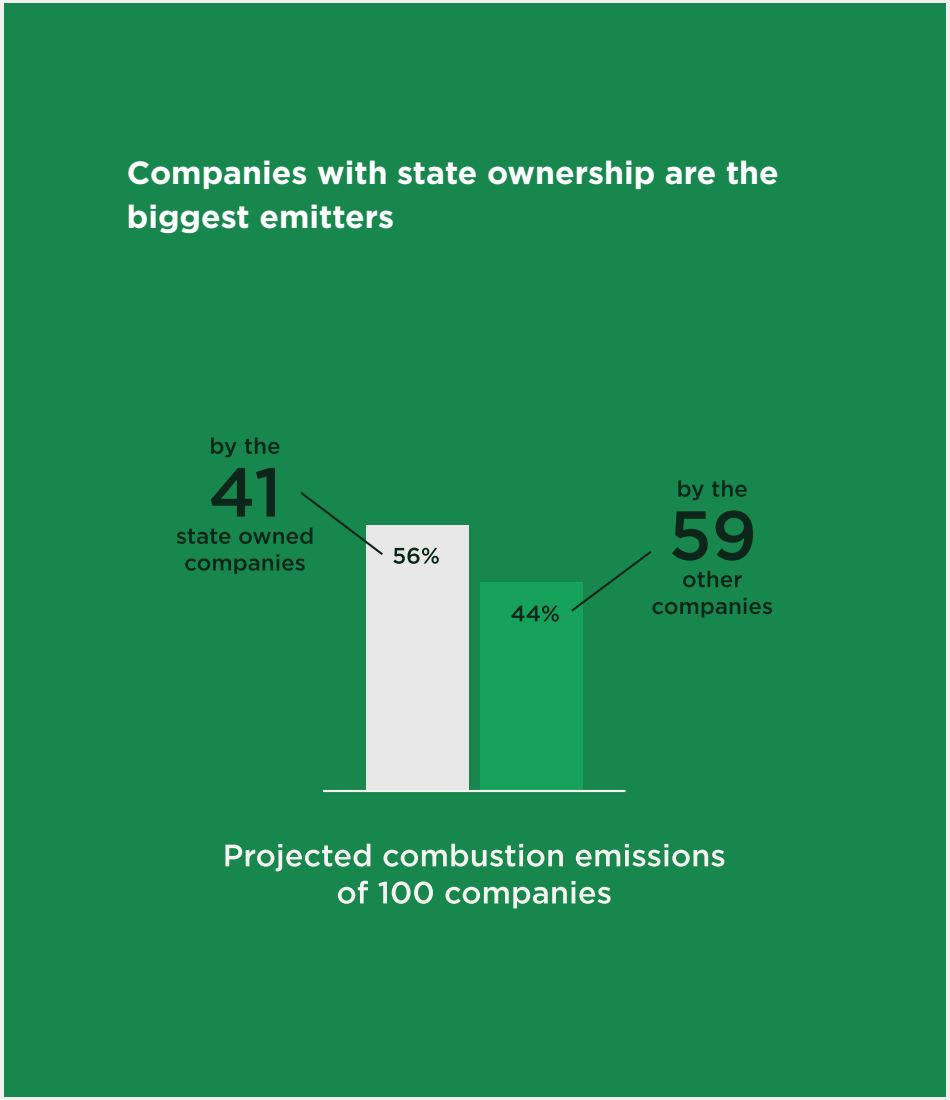
National oil companies: big emissions, little transparency, virtually no accountability

Companies with state ownership are slower to transition than the Majors and Independents. This poor performance is an even bigger risk to climate ambition than that of publicly listed and private companies. Companies with state ownership account for majority of current and expected emissions in the sector. Many of the states involved have made no commitment to net-zero emissions and there is limited ability for non-government stakeholders to push for change. Governments of these states must raise ambition and promote Paris-aligned action of the companies.

National oil companies account for majority of current and expected emissions

Companies that are fully or majority state-owned account for the majority of current and expected emissions in the sector. These companies are known as national oil companies (NOCs), when they concentrate on domestic production, and international national oil companies (INOCs), when they have significant domestic and international operations. Of the 100 companies in the benchmark, 41 are NOCs or INOCs, but these accounted for 56% of the total scope 1, 2 and 3 emissions of all the 100 companies in 2019. Of the top ten emitting companies in 2019, six were NOCs or INOCs, namely China National Petroleum Corporation (CNPC), China Petroleum & Chemical Corporation (Sinopec), Gazprom, National Iranian Oil Company (NIOC), Rosneft and Saudi Aramco.

FIGURE 4



NOCs and INOCs are also set to play a pivotal role in future emissions, as they control 71% of the reserves of the 100 companies. Over two-thirds (68%) of the emissions from 2019 to 2050 are expected to come from NOCs and INOCs. This estimate is based on the emissions associated with the combustion of oil and gas that is extracted by these companies, i.e. scope 3 emissions, and it covers only those 80 companies out of the 100 with upstream oil and gas extraction activities. Out of these 80 companies, 40 were NOCs or INOCs.

NOCs and INOCs are laggards in transition planning

NOCs and INOCs reducing their emissions is key to the whole sector's transition. Unfortunately, these companies show the least comprehensive plans to shift to a low-carbon economy. NOCs' average score on all aspects of transition planning was the lowest of any type of company. Of the 17 companies out of the 100 that did not indicate any plans to manage or reduce emissions, 10 were NOCs. Only 8 of the 41 NOCs and INOCs use an internal carbon price, and three of these do not disclose the value of the carbon price used. Only four NOCs and INOCs – Equinor, Pertamina, Petrobras, and PTT – set targets with enough rigour to be assessed for their alignment with a 1.5°C scenario. Equinor's target was the only one assessed to be 1.5°C-aligned and this target was limited to upstream scope 1 and 2 emissions.

Poor performance on transition planning and targets by NOCs and INOCs may reflect the limited climate ambition of the states that own or influence them and that often play a key role in setting the strategic direction of these companies. As per The Energy and Climate Intelligence Unit's (ECIU) Net-Zero Tracker, none of the NOCs and INOCs are headquartered in states with a legally binding 2050 net-zero target. However, four are headquartered in states with a policy document targeting net zero by 2050 and a further five are headquartered in China, which has stated its intention to achieve net zero by 2060. Five more companies are in states that have announced they have a 2050 target under discussion. This means 27 NOCs and INOCs are located in countries with no planned net-zero target, which could help explain the limited climate ambition of many of these companies.

Sparse signs of low-carbon diversification

Many of the NOCs and INOCs are critical to their countries' economies. Ever-increasing oil and gas production isn't compatible with a low-carbon economy, and as discussed in the Natural Resource Governance Institute's (NRGI) report Risky Bet: National Oil Companies in the Energy Transition, if NOCs and INOCs follow their current course, they will invest more than USD 400 billion in oil and gas projects that will only break even if global temperatures rise more than 2°C.

