Absolute Impact:

Why oil majors' climate ambitions fall short of Paris limits

June 2020

Carbon Tracker Initiative

About Carbon Tracker

The Carbon Tracker Initiative is a team of financial specialists making climate risk real in today's capital markets. Our research to date on unburnable carbon and stranded assets has started a new debate on how to align the financial system in the transition to a low carbon economy.

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About the Author

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Mike joined Carbon Tracker in 2019, and is currently focussing on identifying transition risk for the oil and gas industry under different climate scenarios. He has co-authored reports to assess impacts at the company level, including *Breaking the Habit* and *Balancing the Budget*, alongside writing on executive remuneration and company climate targets.

Prior to joining Carbon Tracker, Mike worked as a geologist for BP for 10 years on projects across the upstream, from early access to development. Mike has experience working in petroleum basins across the world, including time spent working in Norway, with specialist experience in unconventional exploration and in leading technical project teams.

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Table of Contents

1 Key Findings

- **Climate targets in the oil and gas industry need to recognise the finite limits** that the energy transition places on current business models and their investment decisions. Companies that continue to assume growth and sanction projects outside climate limits risk creating stranded assets, potentially destroying significant shareholder value.
- **We provide a relative ranking of climate goals for a selection of the largest oil and gas producers** (7 majors plus Equinor and Repsol) based on our assessment framework which we describe in detail.
- **We expand on our three "Hallmarks of Paris Compliance" as pre-requisites for company goals to link to a finite climate budget**. To achieve this structural link, ambitions must be framed on an absolute basis, cover scope 1, 2 and 3 emissions, and account for activities based on a company's full equity share.
- **An intensity approach to target-setting fails to link to finite climate limits.** Targets which are set on an "all-energy" basis can also mask oil and gas production growth in the short to medium term.
- **Interim targets are critical to ensure timely action**, and that the emissions pathway followed fits with Paris goals.
- **Not all "net zero" targets are equal** among recent climate announcements. There are key differences in the metrics used, the scope and extent of emissions covered, and the emissions pathway followed.
- **We find a three-tier approach to emissions targets**:
  - Eni, Repsol and BP – Scopes 1, 2 and 3; absolute basis to upstream ambitions.
  - Shell, Total and Equinor – Scopes 1, 2 and 3; intensity approach to goals.
  - Chevron, ConocoPhillips and ExxonMobil – Scope 1 and 2 emissions only.
- **Eni tops our ranking** based on its structure, despite the scale of ambition not reaching net zero. Its upstream targets fulfil the three Hallmarks, and it has a significant interim target (30% reduction in absolute upstream emissions by 2035).
- **ExxonMobil brings up the rear** as its target covers upstream emissions alone, and even then it only covers assets operated by Imperial Oil, a Canadian oil sands company in which it has a majority stake. This fails to acknowledge the impact that reduced demand for fossil fuels will have on its fundamental business.
- **An industry-standard approach to reporting needs to be adopted**. Almost every ambition is framed differently, making comparison challenging; we therefore encourage, where possible, the development of consistency around the calculation and reporting of climate metrics.

2 Executive Summary

There is growing recognition that drastic changes to oil and gas consumption are required to meet the finite limits of a global carbon budget and the goals of the Paris agreement. Building on our recent work analysing company ambition, Carbon Tracker defines the structural "Hallmarks of Paris Compliance"[1], and then uses this framework to derive a relative ranking of company climate targets for the seven majors plus Equinor and Repsol.

An arms race has emerged: not all goals are equally ambitious

The end of 2019 saw a flurry of industry announcements, with Repsol[2] setting a new strategy to become a "net zero emissions company" by 2050. This has been followed by a whole host of company ambitions announced – with an "arms race" effectively developing between companies, particularly in Europe.

Company goals – generally framed as non-binding *ambitions*, not targets – vary significantly in both their structure and the magnitude of reductions. For a company to be considered "Paris-aligned", it needs to incorporate the finite limits of the carbon budget into its sanctioning process. If incorporated consistently and comprehensively, this should result in both Paris-aligned emissions and the mitigation of financial risk; capital invested into projects that exceed climate limits risks becoming stranded and destroying shareholder value. Accordingly, the likely impact of company climate ambitions in mitigating stranded asset risk and reducing carbon emissions in absolute terms will vary commensurately.

Whether you harvest or transition, non-Paris compliant projects carry risk of stranding

Navigating the energy transition will require companies to exercise strict capital discipline and avoid sanctioning assets that do not fit in a low carbon world on economic grounds. What they do with any excess capital – "harvest" and return to shareholders, or "transition" into other sectors – is then a matter for debate between executives and investors. But, if a company chooses to transition, this does not give it licence to continue investing in the growth fossil fuel assets that would both continue to incur stranded asset risk and lead to increased absolute emissions.

While investment behaviour is therefore the key on both emissions alignment and financial risk fronts, a company's emissions goals may give a window into the management's approach to future developments. An emissions target that reflects the finite limits of the carbon budget may reflect executives that are likely to be conservative with project sanction, whilst one allowing continued growth may indicate that management will sanction the higher cost projects that are reliant on continued demand growth. The structure of company targets, therefore, perhaps represents an interesting proxy.

Company ambitions have started to incorporate "net zero" by a certain date some decades hence.In the most comprehensive sense, at company level, that implies a company should either be producing no emissions by that point, including scope 3, or deploying negative emissions technologies that "net" its positive emissions back to zero.

[1] *We first defined the "Hallmarks of Paris Compliance" in our November 2019 report "Balancing the Budget", available at* https://carbontracker.org/reports/balancing-the-budget/*, and these are expanded upon here.*
[2] https://carbontracker.org/repsols-net-zero-ambition-joining-the-dots/

While setting a 2050 net zero ambition is laudable, if there are no interim goals and concrete plan, i.e., no pathway to that outcome, this may lead to questions of commitment and, at worst, accusations of "greenwashing". To create confidence that actions will match up to words, management needs to detail firm steps now and not leave this to its successors, putting both the climate and shareholders' interests at risk.

Targets need an absolute basis *and* cover scope 3 emissions

Companies have focused heavily on targets based on intensity measures. If emissions ambitions are measured on an intensity basis per unit of energy supplied, then progress can be made against this target by simply supplying more energy as long it as is lower carbon – without necessarily resulting in lower emissions overall or reflecting more conservative investment practice. This is a problem from a climate point of view. Setting targets with an absolute basis might not necessarily require stipulating a single figure in gigatonnes of CO_2; alternative ways of achieving the same end might include a commitment to only sanction certain projects based on their competitive position within a finite budget, for example.

A second issue involves the scope of emissions covered by company targets. With 85% of emissions from the use of oil and gas coming from the final combustion (scope 3), a focus only on operational emissions (scopes 1 and 2) fails to acknowledge the impact of lower oil and gas use in the transition. Therefore, "net zero" ambitions which relate only to scopes 1 and 2 miss the large majority of the issue.

Assess company targets against the finite limits of the carbon budget

To assess company goals from the above perspective, we ask a series of questions to address the approach used, as well as the magnitude of the reductions. In this study, we review the climate ambitions of nine of the largest listed oil and gas companies, the seven majors plus Equinor and Repsol, before then producing a relative ranking, as shown in Table 1.

The focus is on those ambitions/targets which cover upstream production, either through a specific upstream goal, or the most applicable company-wide one; in the case of multiple goals for a company, that which most fulfils the Hallmarks is included. For integrated companies with diverse activities, other targets may be appropriate for different parts of the business.

Analysing in this way highlights the structural link to the global carbon budget, and highlights targets which fail to drive emissions reductions commensurate with climate targets. Crucially, it also links to our financial analysis, by identifying those companies who appear to most recognise the limitations to their business models through the energy transition.

FIGURE 1. FLOW DIAGRAM TO SHOW APPLICATION OF COMPANY RANKING METHODOLOGY.