For NOCs and INOCs to continue to provide revenues to their states within a 1.5°C world, it is essential that they diversify their business models. Only three of the NOCs and INOCs reported their low-carbon revenue for 2019, and for all three it contributed less than 1% of total 2019 revenue. This benchmark assessed if and how companies are developing low-carbon business activities in three areas: low-carbon energy, energy

efficiency and carbon capture, use and storage (CCUS). Only 18 of 41 NOCs and INOCs were awarded some points here, indicating that more than half of the NOCs and INOCs have no clear plans to develop low-carbon businesses. Some notable exceptions include Pertamina, which is targeting 3.4 GW of renewable capacity and 1,300 million megawatt-hours (MWh) of battery product capacity by 2026, PTT, which is targeting 8 GW of renewable capacity by 2030 as well as electric vehicle charging and energy solutions services, and Equinor, which has set out time-bound plans with deployment schedules to develop renewables, carbon capture and storage (CCS) and hydrogen.

WBA's Just Transition Assessments

The Paris Agreement-aligned low-carbon transition must go hand in hand with a socially just and equitable transition. As influential actors in the ecosystem, these keystone oil and gas companies must address both their responsibility to reduce emissions and do so with respect for human and workers' rights. As the IEA's Net Zero by 2050 Roadmap summarises, "The transition to net zero is for and about people." A just transition will be achieved in dialogue between companies, workers and governments. WBA will publish findings on the same 100 oil and gas keystone contributions to a just transition later in 2021.

Ranking

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Ranking		Total score out of 100		ACT rating performance, narrative and trend		
1	Neste	57.4 / 100		8.1 / 20	B	=
2	Engie	56.9 / 100		7.9 / 20	B	=
3	Naturgy Energy	44.8 / 100		6.8 / 20	C	+
4	Eni	43.6 / 100		7.3 / 20	C	=
5	bp	42.9 / 100		6.0 / 20	C	+
6	Total	40.7 / 100		6.1 / 20	C	=
7	Repsol	38.1 / 100		5.0 / 20	C	=
8	Equinor	37.9 / 100		4.9 / 20	C	=
9	Galp Energia	36.4 / 100		4.3 / 20	C	=
10	Royal Dutch Shell	34.3 / 100		3.4 / 20	C	=
11	ENEOS Holdings	32.4 / 100		2.6 / 20	C	=
12	Origin Energy	29.3 / 100		7.3 / 20	D	−
13	Marathon Petroleum Corporation	24.8 / 100		4.4 / 20	D	=
14	BHP Group	22.1 / 100		4.3 / 20	D	−
15	Hellenic Petroleum	20.7 / 100		3.7 / 20	D	−
15	OMV	20.7 / 100		3.7 / 20	D	−

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Ranking		Total score out of 100		ACT rating performance, narrative and trend		
17	MOL Magyar Olajes Gazipari Nyrt	20.2 / 100		2.5 / 20	D	=
18	Ampol Limited	18.8 / 100		0.9 / 20	D	+
19	SK Innovation	18.6 / 100		2.8 / 20	D	–
19	YPF	18.6 / 100		2.8 / 20	D	–
21	Compania Espanola de Petroleos SAU (CEPSA)	17.9 / 100		2.5 / 20	D	–
22	CPC Corporation, Taiwan	17.6 / 100		2.4 / 20	D	–
23	Ecopetrol	17.4 / 100		2.3 / 20	D	–
24	Formosa Petrochemical Corp	17.1 / 100		2.2 / 20	D	–
24	Cosmo Energy Holdings	17.1 / 100		2.2 / 20	D	–
26	California Resources Corporation	16.9 / 100		2.1 / 20	D	–
26	Polski Koncern Naftowy Orlen (PKN Orlen)	16.9 / 100		2.1 / 20	D	–
28	Reliance Industries	16.7 / 100		1.0 / 20	D	=
29	Bharat Petroleum Corporation	16.0 / 100		1.7 / 20	D	–
30	Santos	15.7 / 100		1.6 / 20	D	–
30	Inpex	15.7 / 100		1.6 / 20	D	–
32	Saras	15.2 / 100		1.4 / 20	D	–
33	Qatar Petroleum	14.5 / 100		1.1 / 20	D	–
34	Varo Energy	12.4 / 100		0.2 / 20	D	–

Ranking

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Ranking		Total score out of 100		ACT rating performance, narrative and trend		
35	ConocoPhillips		8.3 / 100	3.5 / 20	E	
36	Suncor Energy		8.1 / 100	3.4 / 20	E	
37	Petroleo Brasileiro (Petrobras)		7.9 / 100	3.3 / 20	E	
37	PTT		7.9 / 100	3.3 / 20	E	
37	Marathon Oil		7.9 / 100	3.3 / 20	E	
40	Chesapeake Energy Corp		7.6 / 100	3.2 / 20	E	
40	Valero Energy		7.6 / 100	3.2 / 20	E	
42	Sasol		7.4 / 100	3.1 / 20	E	
43	EOG Resources		6.9 / 100	2.9 / 20	E	
43	Occidental Petroleum		6.9 / 100	2.9 / 20	E	
45	Chevron Corporation		6.4 / 100	2.7 / 20	E	
46	Hess Corporation		6.2 / 100	2.6 / 20	E	
47	Ultrapar		5.5 / 100	2.3 / 20	E	
47	Gazprom		5.5 / 100	2.3 / 20	E	
49	Devon Energy Corp		5.2 / 100	2.2 / 20	E	
49	Tatneft		5.2 / 100	2.2 / 20	E	
49	Pertamina		5.2 / 100	2.2 / 20	E	
49	Exxon Mobil		5.2 / 100	2.2 / 20	E	

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Ranking		Total score out of 100		ACT rating performance, narrative and trend		
53	Lukoil		5.0 / 100	2.1 / 20	E	
54	China Petroleum and Chemical Corporation Limited (Sinopec)		4.8 / 100	2.0 / 20	E	
54	Apache Corporation		4.8 / 100	2.0 / 20	E	
56	Petroliam Nasional Bhd (PETRONAS)		4.5 / 100	1.9 / 20	E	
56	Pioneer Natural Resources		4.5 / 100	1.9 / 20	E	
58	Idemitsu Kosan		4.3 / 100	1.8 / 20	E	
59	Naftogaz		4.0 / 100	1.7 / 20	E	
60	Indian Oil Corporation (IndianOil)		3.8 / 100	1.6 / 20	E	
61	Rosneft		3.6 / 100	1.5 / 20	E	
61	Cenovus Energy		3.6 / 100	1.5 / 20	E	
61	Targa Resources		3.6 / 100	1.5 / 20	E	
64	China National Petroleum Corporation (CNPC)		3.3 / 100	1.4 / 20	E	
64	HollyFrontier Corp		3.3 / 100	1.4 / 20	E	
64	Viva Energy Group		3.3 / 100	1.4 / 20	E	
67	Oil and Natural Gas Corporation (ONGC)		3.1 / 100	1.3 / 20	E	
67	GAIL (India)		3.1 / 100	1.3 / 20	E	
69	Woodside Petroleum		2.9 / 100	1.2 / 20	E	
69	China National Offshore Oil Corporation (CNOOC Group)		2.9 / 100	1.2 / 20	E	