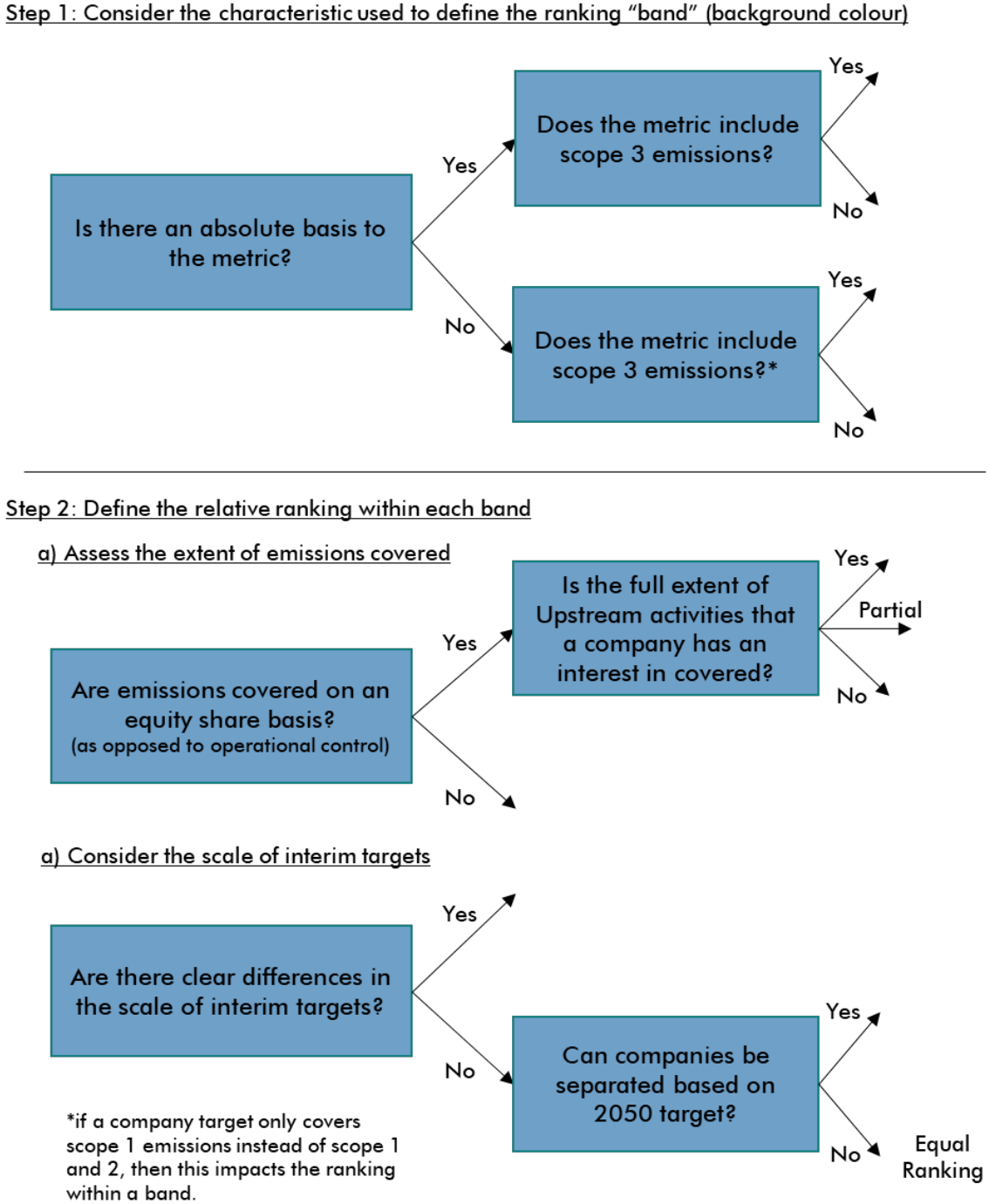

TABLE 1. RANKED COMPARISON OF COMPANY EMISSIONS TARGETS COVERING UPSTREAM PRODUCTION

Rank	Company	Metric	1. CHARACTERISTICS		2A. FULL EQUITY SHARE?	2B. SCALE	
			Absolute Basis?	Scope 3 Emissions		Interim	2050
1	Eni	Emissions from O&G production	Yes	Yes	Yes	30% by 2035	80%
2	Repsol[1]	Emissions from O&G production	Yes	Yes	Yes	-	Net Zero
3	BP	Emissions from O&G production	Yes	Yes	Partial	-	Net Zero
4	Shell[2]	Emissions intensity of all energy sales	-	Yes	Yes	2-3% by 2021 30% by 2035	65%
5	Total[3]	Emissions intensity of all energy sales	-	Yes	Yes	15% by 2030 40% by 2040	60%
6	Equinor	Emissions intensity of all energy sales	-	Yes	Yes	-	>50%
7	Chevron	Operational emissions intensity	-	-	Yes	5-10% (oil) and 2-5% (gas) by 2023	-
8	Conoco-Phillips	Operational emissions intensity	-	-	-	5-15% by 2030	-
9	Exxon-Mobil[4]	Operational emissions intensity	-	-	-	10% by 2023	-

Source: Company disclosures, Carbon Tracker analysis.

Notes: Shading indicates ranking band and is based on metric characteristics. [1]Repsol's interim targets use its "carbon intensity indicator" and so are not included in this focus on its absolute end goal. [2]Shell's "Net Zero Emissions Business" target for 2050 is excluded as it does not rule out being dependent on customers' actions. [3]Total's ambition relates to its wider global goal; underlying this is a narrower net zero scope 1-3 emissions target which only covers products consumed in Europe and is not shown above. See notes in appendix for full discussion.

Eni now leading the pack

From lagging behind the majority of its European peers in our 2019 assessment[3], Eni announced a new strategic direction in February 2020[4] that puts it ahead of the pack. While, unlike either BP or Repsol, the scale of Eni's targets does not reach (net) zero, they incorporate an absolute interim target of a reduction of 30% in full life-cycle emissions from oil and gas production for 2035. This appears to feed through to its portfolio planning; amongst the 9 companies considered here, it has given the strongest indications that it is planning for its oil and gas production to peak within the next five years. BP is placed behind Repsol primarily due to its significant stake in Rosneft not being covered by these ambitions; we look forward to BP publishing interim targets later this year.

A two-tier approach to "net zero" targets in Europe

In April 2020, Royal Dutch Shell increased its net carbon footprint reduction ambition to 65% by 2050 (from 50%), applying to scopes 1, 2 and 3 on the energy it produces and sells. Equinor and Total have announced similar targets. Despite being framed with "net zero" elements, these targets are based on an *intensity* approach and do not appear to link to the finite limits placed on oil and gas in the energy transition. Accordingly, they rank below Eni, Repsol and BP.

Alongside this, Shell announced its ambition to be net zero on its own operations (scopes 1 and 2 only), and to be a "net zero emissions energy business". It notes[5] that "our customers can themselves take action on their emissions" and "such actions by our customers can help Shell become a net-zero emissions business". While emissions reductions will be required throughout the supply chain and working with customers to help them decarbonise is laudable, in the absence of further clarity or targets it is hard to see that Shell can describe itself as a net zero company as a result. Total has similarly announced a "net zero" emissions ambition relating to scopes 1-3, however this only covers Europe, with production globally subject to a 60% intensity reduction.

A widening Atlantic divide

Both Chevron and ConocoPhillips have goals to reduce scope 1 and 2 emissions intensity alone, with Chevron ranked one place higher in our assessment by calculating these on an equity share basis. ExxonMobil figures at the bottom of our rankings, as the only emissions covered under any goal are those from its investment in Imperial Oil, an oil sands producer. We note that these US based companies do include goals covering methane venting (flaring is covered under scope 1 CO_2 emissions) – another greenhouse gas alongside CO_2 – these are no more stringent (and in some cases less so) than the Europeans' methane goals.

Emissions targets are one step on the ladder

Company targets are currently formulated in very different ways; we encourage companies to develop common standards to both framing and calculating these. Not only do they vary in magnitude of required reduction and calculation methodology, but critically with respect to the extent to which they reflect the finite nature of climate limits, and thus guide investment strategy. Emissions ambitions need to be understood in this context to both meet the goals of the Paris Agreement and reduce financial risk.

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[3] *See "Balancing the Budget".*
[4] https://carbontracker.org/eni-the-first-oil-company-to-lay-out-a-strategy-of-managed-decline/
[5] https://www.shell.com/energy-and-innovation/the-energy-future/shells-ambition-to-be-a-net-zero-emissions-energy-business.html *(accessed 5/5/20)*

3 Introduction

3.1 "Net zero" and the implications for the planet

To stabilise global temperature rise, the planet will need to reach a point where any carbon dioxide emitted to the atmosphere is balanced ("offset" or "net off") against carbon dioxide removed: "net zero" emissions. The absolute temperature rise reached vs pre-industrial will be determined by the aggregate amount of carbon dioxide released to the atmosphere. Turning this around: to limit temperature rise to any given level, there is an associated "carbon budget", the finite quantity of carbon dioxide which can be emitted to the atmosphere.

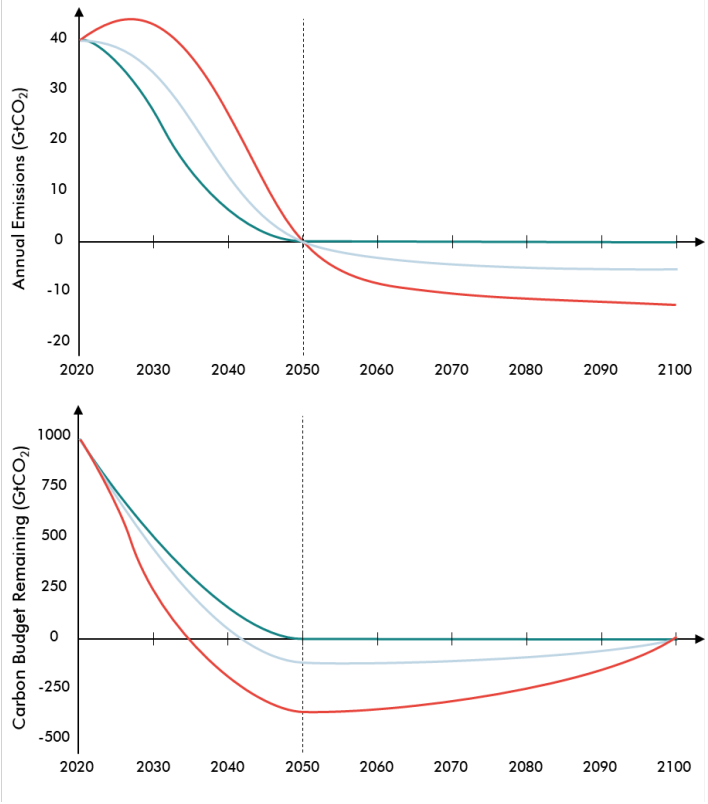
In Paris in 2015, world leaders agreed to aim to limit global warming to well below 2 degrees by 2100, and aim for 1.5 degrees. While there are many different scenario pathways that might meet this temperature goal, they generally require global carbon emissions to become "net zero" by around 2050. In itself, however, a net zero goal does not tell the whole story; the emissions pathway to get there matters too.

Figure 2a shows three different stylised scenarios, all of which reach global net zero emissions in 2050, however they follow different pathways in the interim.

Figure 2b shows the impact the pathway has on an illustrative 1,000 Gt carbon budget, and the scale of "negative emissions" needed post 2050. In the green scenario, the carbon budget is never exceeded. Under both the blue and the red scenarios the budget is exceeded; this occurs earlier under the red pathway.

Following the red instead of the blue (or green) pathway in Figure 2b also increases the degree of temperature "overshoot" – where global temperatures rise above the target temperature, before subsequent assumed efforts to bring them back by 2100. This may trigger positive feedback loops in the climate system, reducing the benefits of natural sinks, and requiring even greater carbon removal; in practice it may not be possible to undo the temperature overshoot at all.

Figure 2. a) Global annual net carbon emissions (Top), and b) Remaining carbon budget (bottom) to 2100, for three illustrative scenarios reaching net zero in 2050.



Source: Carbon Tracker analysis. Notes: Schematic diagrams with approximate y-axis values.

Decarbonising the energy we consume is critical…

Right now, hydrocarbons are the majority source of energy to many industries, from the mechanisation of farming to the ability to transport freight by air, land and sea. While the energy transition will transform these sectors, in 2050 we'll still be eating cereals and consuming goods manufactured far away; we'll see new green machinery in our fields, and a new fleet of vessels on the seas, but the agriculture and shipping industries will remain.

For consumers, "decarbonising" energy means reducing the carbon emissions created *per person*. This could be viewed as a reducing emissions *intensity* (CO_2/person) *if* absolute energy use stayed constant. Of course, the beauty of renewable energy is that global energy supply can increase, and global living standards can rise, without an increase in carbon emissions.

…however, "decarbonising" the production of oil and gas misses the big picture.

The vast majority (85%) of the emissions associated with the extraction and use of fossil fuels comes from their final combustion (scope 3 emissions – see box). No matter how efficiently hydrocarbons are extracted, this 85% is a fundamental chemical part of burning hydrocarbons to release energy, producing CO_2 and H_2O in the process.

GHG Protocol Emissions Definition

Scope 1 – Direct emissions from owned or controlled sources.

Scope 2 – Indirect emissions from the generation of purchased energy

Scope 3 – All other indirect emissions from full upstream and downstream value chain

Source: GHG Protocol: https://ghgprotocol.org/corporate-standard

As a result, the provision of energy from fossil fuels inherently involves the release of carbon dioxide, and an approach of just looking to "decarbonise" the *production and refining* of oil and gas fails to acknowledge the ultimate impact on the climate of those fossil fuels when used.

That is not to say that oil and gas companies seeking to lower their emissions from extraction processes is futile or not worthwhile; it is a significant source of emissions that will need to be tackled. However, meeting climate goals will ultimately mean that the oil and gas industry will need to shrink dramatically, and individual companies will need to look participate in other industries. This remains true even in scenarios that assume daunting levels of carbon capture and storage (CCS).

3.2 Impact for oil and gas producers

Whether a reduction in the use of oil and gas as an energy source is as a result of out-competition by renewables, policy changes, ethical concerns by consumers, or all of the above, the result is the same: meeting climate targets will mean significantly less fossil fuel use. Companies with current activities linked to the extraction and processing of oil and gas will need to recognise the huge impact of this on their business models.

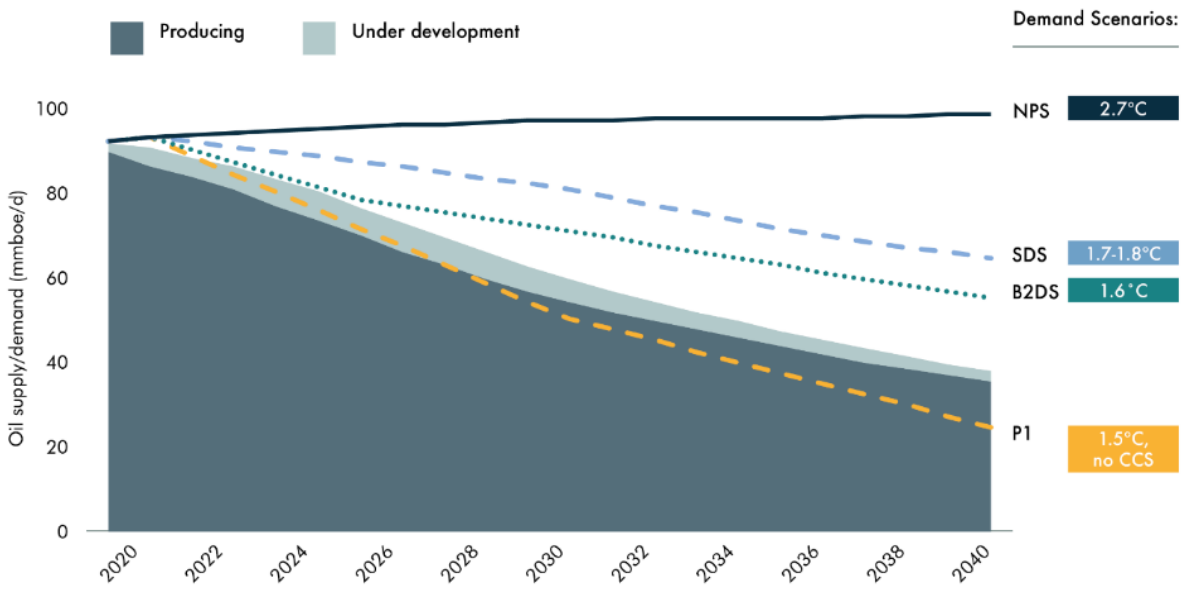
Even with growing acknowledgement of peak oil *demand* likely being reached within the next decade, most companies are still planning on growing oil and gas production. Companies that

continue to sanction oil and gas projects under a business as usual strategy, with expectations of returns many years hence, risk destroying significant shareholder value through the creation of stranded assets as the economy shifts.