World Benchmarking Alliance

Ranking		Total score out of 100		ACT rating performance, narrative and trend		
69	Petroleum Development Oman (PDO)	2.9 / 100		1.2 / 20	E	
72	Canadian Natural Resources	2.6 / 100		1.1 / 20	E	
72	State Oil Company of Azerbaijan Republic (SOCAR)	2.6 / 100		1.1 / 20	E	
72	Sonangol	2.6 / 100		1.1 / 20	E	
72	Phillips 66	2.6 / 100		1.1 / 20	E	
72	Novatek	2.6 / 100		1.1 / 20	E	
77	Emirates National Oil Company (ENOC)	2.4 / 100		1.0 / 20	E	
77	NK KazMunayGaz	2.4 / 100		1.0 / 20	E	
77	Kuwait Petroleum Corporation (Q8)	2.4 / 100		1.0 / 20	E	
80	National Iranian Oil Company (NIOC)	2.1 / 100		0.9 / 20	E	
80	Saudi Aramco (SABIC)	2.1 / 100		0.9 / 20	E	
82	Sonatrach	1.9 / 100		0.8 / 20	E	
83	Nigerian National Petroleum Corporation (NNPC)	1.7 / 100		0.7 / 20	E	
84	Petroleos Mexicanos (Pemex)	1.4 / 100		0.6 / 20	E	
84	Petroleos de Venezuela (PDVSA)	1.4 / 100		0.6 / 20	E	
86	GS Holdings	1.2 / 100		0.5 / 20	E	
86	Surgutneftegas	1.2 / 100		0.5 / 20	E	
86	PetroSA	1.2 / 100		0.5 / 20	E	

Ranking		Total score out of 100		ACT rating performance, narrative and trend		
86	TurkmenGaz		1.2 / 100	0.5 / 20	E	
90	Egyptian General Petroleum Corporation (EGPC)		1.0 / 100	0.4 / 20	E	
90	Petroecuador		1.0 / 100	0.4 / 20	E	
90	Enterprise Products Partners		1.0 / 100	0.4 / 20	E	
90	Sinochem Energy		1.0 / 100	0.4 / 20	E	
90	Türkiye Petrol Rafinerileri		1.0 / 100	0.4 / 20	E	
90	Shaanxi Yanchang Petroleum Group		1.0 / 100	0.4 / 20	E	
96	Abu Dhabi National Oil Company (ADNOC)		0.7 / 100	0.3 / 20	E	
96	National Oil Corporation of Libya		0.7 / 100	0.3 / 20	E	
98	NGL Energy Partners		0.2 / 100	0.1 / 20	E	
98	Basra Oil Company		0.2 / 100	0.1 / 20	E	
100	PBF Energy		0.0 / 100	0.0 / 20	E	

Module 1: Targets

Module 1, targets, assesses companies' public facing emissions reduction targets as these are the north star for navigating the low-carbon transition. They provide a framework by which companies can align their strategy, capital expenditure (CapEx) and research and development (R&D) to deliver emissions reductions. Public facing targets demonstrate the credibility of companies' climate ambitions to stakeholders including investors, consumers and regulators.

It is crucial that targets in the oil and gas sector are set for scope 1, 2 and 3 emissions. Scope 1 emissions are the company's direct emissions from owned or controlled sources. Scope 2 emissions come from the generation of purchased electricity, steam, heating and cooling consumed by the company. Scope 3 emissions are all other indirect emissions that occur in the company's value chain. The majority of the emissions for this sector come from combustion of the companies' fossil fuel products (i.e. scope 3 emissions).

Therefore, this module assesses:

- the alignment of the company's scope 1 and 2 emissions reduction targets with its 1.5°C pathway (indicator 1.1, weighted 2-8% of the performance assessment)
- the alignment of the company's scope 1, 2 and 3 emissions reduction targets with its 1.5°C pathway (indicator 1.2, weighted 4-10% of the performance assessment)
- the time horizon and interval spacing of all of the company's targets (indicator 1.3, weighted 2% of the performance assessment)
- the company's current progress towards emissions reduction targets (indicator 1.4, weighted 1% of the performance assessment)

The module accounts for 15% of the total performance assessment score for all companies across all activity scopes (fully or semi-integrated; pure up-, mid- or downstream). For pure upstream companies, the weighting of this module is greater for scope 1 and 2 oil and gas emissions reductions. For integrated companies, the weighting of this module is greater for all scope 1, 2 and 3 emissions (including the downstream in-use phase). The median score for this module is 0%.

Overall, the standard of target setting was poor for all 100 companies assessed. **Only 36 of the 100 companies achieved any score at all for this module – meaning 64 companies scored 0**. For 32 companies, we found no public facing commitments on emissions reductions at all. For the remaining 68 companies, many of their targets were not assessable with the ACT methodology for the following reasons:

- Targets with no details on the emissions reduction expectation, i.e. no percentage change between the base and end years of the targets, are not assessable.
- Targets that take account of emissions reductions achieved by others outside the company (i.e. via offsets or as avoided emissions due to fuel displacement with lower intensity fuels) are not assessable.

- Targets that assess metrics not directly related to reducing emissions from oil and gas activities are not assessable.
- Targets that do not state the base year from which the reduction is to be measured, as was the case for 13 companies, are also not assessable.

Only 42 companies had a target assessable under the ACT methodology. Many of these targets covered just part of the company's product portfolio or just emissions in one geographic region.

Only 11 companies had targets with commitments to reduce emissions from the use of their products. Just three companies publicly committed to scope 1, 2 and 3 emissions reduction targets covering their total energy product portfolio that look out to at least 2024 and that do not rely on achieving at least some of that reduction under offsetting arrangements.

Having a target is only part of the story. Targets must be ambitious enough to align with companies' 1.5°C pathways. The best aligned scope 1, 2 and 3 target in this benchmark, by Eni, represents around a 5% commitment gap five years after the reporting year used for these assessments of 2019 (i.e. by 2024). Excluding forestry offsets, Eni's target is to reduce emissions by 92% by 2050 from 2018 levels. The best aligned oil and gas scope 1 and 2 target has no commitment gap. This is a commitment by Marathon Oil Company to reduce emissions by 50% by 2025 from 2019 levels. However, the company is not on track to achieve this target.

Targets to reduce scope 1 and 2 emissions during the production of oil and gas products cover issues of operational efficiency and reducing resource waste such as fugitive methane gas and venting and flaring. Methane is a relatively short-lived but very powerful greenhouse gas. Companies have many incentives to reduce methane emissions – not least because these reductions provide them with more product to sell and because many jurisdictions are setting stricter laws obliging them to cut methane emissions. Six companies have only set themselves methane emissions reduction targets. These targets were not taken into consideration for indicator 1.1 because this indicator assesses alignment of the company's total scope 1 and 2 emissions from oil and gas with the company's 1.5°C pathway by 2024. Instead, these targets were assessed under indicators 1.3 and 1.4, which determine whether companies are looking far enough out to the future with regularly spaced intermediate targets and whether the companies are on track to achieve the targets they have set.

Unsurprisingly, given the importance of demonstrating performance to public commitments, companies with targets did perform well on indicator 1.4. Only five companies had assessable targets looking out to 2050.

Public facing targets set by companies hold their management to account for the success of their business strategies. Emissions reduction targets are no different to any other target. If oil and gas companies do not publish meaningful emissions reduction targets – which include the in-use phase of their products – it indicates either they are not committed to reducing the total emissions impact of their business or they do not trust themselves to be able to meet such public commitments, preferring to remain silent on the issue. Silence is not enough. Stakeholders need public commitments for much faster action to ramp down emissions.

Module 2: Material Investment

Module 2, material investment, assesses action to reduce emissions from the company's operations. Emissions from oil and gas companies primarily occur when their products are combusted (i.e. scope 3 in-use emissions) but significant emissions are also generated during product extraction and processing (scopes 1 and 2). Comparing the company's past and projected scope 1 and 2 emissions intensity trends with its 1.5°C pathway provides a good measure of its transition progress. It is also important to assess the volume of scope 3 emissions expected from the company's current and already approved extraction assets compared to the volume available under the company's 1.5°C pathway. Comparing capital expenditure (CapEx) allocated to low-carbon technologies against the total CapEx also provides a good measure of action on transition.

Therefore, this module assesses:

- the company's scope 1 and 2 emissions intensity trends for the past five years and for the next five years (indicators 2.1 and 2.3, weighted 2-5% and 3-8% of the performance assessment respectively)
- the company's locked-in scope 3 emissions until 2050 (indicator 2.2, weighted 0-8% of the performance assessment)
- the company's proportion of unapproved projects outside its carbon budget (indicator 2.4, weighted 2-8% of the performance assessment)
- the company's CapEx on low-carbon and carbon removal technologies (indicators 2.5 and 2.6, each weighted 0-6% of the performance assessment)
- This module accounts for between 5% (for downstream companies) and 40% (for upstream companies) of the total performance assessment score. The median score for this module is 6.9%.

The 100 companies assessed have not made adequate progress in reducing scope 1 and 2 emissions intensity from their oil and gas operations. Between 2014 and 2019, these keystone companies on average reduced their scope 1 and 2 emissions intensity at only 10% of the rate needed compared to the 1.5°C pathway. Half of the companies either had increasing scope 1 and 2 emissions intensity from 2014 to 2019, or had such limited emissions intensity reduction that they were assessed as being 0% aligned with their 1.5°C pathways. Only two companies, Marathon Petroleum and Origin Energy, have reduced emissions at the rate required by their 1.5°C pathways.

In the absence of useful forecast data from the companies, the picture is the same looking forward, with over half the companies estimated to have either increasing scope 1 and 2 emissions intensity between 2019 and 2024 or no emissions intensity reduction. In the absence of real transparency from the sector on emissions, asset-level data from GlobalData was used to complete the emissions modelling and enable assessment of these indicators.

The locked-in emissions calculation used in these assessments assumes companies will use all reserves from existing or approved fields. **For 59 of the 80 companies from the sample with oil and gas extraction activities, the projected extraction from 2019 to 2050 from existing**

and currently approved assets is expected to result in cumulative scope 3 emissions volumes that exceed the volume available as per the company's 1.5°C pathway. This includes six out of the seven oil majors and 80% of the national oil companies (NOCs) and NOCs with international operations (INOCs) assessed. Of the companies projected to remain within their carbon budget by 2050, all are on course to exhaust more than half of their budget.

Combined, the locked-in emissions budget for the 80 companies with upstream oil and gas assets will use up nearly 80% of the International Energy Agency's (IEA) remaining overall global CO2 budget – for all sectors and human activity – of 500 gigatonnes (Gt). NOCs and INOCs make up 54% of this overall budget, the seven oil majors (bp, ConocoPhillips, Chevron, Eni, ExxonMobil, Shell and TotalEnergies) 13% and independent companies 12%.

While the locked-in emissions indicator assesses existing and approved reserves, the ACT methodology also assesses the proportion of unsanctioned projects (discovered but not yet approved for development) outside a company's carbon budget. The IEA's Net Zero by 2050 Roadmap finds that no new oil and gas fields should be approved for development if the 1.5°C goal of the Paris Agreement is to be achieved. **All companies therefore score zero on this indicator because there is no remaining carbon budget for unsanctioned oil and gas projects**. No company with upstream oil and gas activities was found to have committed to ending all exploration for new oil and gas fields.

To reduce their emissions and ensure continued revenue in a low-carbon economy, oil and gas companies must invest heavily in low-carbon and mitigation technologies. Companies were assessed on recent and planned CapEx in these technologies between 2019 and 2024. Of the 100 companies assessed, 30 reported the proportion of CapEx they invested in low-carbon and mitigation technologies in 2019. Only four companies invested more than 10% of CapEx in low-carbon technologies in 2019, with the two leaders being Neste and Naturgy. Neste invested 48% in low-carbon technologies in 2019 and 67% in 2020, whilst Naturgy invested 64% in 2019 and 38% in 2020. **However, no company invested or stated that it planned to invest 77% or more of its CapEx in low-carbon and mitigation technologies.** This is the level of low-carbon CapEx expected to align with the IEA's 1.5°C scenario and to truly accelerate the transition of these companies away from oil and gas to becoming integrated energy companies.

Twelve companies published information on low-carbon CapEx investment plans looking out to 2024, with eight of these headquartered in Europe. Five of the seven oil majors were transparent about their planned CapEx in low-carbon and mitigation technologies, with bp expected to invest 16% in 2024, Eni 20%, ExxonMobil just 3.3%, Shell 8.3% and TotalEnergies 17.5%. These amounts are far behind the 77% expected to align with the 1.5°C scenario. The largest NOCs and INOCs: China National Petroleum Corporation (CNPC), Gazprom, National Iranian Oil Company (NIOC), Rosneft and Saudi Aramco, all did not disclose their planned low-carbon CapEx.

Recent and planned CapEx in carbon capture, use and storage (CCUS) and CO2 removal (CDR) technologies was also assessed. These technologies are at the heart of many oil and gas companies' climate strategies, enabling them to reduce emissions from their oil and gas activities, as well as providing new business opportunities to capture, transport, store and utilise carbon. However, few companies disclose investments in this area. Occidental Petroleum's net-zero strategy is almost entirely reliant on CCUS but it provides no information on how it is financing these technologies.