Production cuts are required to meet Paris goals

Carbon Tracker uses a number of different global scenarios from both the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC) to understand the implications for the industry as a whole. Figure 3 shows an example of global oil demand under different scenarios, from our report *Breaking the Habit*[6], that we link to global supply at the individual project level. Using a least-cost approach, we identify those projects that might still go ahead with scenarios of lower demand, and then translate this into the potential impacts for individual companies in terms of potential capex that might be wasted. In a world of decreasing demand for oil and gas, only the most cost-competitive projects will generate value, and even they will potentially deliver lower than expected returns[7].

FIGURE 3. 2020-2040 OIL DEMAND UNDER DIFFERENT CLIMATE SCENARIOS, AND FUTURE SUPPLY FROM POST-SANCTION PRODUCTION.



Source: IEA, IPCC scenarios and Rystad Energy. Carbon Tracker Analysis (redrawn from Breaking the Habit – Figures 1, 7 and 8). Note: IEA Scenarios: B2DS = Beyond 2 Degrees Scenario; SDS = Sustainable Development Scenario; NPS = New Policies Scenario – now updated to Stated Policies Scenario (STEPS).

In 2019 we published a report, *Balancing the Budget*[8], using the same least-cost approach to determine the company-level production levels and carbon emissions that would result in such a pathway and based on the economics of each company's potential portfolio. We found that for the seven oil and gas majors, the IEA's B2DS pathway implied a 35% reduction in oil and gas production by 2040 (from 2019 levels), with continuing reductions towards 2050.

[6] *Available at:* https://carbontracker.org/reports/breaking-the-habit/
[7] *For potential quantification of value destruction under lower prices, see Carbon Tracker's report "Handbrake Turn" (Jan 2020) available at:* https://carbontracker.org/reports/handbrake-turn/
[8] *Available at:* https://carbontracker.org/reports/balancing-the-budget/

Don't bank on business as usual: either harvest or transition

Limiting ultimate emissions to the level of a Paris-aligned carbon budget – and avoiding the risk of investing in projects that might be stranded as the world decarbonises – will require companies to take a conservative view of project sanction and only press ahead with projects that are cost-competitive under those conditions.

With this fundamental step satisfied, which new activities they choose for their business to operate in is up to them and we don't seek to prescribe; there is no set way to "transition". Companies may even choose not to move into other industries at all, merely looking to maximise financial returns from an ever-shrinking production volume – a "harvest" model.

Companies are increasingly recognising this need to change; for example, BP recently acknowledged the constraints on the industry of the global carbon budget[9], and they and others are looking to reframe themselves as energy companies, increasing their operations within the electricity generation and distribution industry. This is a logical step but not the only one – and not one that every specialized oil and gas producer will have the ability to take.

The current Covid-19 pandemic has brought this need for change into sharp focus, lowering short-term demand for oil and gas, and potentially accelerating peak oil demand. Companies are feeling the heat, and BP's announcement in mid-June of a $17.5bn write down of its assets is an example of the growing impact of the energy transition.

The industry begins to grapple with the climate challenge

In the six months since the publication of *Balancing the Budget*, there has been a spate of new climate announcements from oil and gas companies, predominantly in Europe. The language and specific metrics used in goals – most of which are framed as non-binding *ambitions* rather than targets – varies, with many claims of "net zero". For some, these goals genuinely appear to be linked to a strategic shift away from growing oil and gas production, at least in the medium to long term.

We have published a number of company-specific blogs following these announcements, and the aim of this report is to bring these together to highlight some of the limitations in the approaches utilised, before then providing a relative ranking of current company targets.

Linking company targets to climate physics

While signals that the industry appreciates the issue are welcome, for companies to truly satisfy stakeholder concerns relating to both environmental and financial risks will require that such goals are framed in a way that is commensurate with the challenge, rather than a fig leaf.

In *Balancing the Budget,* we defined three "Hallmarks of Paris Compliance" to summarise our analysis of corporate climate targets (see box). These Hallmarks were intended to be viewed as structural pre-requisites for a corporate goal to properly demonstrate a link to the carbon budget, rather than necessarily reflecting the potential impact of a given ambition / target.

[9] *BP Net Zero announcement, February 2020:* https://www.bp.com/en/global/corporate/who-we-are/reimagining-energy.html

Hallmarks of Paris Compliance from *Balancing the Budget*:

An upstream company climate target linked to a global carbon budget:

- Is **bound by finite limits** through absolute target(s) – not just on an intensity basis
- Covers **scope 1, 2 and 3 emissions**
- Includes emissions from the vast majority of a **company's owned production**

Emissions targets as a proxy for investment behaviour?

At Carbon Tracker, our focus has long been on the financial implications of a decarbonising economy for the fossil fuel industry and related sectors. Given uncertainty over future demand, we have argued that maximising value and minimising risk will require fossil fuel companies to sanction only the subset of assets that fit within a low carbon world. Our focus has therefore been on corporate investment activity and the risk of sanctioning assets that may turn out to be "stranded".

To date, however, companies have tended to describe their climate ambitions in terms of the emissions that result from their business, rather than the investments that result in those emissions. However, one might see the formulation of company climate targets as a proxy for company investment behaviour. Companies that set targets that demonstrate a greater acknowledgement of the limits on fossil fuel use through the transition are perhaps more likely to sanction assets conservatively, and thus reduce the potential to destroy shareholder value.

However, not all targets are created equal. For example, a company which only considers scope 1 and 2 targets, thereby giving itself unfettered space to continue growing production, does not illustrate much recognition of the limits that a decarbonising world places on its fundamental business model.

In this note, we therefore categorise targets based on the extent to which they reflect the absolute atmospheric impact of a company's activities based on this perspective.

4 Climate Targets at the Company Level

To assess company targets, we first describe our assessment methodology and the merits (or otherwise) of different approaches, before discussing the importance of interim targets. We then assess companies' goals against these common criteria, enabling us to rank companies against each other, before then commenting on different approaches between companies.

4.1 Review of key elements of company approaches

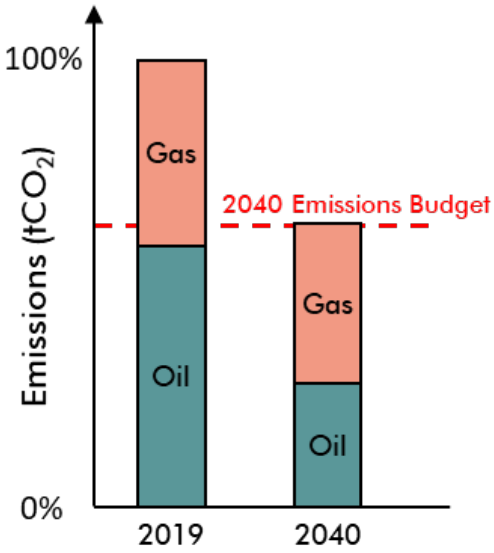
In this section, we expand on the Hallmarks in more detail, and discuss their importance in framing company goals which recognise the limits imposed on future oil and gas consumption by a finite global carbon budget.

As previously discussed, a successful energy transition will entail lower levels of demand for fossil fuels. This reduction in volume represents by far the biggest factor in reducing the carbon emissions resulting from activities of the oil and gas industry.

In a shrinking industry, investment behaviour will have to change commensurately. Companies that continue to sanction assets on the assumption of continued growth risk creating stranded assets. Carbon Tracker uses a least-cost methodology to identify those oil and gas projects which fit within a carbon budget associated with a given scenario, as described in *Breaking the Habit*.

In *Balancing the Budget,* we translated the production from these projects into company carbon budgets, and implied emissions and production reductions to 2040. Figure 4 shows this for the average major, with a 40% reduction in annual emissions by 2040, based on a linear decline and a shift to gas.

FIGURE 4. 2019 EMISSIONS AND 2040 COMPANY BUDGETS FOR THE AVERAGE MAJOR.



Source: Carbon Tracker Analysis. Notes: 2040 emissions shown for the average major (40% reduction from 2019, as calculated in "Balancing the Budget"). 2019 production shown with a 55% oil / 45% gas split, changing to a 40% / 60% for 2040.

In this section we review different approaches adopted by company climate targets – we start by considering those framed around reducing the *intensity* of oil and gas production, approaches that we see as failing to link to the finite limits of a global carbon budget. Two strategies to achieving such a target are shown, illustrating this point: a shift of portfolio balance to gas, and a reduction in intensity of overall energy production through adding low carbon energy sources. We then review approaches that only cover scope 1 and 2 emissions, before then highlighting approaches which have a direct link to a global carbon budget on an absolute basis.