Only four companies reported the proportion of their CapEx invested in CCUS and CDR technologies in 2019, and for each company it represented less than 0.8% of total CapEx. Although Shell did not disclose a CCUS and CDR CapEx figure for 2019, the company has reported this for 2020. Chevron, Hess and TotalEnergies are the only companies that report forward-looking CapEx in CCUS and CDR, but all fall far below the expectation of 5% of overall CapEx to be dedicated to CCUS and CDR technologies to be aligned with a 1.5°C scenario.

Module 3: Intangible Investment

Module 3, intangible investment, assesses companies' research and development (R&D) expenditure in low-carbon technologies and mitigation technologies, which is essential for oil and gas companies to transition. Low-carbon technologies are technologies that result in substantial greenhouse gas emissions reductions in other sectors of the economy, such as renewables or hydrogen derived from low-carbon sources, whereas mitigation technologies are technologies that reduce the carbon footprint of supplied energy, such as technologies that prevent methane leakages.

This module assesses:

- the company's research and development (R&D) investment in low-carbon technologies that can mitigate climate change, relative to overall company capital expenditure (CapEx) (indicator 3.1, weighted 2-5% of the performance assessment)
- the company's investment in carbon removal technologies (indicator 3.2, weighted 0-5% of the performance assessment). Downstream only companies were not scored on this indicator, as these technologies are not crucial for their decarbonisation.

In the absence of an appropriate 1.5°C scenario expectation for low-carbon and mitigation R&D, the CapEx benchmark of 77% was used as a proxy. This module accounts for between 2% (for downstream companies) and 10% (for up- and midstream companies) of the total performance assessment score. Given R&D is a key tool to reduce the costs of technologies in general, it is appropriate to expect low-carbon and mitigation R&D to be focused on reducing costs of these technologies that will enable the company to be successful in a low-carbon economy. However, this assessment found that most companies disclose limited information on their low-carbon and mitigation R&D expenditure, and those that do are not investing enough. The median score for this module is 0%.

51 companies were found to report information on their R&D expenditure; however, only 22 report information on how much of this is dedicated to low-carbon and mitigation technologies. Four companies that did disclose some information on low-carbon and mitigation R&D did not disclose overall R&D expenditure, so these could not be assessed. Lack of disclosure undermines the credibility of many companies that state R&D in new technologies is a key part of their climate strategy. For example, ExxonMobil states it is developing "breakthrough solutions in areas such as carbon capture, biofuels, hydrogen", but does not give any indication of what proportion of its USD 1.2 billion R&D expenditure in 2019 was dedicated to this.

Where information has been provided by companies on their low-carbon and mitigation R&D expenditure, it still shows lack of ambition. **Only four companies were found to have invested more than 50% of their 2019 R&D expenditure in low-carbon and mitigation technologies.** For the 18 companies that could be assessed, the median R&D expenditure

in low-carbon and mitigation technologies was 19%. Considering that many of the companies that do not disclose this information may have no significant low-carbon and R&D expenditure, the sector as a whole may be doing much worse.

As with CapEx, this assessment also looked specifically at the proportion of overall R&D expenditure dedicated to carbon capture, use and storage (CCUS) and CO2 removal (CDR) technologies. Only four companies, Chevron, Petrobras, PTT and TotalEnergies, could be assessed on this indicator. Chevron, Petrobras and PTT all invested 3% or less in CCUS or CDR technologies. TotalEnergies was the leading company for CCUS and CDR, investing 10% of its R&D budget in 2019, i.e. USD 100 million, in CCUS.

Module 4: Sold Products

Module 4, sold product performance, assesses the most significant emissions from the oil and gas sector, which occur when fossil fuels are combusted. It is, therefore, critically important for the sector to transition away from fossil fuels to low-carbon energy, such as renewable electricity or biofuels.

This module assesses:

- the company's scope 1, 2 and 3 emissions intensity trends for the past five years and the next five years (indicators 4.1 and 4.2, weighted 4-6% and 4-9% of the performance assessment respectively)
- the forecasted future trends for the share of low-carbon products in the company's sold products (indicator 4.3, weighted 0-5% of the performance assessment)
- the share of energy efficiency services in the company's sold products (indicator 4.4, weighted 0-5% of the performance assessment)

This module accounts for between 10% (for upstream companies) and 23% (for integrated and downstream companies) of the total performance assessment score. For integrated, mid- and downstream companies, this is the highest weighted module. The median score for this module is 0.4%.

The lack of progress that the 100 companies have made in reducing scope 1, 2 and 3 emissions is concerning. Between 2014 and 2019, the 100

keystone companies on average only reduced scope 1, 2 and 3 emissions intensity at 4.5% the rate needed compared to the 1.5°C pathway. Out of the 100 companies, 58 companies either had increasing scope 1, 2 and 3 emissions intensity across this period or had such limited emissions intensity reduction that they were assessed as being 0% aligned with their 1.5°C pathways. **Of the 41 companies that did reduce scope 1, 2 and 3 emissions, not a single company had a rate of reduction in line with its 1.5°C pathway. Apart from one company, all delivered less than half the required reductions**. Only Origin Energy, which achieved 85% of the required reduction between 2014 and 2019, came close to aligning with its 1.5°C pathway. In the absence of useful forecast data from the companies, the picture is the same looking forward, with over half the companies estimated to either have increasing scope 1, 2 and 3 emissions intensity between 2019 and 2024 or no emissions intensity reduction.

To reduce emissions from their sold products, companies need to change their sales portfolios to include more low-carbon products. To determine the effort companies are making towards this, the percentage of low-carbon revenues for each of the next five years was assessed against an expectation that 19% of companies' revenues are low-carbon by 2030 and 68% by 2050. Only 11 companies disclose a low-carbon revenue share, and this share is only substantial for two of the companies, Engie and Neste, which had low-carbon revenue shares of 25% and 35% respectively in 2020. The remaining 89 companies that do not disclose expectations of how their low-carbon business activities will grow, did not score well on this indicator.

1.5°C-aligned emissions intensity pathways in the sector cannot be met without the development of new services that reduce the greenhouse gas emissions of oil and gas activities as well as the final use of fossil fuel products. Energy efficiency services should be one of the main strategic focal points of companies to fully align with their 1.5°C pathways. Revenue shares from low-carbon products will be expected to grow strongly by over 50% within the next five years and these revenues already account for a significant share of more than 10% of the company's turnover. Only Engie scores 100% for its Client Solutions Division, which is a strategic pillar of the company as well as its growing renewables business. Five companies score 50% for offering some energy efficiency services and having a promotion strategy for them. A fifth of the 100 companies offer some energy efficiency services but with no promotion strategy and often with no evidence that this is part of a wider transition agenda.

Module 5: Management

The oil and gas sector will require substantial changes to its business activities to align with a low-carbon economy over the short-, medium- and long-term, whether it is voluntarily following a strategy or being forced to change by regulations and structural changes to the market. Module 5, management, is a multi-faceted module that assesses the governance mechanisms companies are using to manage the transition to a low-carbon economy across five indicators, which together paint a picture of the companies' management and strategic approach:

- Level of oversight (e.g. at board level) of climate change issues (indicator 5.1, weighted 2% of the performance assessment)
- Climate expertise (indicator 5.2, weighted 2% of the performance assessment)
- Low-carbon transition plan (indicator 5.3, weighted 3% of the performance assessment)
- Incentives for climate change management (indicator 5.4, weighted 1% of the performance assessment)
- Climate-related scenario analysis or stress testing (indicator 5.5, weighted 2% of the performance assessment)

This module accounts for 10% of the total performance assessment score for all companies across all activity scopes (fully or semi-integrated; pure up-, mid- or downstream). The median score for the 100 companies across this module is just 31.3%. A group of 18 companies scored above 50% for the module, of which Chevron was the only oil major not to.

For the low-carbon transition plan indicator, companies scored a median average of 31.3% (33.0% mean average). However, there was large variation depending on company type. National oil companies (NOCs) demonstrate the worst transition planning, with a median average score of just 15.6% (15.9% mean average). Out of the 17 companies that did not indicate any plans to manage or reduce emissions, 10 were NOCs. Moreover, independent companies with a regional geographic coverage also score poorly with a median average score of 26.6% (30.1% mean average) when compared to international national oil companies (INOCs) that score 36.0% (39.7% mean average) and international independents that score 46.9% (46.5% mean average). The seven oil majors are by far the best performers regarding transition plans, with a median average score of 68.8% (59.8% mean average).

In general, companies' transition plans lack the detail and timescale required to successfully transition in the long term. Only 13 companies, including Eni, Equinor, Shell and TotalEnergies, have defined plans beyond 20 years. Furthermore, transition plan reporting is often unclear about the operational boundaries and scope of emissions covered, with 46 companies' plans providing either no or limited time-bound, measurable indicators of how they will be successful low-carbon businesses in the future. **A majority of the 100 companies, 59 in total, include no quantitative financial context in their plans, and only 30 report that they use internal carbon prices in decision making, but no carbon pricing is aligned to a 1.5°C scenario**.

A further seven have considered the impact of a carbon price, but do not integrate into decision making, whilst 63 do not report use of an internal carbon price at all.

There are 18 moderate performers that score between 50% and 70% for the transition plan indicator. These companies tend to link the development of low-carbon activities to their greater aims for emissions reduction. However, the overall scope of their planning often excludes scope 3 emissions or does not comprehensively disclose the boundary of the plan, such as ConocoPhillips.

Eni, Eqinor, Repsol and TotalEnergies demonstrate the best transition planning. They include clear aims and targets with comprehensive details on the short-term and long-term (at least 20 years) steps to achieve them. All of their plans include quantitative targets to produce low-carbon products, such as biofuels or renewable energy, as well as developing carbon capture and storage (CCS). Other companies may have similar plans but have not developed a clear road map for the deployment and commercialisation of the technology. For example, CCS is a major part of ExxonMobil's climate change plan, but it is not integrated into a comprehensive strategy.

Scenario analysis enables companies to understand and quantify their risks and opportunities under different temperature scenarios and enables the development of more comprehensive and resilient transition plans. **Only 55 companies provide evidence that they have conducted scenario analysis, of which, only 11 provide results in financial terms and nine report no results at all**. Equinor, Shell and Neste score highest in this area, having conducted comprehensive analysis until 2050 and beyond, using multiple changing conditions. Only Cenovus Energy and BHP incorporate long-term carbon pricing into their scenario analysis that is aligned with a 1.5°C scenario beyond 2025. No company receives a full score for this indicator. All can improve in this area, and also increase their reporting in line with the Task Force on Climate-related Financial Disclosure's (TCFD) recommendations.

While 67 companies reported having board-level oversight of climate change issues, only nine reported that climate change issues were overseen by senior managers or managers, and a worrying 24 companies did not have any oversight of climate change risks and opportunities. Out of these 24 companies, 80% are NOCs, which is to be expected given the lack of disclosure and climate action from these companies. However, there is no correlation between the level of oversight of climate-related issues and the level of board member expertise on low-carbon transition. Indeed, only five of the 67 companies with board-level oversight were found to have significant climate change expertise among their board members. These included three oil majors, namely ConocoPhillips, Eni and ExxonMobil, and two others: BHP and Sasol. Significant climate change expertise in the assessment refers to expertise that is either completely integrated in the decision-making process or serves as an advisory to guide decision makers, through a consultative committee for instance. These numbers reveal that a vast majority of

the companies do not take climate change issues seriously and are not effectively integrating it at a strategic level.

Of the 100 companies, 55 have implemented climate change incentives and almost all of them have turned these incentives into monetary rewards. However, only 40% of them have defined quantitative indicators (i.e. key performance indicators) that must be achieved to receive the reward. Quantitative indicators are preferred over qualitative ones as they provide clear objectives to be reached and make companies more accountable. While the three American oil majors, namely ConocoPhillips, Chevron and Exxon Mobil, have significant climate change expertise among their board members, none of them have implemented climate change incentives forming more than 10% of the overall compensation package. This reflects a discrepancy with the four other oil majors, namely bp, Eni, Shell and TotalEnergies, which have implemented higher amount of climate change incentives. This makes Eni the only oil major that fulfils both criteria: it displays expertise on climate change and the low-carbon transition and has implemented climate change incentives representing a significant proportion (i.e. at least 10%) of its overall compensation package.

One of the most worrying facts is that bp is the only company out of the 100 to have pledged it will not carry out new oil and gas exploration in new countries. Other companies did not explicitly report that they have decoupled management incentives from fossil fuel growth and this completely undermines their attempt to reward progress towards the low-carbon transition through climate change incentives. While companies often report through the CDP questionnaire that they provide such incentives, there is often limited detail in remuneration reports and other financial statements on the climate-related performance indicators and the proportion of executive renumeration the incentives represent.

Module 6: Supplier Engagement

Module 6, supplier engagement, assesses companies' efforts to decarbonise their supply chain. This module comprises two indicators

- The global strategy implemented by the company in order to engage suppliers on emissions reduction (indicator 6.1, weighted 0-10% of the performance assessment)
- The general activities, such as initiatives and partnerships, launched by the company to influence suppliers to reduce emissions (indicator 6.2, weighted 0-10% of the performance assessment)

Since integrated companies' supply chains are mainly internalised, their engagement with external suppliers provides less leverage than for midstream and downstream companies. As a result, this module accounts for 4% of the total performance assessment score for integrated companies, 10% for midstream companies and 20% for downstream companies. The module is not assessed for pure upstream players.

The median score for this module is 5.7%, excluding pure upstream players.