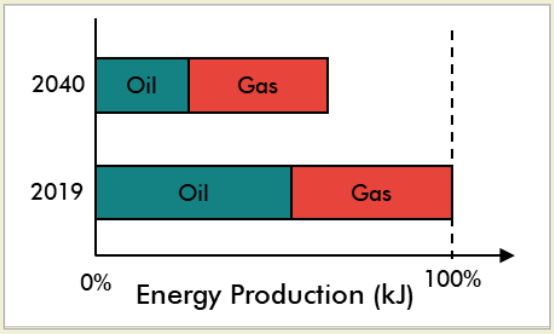
To accompany the discussion, we consider the total energy supplied by the company (split into oil and gas production and where appropriate, generation of electricity from low-carbon sources), along with the associated full life-cycle emissions. By combining these two parameters in a crossplot we are able to see the impact that different approaches also have on emissions intensity – see box "how to read these diagrams" for more details.

How to read these crossplots

The plots (e.g. Figure 4) on the following pages are designed to conceptually illustrate the impacts that approaches will have on production volumes, absolute emissions, and emissions intensity. They show 2019 values and a future value in 2040 (link with *Balancing the Budget*).

The **bar chart** (example below) shows **energy production** in kilojoules (kJ) and forms the **x-axis of the cross-plot**; 100% represents the total energy produced from oil and gas in 2019. Some plots additionally show electricity generated from renewable sources (in blue, set to zero for 2019 to simplify the examples).

- 2019 production is shown with a 55% oil / 45% gas split, changing to a 40% / 60% split for 2040 based on results of *Balancing the Budget* (n.b. 20% / 80% in Figure 5).
- Example here shows the 35% production reduction required for the average major to meet demand levels under the IEA's Beyond 2 Degrees Scenario (B2DS).



The **column chart** (see Figure 4 for example) on the left of each crossplot shows full **life-cycle CO_2 emissions** on an **absolute basis** and forms the **y-axis of the cross-plot**. Columns indicates present-day and future CO_2 emissions based on the production shown in the bar chart.

- Total emissions are split by source (full life-cycle emissions of gas are c.86% of oil).
- For simplicity, renewables are shown as having no associated emissions.
- The horizontal **red dashed line** shows a 40% reduction in emissions for 2040 – the average reduction required for the majors from *Balancing the Budget*.

The **cross-plot combines** both **production and emissions** from the bar and column charts, to show **emissions intensity** in tCO_2/kJ (see radiant lines).

- The **triangle** shows **present-day** value.
- The **black square** shows a shows future value under a **"harvest"** strategy.
- The **yellow circle** shows the future under a **"transition"** strategy.

How to interpret theses crossplots

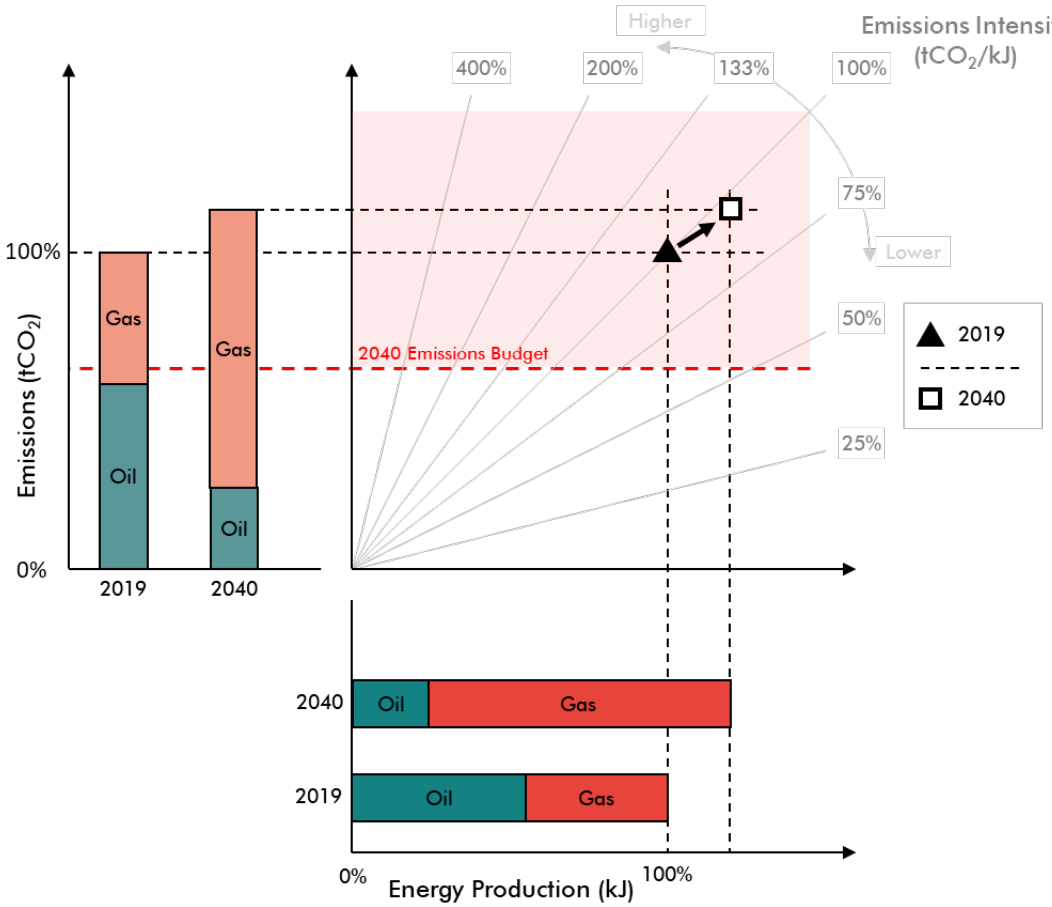
- Emissions intensity is high in the top left, and low in the bottom right.
- Changes (arrows) along the radiant lines indicate a constant emissions intensity.
- For a company approach to be viewed as linked to climate outcomes, the position of the 2040 value needs to be below the red line (outside the red region).
- For discussion on each approach, see accompanying text and notes under each plot.

Emissions intensity targets don't necessarily cut absolute emissions, whether due to a gas shift…

A significant element of many company "decarbonisation" strategies is a shift to gas, to increase the relative proportion of gas production in a portfolio compared to oil. While the combustion of gas does have lower carbon emissions per joule compared to that of oil products, full life-cycle CO_2 emissions are still 86%[10] of those associated with the usage of oil. Figure 5 illustrates a 20% growth in oil and gas production with a significant shift from oil to gas from 2019 (55% oil / 45% gas) to 2040 (20% oil / 80% gas) with just a small reduction in emissions intensity.

While a large portion of oil production is replaced by gas, Figure 5 shows that even a small amount of growth negates any potential emissions reductions in absolute terms. Even if overall volumes stayed constant, if no oil were produced in 2040 absolute emissions would not fall below the 2040 budget (red dashed line). Therefore, a portfolio shift to gas has limited potential to reduce absolute emissions resulting from the production and consumption of oil and gas, and may not at all, without limitations on total production volumes. Other figures in this section show a 40% oil / 60% gas split in 2040, i.e. assume a general shift to gas as well as other portfolio factors.

FIGURE 5. ILLUSTRATION OF A SIGNIFICANT SHIFT TO GAS, WITH SOME OIL AND GAS GROWTH, ON ENERGY PRODUCTION, ABSOLUTE EMISSIONS AND EMISSIONS INTENSITY.



Notes: x-axis shows energy production; y-axis shows absolute emissions; radiant lines show emissions intensity; black triangle indicates 2019 values (all 100%); square shows 2040 values. "Shift to Gas" shows scenario shows 55% oil / 45% gas (kJ basis) in 2019 shifting to a 20% oil / 80% gas split in 2040, with 20% increase in overall production volumes. See "how to read these crossplots" box.