Oil and gas companies, particularly mid- and downstream, rely on a complex network of upstream exploration and production companies to provide crude oil and natural gas for refining and processing. Given their size and decision-making power in the value chain, they have the ability to influence the climate strategy and performance of suppliers. Engagement with upstream suppliers is key to achieving sector-wide decarbonisation goals, as the upstream oil and gas segment represents a high source of emissions in the value chain, constituting about 10% of the total greenhouse gas emissions of the oil value chain.

As discussed in key finding 2, keystone actors in the value chain demonstrate a considerable lack of action around climate-related supplier engagement. Out of the 90 integrated, midstream and downstream companies assessed, only 50 exhibit strategies to influence supplier performance and even less, 41 out of 90, have launched initiatives or partnerships to engage suppliers.

For 36 out of the 50 companies that have a supplier engagement strategy, integration of emissions reduction issues in their supplier engagement does not go beyond including environmental aspects in their code of conduct or collecting data from suppliers. Only five companies, California Resources Corporation, Engie, Eni, Equinor and Neste, select suppliers based on their offering of low-carbon alternatives.

Companies with poor strategies tend to include sustainability aspects in their procurement process and require suppliers to comply with environmental regulations. However, they do not explicitly encourage or promote suppliers to reduce emissions or develop low-carbon products. For example, ExxonMobil expects suppliers to perform activities in compliance with contractual obligations to protect the environment but does not provide details on expectations to reduce emissions.

In general, companies demonstrate having stronger strategies than initiatives and partnerships. For example, many of the moderate performers, such as California Resources Corporation, Eni and PTT, have strategies that apply to a majority of suppliers and encourage emissions reduction through multiple action levers such as awareness campaigns, compensation or purchasing rules. However, few companies engage in partnerships with suppliers to define common emissions reduction plans and develop low-carbon products or innovations.

The highest-ranking companies for this module, Naturgy and Engie, demonstrate good strategy performance but do not perform as well at undertaking partnerships or initiatives. They receive a higher score on account of being semi-integrated midstream and downstream companies. Equinor is the best performing integrated company with strong strategy and activity performance, including collaborating to develop alternative shipping fuels.

Neste tops the ranking for this module being the only company to demonstrate strong performance across both indicators, as well as being a semi-integrated midstream and downstream company. It requires all suppliers to abide by a code of conduct that asks them to monitor and reduce emissions. It has a strong supplier engagement strategy, particularly for its biofuel feedstock, which is important given reports that Neste has been linked to palm oil-driven deforestation. Moreover, it is one of only two companies, the other being Equinor, to partner with suppliers to finance and develop low-carbon products.

Module 7: Client Engagement

Oil and gas companies must make active efforts to influence clients to reduce their emissions and transition towards low-carbon products. This is of significant importance given that downstream emissions, mainly from the combustion of oil and gas products, represent more than 80% of the total greenhouse gas emissions in the sector's value chain. Not only must companies provide low-carbon alternatives, they must also target reductions in client emissions through effective partnerships, support and promotion of low-carbon products.

Module 7, client engagement, assesses companies' engagement efforts to influence client behaviour to reduce their greenhouse gas emissions. This module comprises two indicators:

- The global strategy the company has implemented to engage clients (indicator 7.1, weighted 0-5% of the performance assessment)
- The general activities that the company has in place to support and govern client engagement (indicator 7.2, weighted 0-5% of the performance assessment)

For integrated and downstream companies, this module accounts for 10% of the total performance assessment score, as they are considered to have influence over business-to-business (B2B) clients as well as business-to-customer (B2C), such as those using service stations. For midstream companies, the module accounts for 5% of the total performance assessment score, as they have B2B client contact only. Pure upstream oil and gas players are considered to have limited leverage over clients and are therefore not assessed on this module.

The median score for this module is 5.0%, excluding pure upstream players.

As discussed in key finding 2, 60 out of the 90 non-upstream companies assessed demonstrate no strategy at all to engage with clients on greenhouse gas emissions reduction. Moreover, only 18 companies include emissions reduction in their client engagement strategy, with Neste and Engie being the only companies to have incorporated client emissions reduction targets into their strategy.

In general, companies lack promotional activities for low-carbon products. There are 32 companies that offer low-carbon products or energy efficiency services but exhibit no or extremely limited promotional campaigns. Only 13 companies were found to be actively promoting their low-carbon products through marketing and communication channels, with just five of these companies, BHP, Engie, Neste, Origin Energy and Repsol, offering incentives to customers to buy these products. For example, Repsol signed a collaboration agreement with Nissan to promote electric mobility by expanding the electric vehicle charging network in Spain and offering Nissan electric vehicle customers a 50% discount on the Repsol public electric charging network. Furthermore, there is limited evidence that oil and gas companies are actively partnering with customers to reduce emissions. Only six companies, bp, BHP, Engie, Eni,

Neste and OMV, have developed strategic partnerships with clients.
Six companies are grouped at second place on this module ranking: bp, BHP, Neste, Naturgy, Eni and Repsol. These companies are explicitly including emissions reduction in their client engagement and influencing clients through at least one action. These companies are also partnering with clients and promoting their low-carbon products. Examples include Naturgy, which ran a campaign with almost half its clients to encourage the use of products with low-carbon footprints. However, some companies, such as bp, Eni and Repsol, only apply their strategy to a limited proportion of their clients.

Engie tops the ranking for this module. It is the only company to demonstrate strong performance across the whole module. It plans to offer low-carbon alternatives and help clients avoid 45 million tonnes of CO2 equivalent per year by 2030. It has also launched a tool for B2B and B2C clients to improve their energy consumption.

Module 8: Policy Engagement

Module 8, policy engagement, assesses companies' political influence from the perspective of three indicators:

- Whether the company has a policy on what action to take when the industry or trade associations it belongs to are found to oppose climate policies (indicator 8.1, weighted 1% of the performance assessment)
- Whether the company engages with any industry or trade associations that hold climate-negative positions through board membership or funding (indicator 8.2, weighted 2% of the performance assessment)
- Whether the company publicly supports or obstructs climate policies (indicator 8.2, weighted 2% of the performance assessment)

This module accounts for 5% of the total performance assessment score for all types of companies (integrated and semi-integrated). The median score for the module is 20.0%.

Overall, the oil and gas industry is not committed to positively and proactively engaging with climate policies. Out of the 100 companies assessed, only 34 publicly reported supporting the Paris Agreement or other prominent climate policies, and only 17 companies were found to have implemented a public policy defining what actions to take when they belong to industry or trade associations that oppose climate policies. Despite these public statements or implemented policies, many of these companies remain members of trade associations that are actively opposing climate policies. For instance, Equinor supports a strengthening of the European Union's Emissions Trading System (EU ETS) and is a founding member of the World Bank's Carbon Pricing Leadership Coalition, but it also has representation on the board of the American Petroleum Institute (API), which has been widely opposing climate policies over the past years and continues to do so through its opposition of the Biden Administration's commitment to halt new oil and gas development on federal lands.