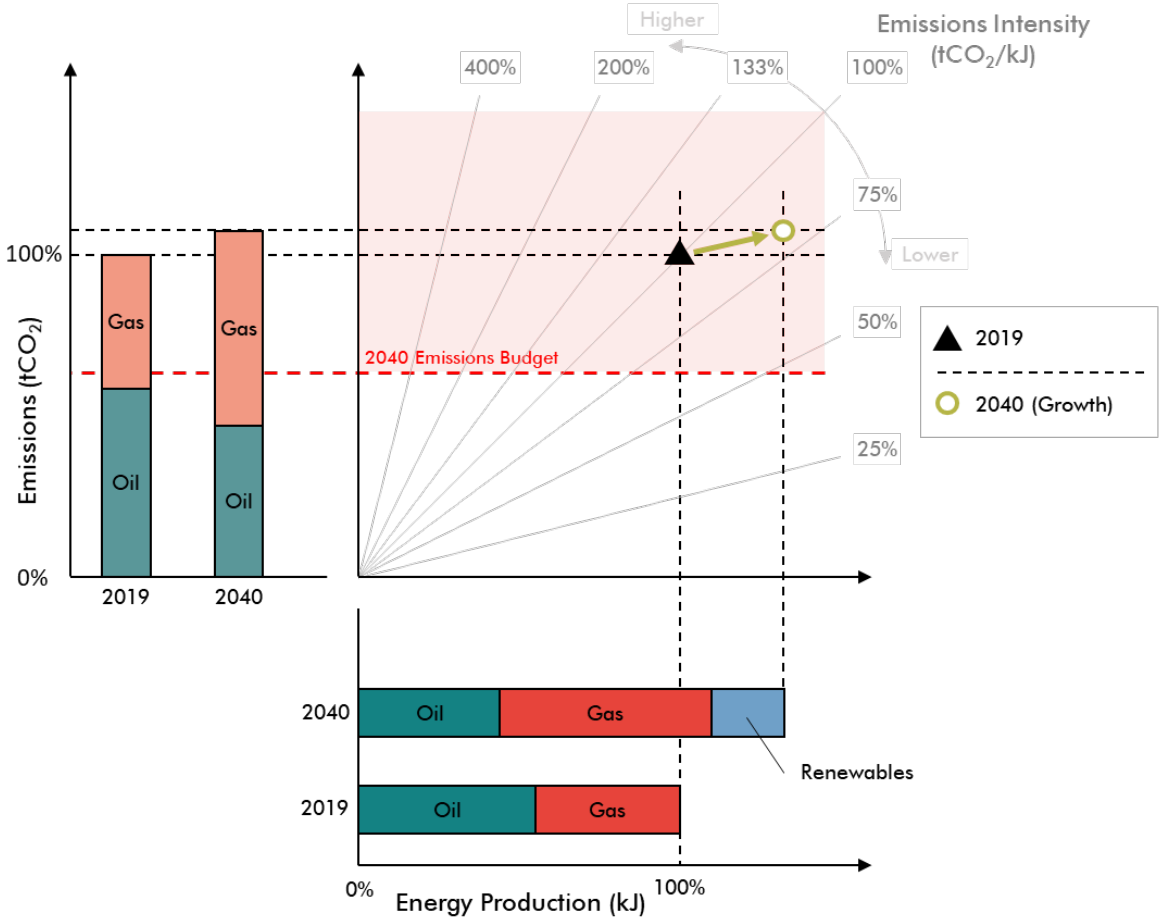
[10] *Based on results of "Balancing the Budget" using emissions data from Rystad Energy.*

…or a build out of renewables

Instead of a target to reduce absolute emissions from oil and gas production, some companies (e.g. Equinor, Shell and Total) have introduced ambitions which reduce the emissions intensity across all the energy that they produce, in tonnes of carbon dioxide per joule (tCO_2/J). However, such a target doesn't necessarily result in emissions reductions overall. For example, as long as enough of the growth in energy supply is provided by low-carbon sources, intensity will fall, irrespective of absolute emissions. As an example, if hydrocarbon production (and hence CO_2 emissions) remains constant, and total energy production (in joules) doubles, then the intensity in tCO_2/J will halve while absolute emissions remain flat.

In fact, providing sufficient renewables are added, then oil and gas production, and associated emissions, could actually rise. Figure 6 shows an example of such a growth scenario, with 10% growth in oil and gas to 2040 and the addition of renewables, such that 20% of energy production is from low-carbon sources. From 2019 to 2040 emissions *intensity* falls by 20% (to 80% of 2019 levels), yet *absolute* emissions rise by 10%, and the company carbon budget is not met (the yellow circle is above the dashed red line).

FIGURE 6. ILLUSTRATION OF ADDING RENEWABLES, WITH SOME OIL AND GAS GROWTH, ON ENERGY PRODUCTION, ABSOLUTE EMISSIONS AND EMISSIONS INTENSITY.



Notes: x-axis shows energy production; y-axis shows absolute emissions; radiant lines show emissions intensity; black triangle indicates 2019 values (all 100%). 2040 values shown for a growth scenario (yellow circle). Scenario includes 10% growth in oil and gas production and the addition of 20% renewables in 2040. See "how to read these crossplots" box.

An intensity approach *may* be appropriate for consumers to assess their climate impact: *if energy consumption stays constant,* then switching to purchasing electricity generated from lower-carbon sources results in lower absolute carbon emissions. For an energy supplier, an intensity approach to reducing emissions *could* guarantee reductions in absolute emissions at a supplier level, *if* it had a commitment to limiting the total energy supplied – this would effectively make it an absolute target.

Without such a limit, however, a company can reduce the overall intensity of energy supplied by simply providing more energy but without reducing emissions overall. Therefore, while those ambitions that are framed on an overall energy intensity basis do often include full scopes 1, 2 and 3 emissions, there is no direct link to the finite limits of the global carbon budget and a company can continue to invest on the assumption of fossil fuel growth. Accordingly, we do not see such ambitions as being sufficient either from an environmental view of limiting global warming or in terms of avoiding the sanction of potentially stranded assets outside Paris limits.

As a result, we believe that for integrated companies, targets need to be appropriate for the different activities (oil and gas production, electricity generation) they participate in. It is the *absolute* emissions associated with oil and gas companies' production that need to be reduced, which should be reflected in target formulation – other investments a company has outside oil and gas may need to be judged separately.

Failing to include scope 3 emissions targets ignores transition impact on demand

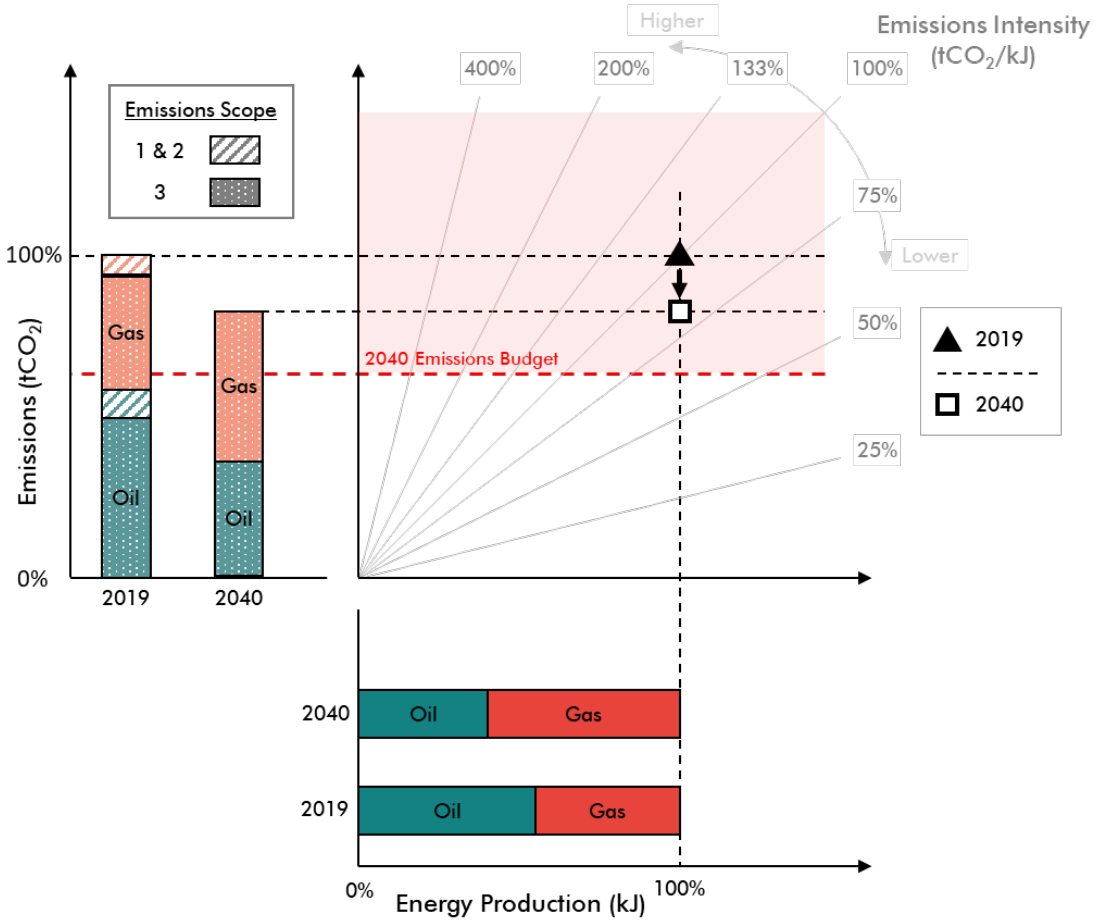
Some company plans (e.g. Chevron, ConocoPhillips and ExxonMobil), call for a reduction (5-15%) in the *intensity* of operational emissions, as a way to reduce the intensity of oil and gas production. Given scope 1 and 2 emissions account for just 15%[11] of emissions resulting from the production and use of oil and gas, then these targets equate to just a 1-3% reduction on overall emissions. Some other companies (e.g. Lundin Energy) have announced that they will attempt to eliminate or offset operational emissions entirely.