The inconsistencies between companies' public statements and policies and their continued support of climate-negative trade associations, reflect their strategy to deflect attention away from their failure to positively influence the decarbonisation and energy transition. It is not in companies' interests to oppose well-designed climate regulations. On the contrary, they should use these as a guide to effectively transition away from fossil fuel activities. This is all the more concerning as industry associations can be very influential in shaping regulations that affect the sector – for example, methane emissions regulations or discussions about the inclusion of gas in the European Sustainable Finance Taxonomy. Companies should focus on ensuring that the opposition and negative influence of industry associations on climate policies is countered or minimised.

None of the companies assessed show leadership in engaging with trade associations or regulatory bodies. The worst performers simply do not disclose any information regarding their policy engagement; these often include the national oil companies (NOCs). Even the best performers on

this module adopt ambiguous positions. Some have implemented public policies to withdraw from trade associations when their positions differ from the company's own climate change positions. Some companies also claim that trade associations' positions are regularly reviewed and approved by their board of directors, meaning there is top-level oversight of the policies for trade association engagement. However, companies do not seem to apply this review and engagement policy consistently across all the industry or trade associations to which they belong. For instance, as published in its 2019 Industry Association Review, BHP is willing to terminate membership from trade associations when misalignments are found between the trade association's and the company's own positions. At the same time, it also claims trying to influence industry associations from within. Following BHP's 2017 Industry Association Review, the Minerals Council of Australia (MCA) developed new policy positions in favour of the Paris Agreement along with other positive changes. According to BHP, these changes would not have been possible if it has exited the MCA. However, BHP remains a decisive member of the API as it sits within the board of this widely acknowledged climate-negative trade association. To drive significant positive change, companies need to implement consistent and transparent policies for their engagement with trade associations that are regularly reviewed.

Ultimately, the oil and gas industry remains reluctant to positively engage with climate policies, which they deem can hamper their economic prospects, and the majority of these companies are in fact actively collaborating with trade associations that oppose climate-positive legislations. A striking example is the decisive role played by five companies – namely bp, Chevron, PBF Energy, Phillips 66 and Valero – to defeat a ballot initiative promoting the adoption of the Washington state's first carbon tax. These five companies together provided more than USD 22 million to fund a campaign opposing this proposed carbon fee.

Module 9: Business Model

Module 9, business model, assesses whether companies are actively developing business activities for a low-carbon future. Next to developing sustainable practices, companies need to transition their business model away from oil and gas to other areas that remain profitable in a low-carbon economy. They need to develop business activities that enable them to decouple financial results from greenhouse gas emissions. This module assesses companies' business activities across three categories:

1. Business activities that drive the company's energy mix to low-carbon energy (indicator 9.1, weighted 4% of the performance assessment).
2. Business activities that contribute to the reduction of energy demand (indicator 9.2, weighted 3% of the performance assessment).
3. Business activities that develop carbon capture and storage (CCS); carbon capture, use and storage (CCUS) and negative emissions technologies (NETs) (indicator 9.3, weighted 3% of the performance assessment).

The analysis looked for evidence that the low-carbon business activity is profitable, is of a substantial size, and that the company has plans to expand the activity over a clearly defined timescale. The transition to a low-carbon economy, with associated changes in the business model and activities, will take place over a number of years. Therefore, this module identifies both current low-carbon activities and those still at a nascent stage. This module accounts for 10% of the total performance assessment score. **The median score for the module is 3.8%**.

There are 74 companies out of the 100 that report that they have current low-carbon business activities or are planning to develop these in the future. In total, 158 low-carbon business activities were identified. A majority (78%) of the identified business activities were categorised as those driving an increase in the share of low-carbon energy in the company's energy mix and assessed under indicator 9.1. Only 6% were categorised as activities that contribute to the reduction of energy demand, assessed under indicator 9.2, and 16% as activities for developing CCS, CCUS and NETs, assessed under indicator 9.3.

The most significant new low-carbon business activities across the 74 companies are those related to low-carbon electricity. These primarily constitute the generation of renewable energy for sale to third parties through solar and wind power projects or the installation of electric vehicle chargers. For example, Origin Energy is increasing its share of renewable energy activities as it transitions away from coal and gas towards more electricity generation. Renewables accounted for 20% of the company's generating capacity and were scheduled to grow to 25% of capacity by the end of 2020.

The production and sales of sustainable fuels and gases also account for a considerable amount of low-carbon business activities. A majority of these are developing sustainable second- or third-generation biofuels or biogas. Fifteen companies, including BHP, bp, Ecopetrol, Eni, Equinor and Shell, are looking to develop green hydrogen activities. However, none of these companies have disclosed the profitability of green hydrogen

production, with most companies still being in the early development stage with these projects.

There are 16 companies that are developing CCS or CCUS technologies for commercial use. For example, bp, Eni, Equinor, Shell and TotalEnergies have formed a consortium to develop Net Zero Teesside, which will be the UK's first commercial scale CCUS project. Some companies, including bp, Eni, Inpex and Santos, are looking to develop blue hydrogen projects in conjunction with commercialised carbon capture. Most of these business activities are not currently profitable.

Of the few companies undertaking activities that contribute to reduction in energy demand, all offered the sales of energy efficiency services. In general, companies demonstrate poor disclosure regarding their offered energy efficiency services and there were only three examples of mature or profitable business models for these services. Engie, which received the highest score for this module, along with bp and Equinor, provides client solutions including consultancy to cities, industry and the real estate sector on energy efficiency. It is targeting to become a global leader in this service and its earnings before interest, taxes, depreciation and amortisation (EBITDA) for this service grew by 9% between 2018 and 2019.

Overall, companies perform poorly across this module. In many cases there is a lack of disclosure, whereby, companies do not provide detailed information about the profitability and size of their low-carbon business activities. Only 13% of the identified low-carbon business activities could be considered as mature or profitable. Of these, four are undertaken by bp and two undertaken by Equinor alone. Just 16% of the activities are considered to constitute a substantial size of the company's market. Other low-carbon activities may also constitute a large section of the companies' market or activities, but companies' disclosure on number of employees and revenue from low-carbon business models tends to be limited. Companies more often indicate that they are planning to grow their low-carbon business activities, with just 48% of the identified activities scheduled to be expanded and 41% having clear deployment schedules for at least two years. However, only 16% of the low-carbon activities, represented by just 11 companies, are planned for significant expansion in the future.

A key challenge for the oil and gas sector will be to develop currently nascent low-carbon activities rapidly enough to successfully move away from a business model based on the unsustainable approach of predominantly producing fossil fuels. At present, however, even renewable energy generation, the most common low-carbon business activity of oil and gas companies, represents an insignificant proportion of total energy production compared to the burning of fossil fuels.

The World Benchmarking Alliance is funded by

World Benchmarking Alliance

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