As in the introduction, even if oil and gas operations could be completely "decarbonised", and produced with no (net) scope 1 and 2 emissions, then 85% of life-cycle emissions would remain, assuming of course this applied to both operated and non-operated assets.

Figure 7 shows an illustration of this, with no scope 1 or 2 emissions in 2040, with absolute emissions remaining significantly above the 2040 budget. This simple example again of course assumes production stays flat in volume terms, however with most companies planning for oil and gas growth, total absolute emissions associated with a company's oil and gas production could still increase as scope 1 and 2 emissions fall. A focus only on operational emissions – even if it's a "net zero" target – fails to get close to achieving the reductions needed to remain within a company budget by 2040, let alone a net zero goal for the full impact of a companies' activities.

[11] *"More than 85% of total fossil fuel greenhouse emissions come from consumption" from* **https://www.equinor.com/en/how-and-why/climate.html** *(accessed 18/06/20).*

FIGURE 7. ILLUSTRATION OF POTENTIAL IMPACT OF NET ZERO SCOPE 1 AND 2 EMISSIONS ON ABSOLUTE EMISSIONS AND EMISSIONS INTENSITY.



Notes: x-axis shows energy production; y-axis shows absolute emissions; radiant lines show emissions intensity; black triangle indicates 2019 values (all 100%); square shows 2040 values. See "how to read these crossplots" box. Emissions (bar chart) for both oil and gas are split by emissions scope. Scope 3 emissions are 85% of total emissions in 2019; scope 1 and 2 emissions are set to zero in 2040.

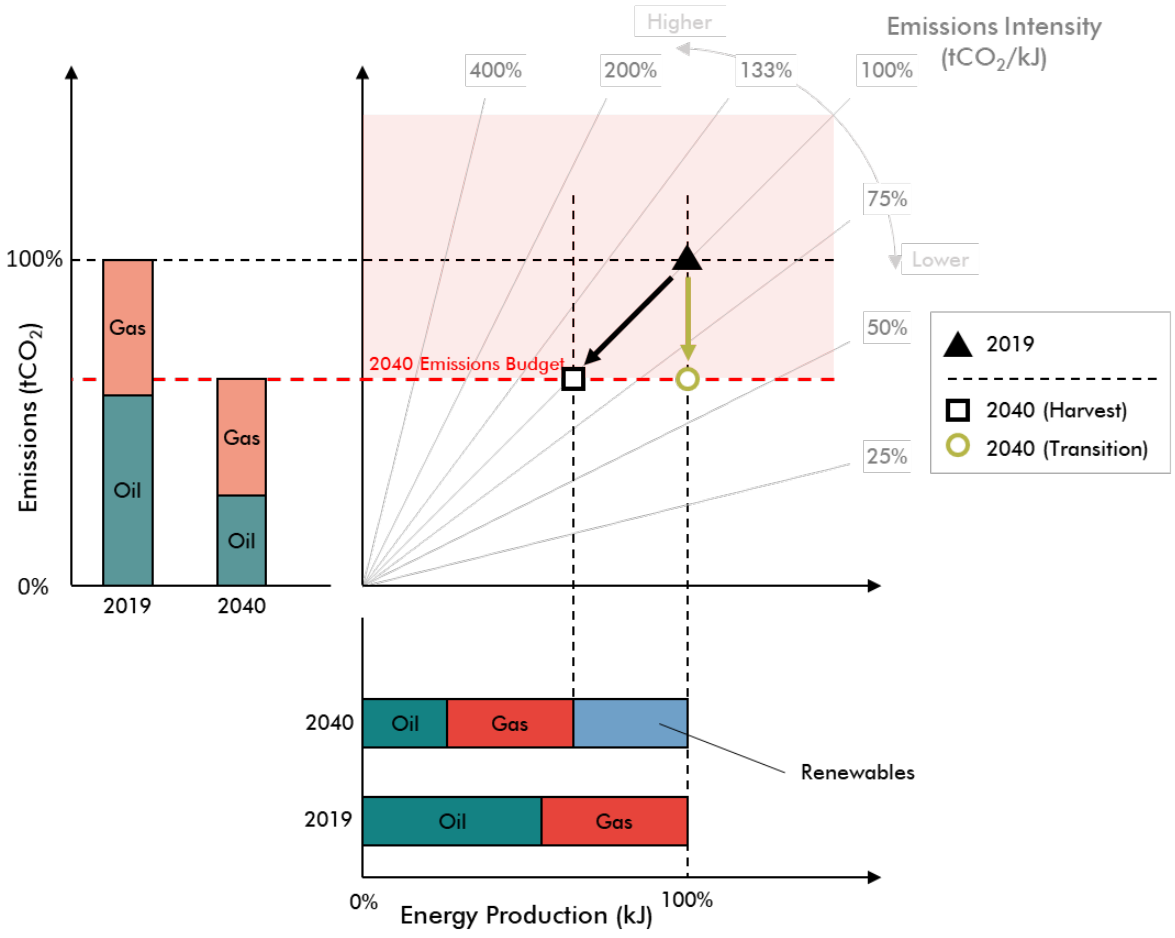
The discussion here focusses on carbon dioxide emissions; however, we note that companies also set targets related to the release of methane (e.g. venting). Such targets are also clearly an important part of the picture, again particularly to the extent that they lower emissions of other non-CO_2 greenhouse gases on an absolute basis fall (the flaring of produced methane is covered under scope 1 emissions). Furthermore, in only including scope 1 and 2 emissions within an ambitions target, and leaving overall production/demand unlimited, a company fails to demonstrate that it has adequately incorporated the changes to its fundamental business activities imposed by the energy transition.

To stay within budget, either harvest or transition

To achieve the required reductions in absolute emissions under the Paris Agreement, oil and gas consumption needs to fall, which in turn will reduce demand for producer's products. Avoiding the risk of creating stranded assets under these conditions will require companies to only sanction projects that fit within a Paris-aligned carbon budget. Any cash flows not invested in future fossil fuel development may then either be invested in other sectors ("transition") or returned to investors ("harvest").

For any given company, adopting either a harvest or a transition strategy may be most appropriate depending on its particular circumstances, management team, and investor interests. Figure 5 shows how both oil and gas production and absolute emissions fall under either harvest (black arrow) or transition (yellow arrow) – the hypothetical company thereby remaining within its absolute carbon budget. However, 2040 emissions intensity is not the same under the two strategies. Under a harvest model, emissions intensity stays approximately constant (the black arrow follows the 100% intensity line), whereas under transition intensity falls (the yellow arrow crosses intensity lines).

FIGURE 8. ILLUSTRATION OF "HARVEST" AND "TRANSITION" STRATEGIES ON ENERGY PRODUCTION, ABSOLUTE EMISSIONS AND EMISSIONS INTENSITY.



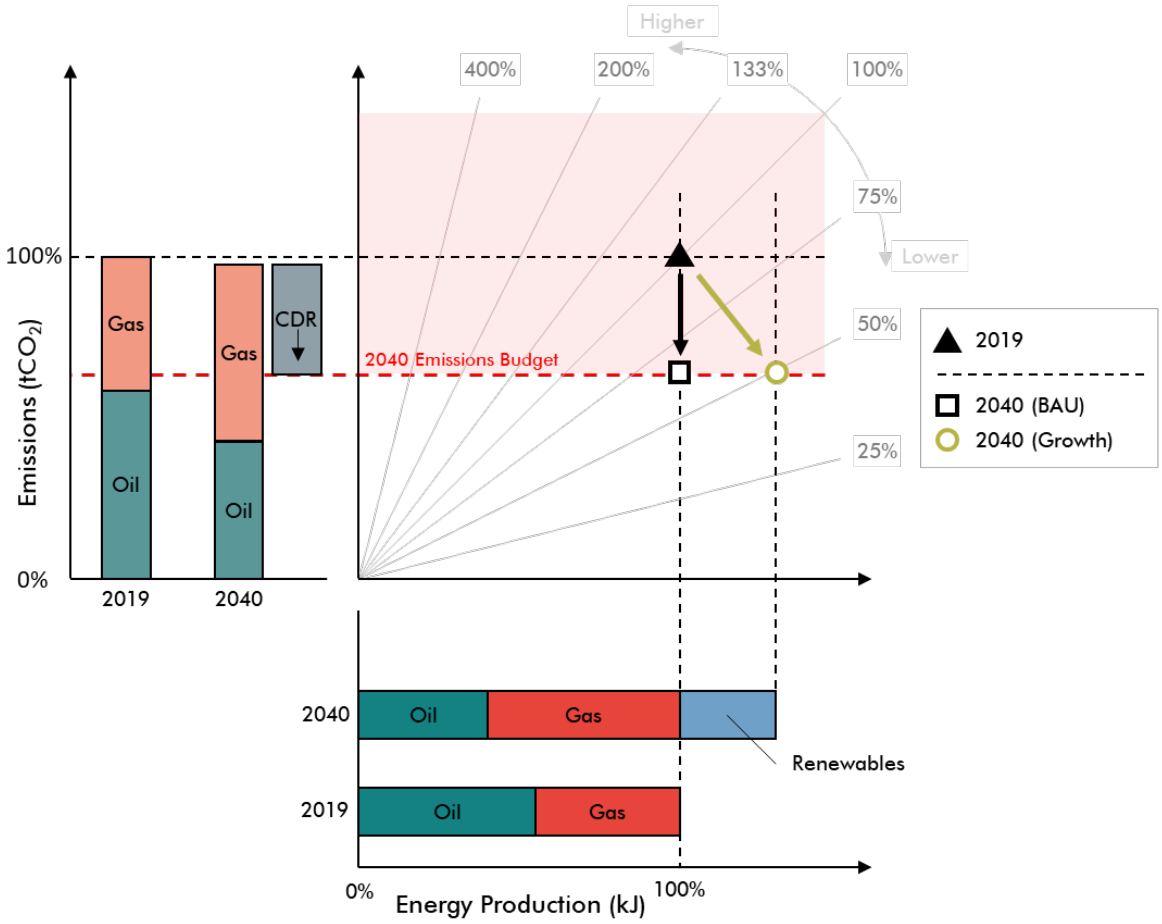
Notes: x-axis shows energy production; y-axis shows absolute emissions; radiant lines show emissions intensity; black triangle indicates 2019 values (all 100%). See "how to read these crossplots" box. 2040 emissions intensity is shown for both harvest (black square) and transition scenarios (yellow circle).

In terms of the climate impact however, whether a company goes into harvest (black arrow on Figure 5) or transition mode (yellow arrow) does not matter – both reduce absolute emissions in 2040 compared to 2019, and link to a finite global carbon budget. Consequently, a target with an absolute basis is appropriate for either model.

Offsets and negative emissions technologies

An additional approach to reducing net emissions and staying within an absolute carbon budget is by "offsetting" any remaining production through the use of negative emissions technologies (NETs, not to be confused with "net" in net zero). This is an approach that BP, for example, has indicated it will employ in reaching net zero – for any production in excess of a carbon budget, the associated emissions need to be offset with an equivalent volume of CO_2 permanently removed from the atmosphere. See Figure 9 for an example of this, using a 2040 emissions budget. In contrast, those companies that use an intensity approach to setting ambitions, intend to use NETs to reduce overall emissions intensity, rather than directly offsetting production.

FIGURE 9. ILLUSTRATION OF OFFSETTING EMISSIONS THROUGH CARBON DIOXIDE REMOVAL (AND POTENTIALLY GROWING RENEWABLES) ON ENERGY PRODUCTION, ABSOLUTE EMISSIONS (NET BASIS) AND EMISSIONS INTENSITY.



Notes: x-axis shows energy production; y-axis shows absolute emissions; radiant lines show emissions intensity; black triangle indicates 2019 values (all 100%); 2040 values shown for both a business as usual (BAU) strategy with flat oil and gas production (black square), and a strategy with growth in renewables (yellow circle). "CDR" = Carbon dioxide removal, which partially offsets life-cycle emissions from oil and gas use (shown to meet 2040 emissions budget from "Balancing the Budget". See "how to read these crossplots" box.

Offsets may also be incorporated in targets in other ways, for example, as contributing to reductions in emissions intensity. As described earlier in this chapter, intensity reduction approaches fundamentally fail to link to a finite carbon budget. Therefore, climate ambitions that rely on offsets still need to be framed on an absolute basis, rather than simply aiming to reduce intensity.

The use of negative emissions in future decades is common in climate scenarios. However, there are still issues with an approach based on offsets even if framed on an absolute basis (such as BP's). For example, the ability of negative emissions technologies to remove carbon at sufficient scale and in the required timeframe is highly uncertain. Technologies such as carbon capture and storage (CCS) and direct air capture are still nascent, and other options such as bioenergy and CCS (BECCS) are subject to concerns relating to land use.

Actions by others are not included

Further to the reduction in emissions intensity of 65% by 2050, Shell has stated an ambition to be a "net zero emissions energy business". The remaining 35% between Shell's 65% target and the 100% reduction required to reach net zero is potentially reliant on action by the consumers of Shell's products[12]: "our customers can themselves take action on their emissions" and "such actions by our customers can help Shell become a net-zero emissions business".

Decarbonising our energy system will certainly require changes throughout the entire value chain. However, without line of sight or targets relating to this 35%, we find it hard to call a company "net zero" based on it. Accordingly, we do not include it in the comparison table below. Similarly, for Total, its "net zero emissions" announcement only covers production supplied to European customers. For BP, emissions associated with production from its 20% stake in Rosneft are excluded, amounting to 29% of BP's total production for 2019[13]. ExxonMobil's carbon emissions target does not cover scope 3 emissions, and only includes emissions related to its 70% stake in Imperial Oil, a Canadian oil sands producer – accounting for just 5% of ExxonMobil's overall production[14].

[12] https://www.shell.com/energy-and-innovation/the-energy-future/shells-ambition-to-be-a-net-zero-emissions-energy-business.html *(accessed 5/5/20).*
[13] *BP Annual Report 2019. BP's group hydrocarbon production excluding Rosneft is 2.6mmboe/d (p.18). BP's share of Rosneft hydrocarbon production is 1.1mmboe/d (p.61).*
[14] *ExxonMobil Annual Report 2019 and Imperial Oil 2019 Annual Financial Statements.*

4.2 The scale of ambitions

In the previous section we explored different approaches to target setting – that is, the metrics used and their relevance in supporting global climate goals through a link to the carbon budget. Here, we consider why the scale of the ambitions also matters, both in terms of the end goal (e.g. in 2050) and, crucially, through interim targets.

Not all net zero targets are equal…

As in the introduction, under most 1.5°C scenarios, net zero emissions is reached by around 2050. Beyond this point, global emissions must be entirely offset, or more commonly negative on a net basis (to reduce the amount by which the carbon budget has been exceeded). Many of the newly-announced climate goals link to this, with a goal of "net zero" in 2050. However, as discussed, it is the aggregate amount of emissions that drives warming – hence the emissions pathway followed to net zero matters in determining the climate outcome, not just the net zero point.

At a company level, the pathway used within any emissions ambition presumably impacts the required pace of change of the underlying business, and the immediacy with which the energy transition is assumed to impact strategy. In planning, some companies use scenarios developed by international organisations (e.g. the IEA) as reference points, whilst others have developed their own "low carbon" or transition scenarios[15], which vary as to the pace at which emissions fall.

…and the pathway a company follows matters

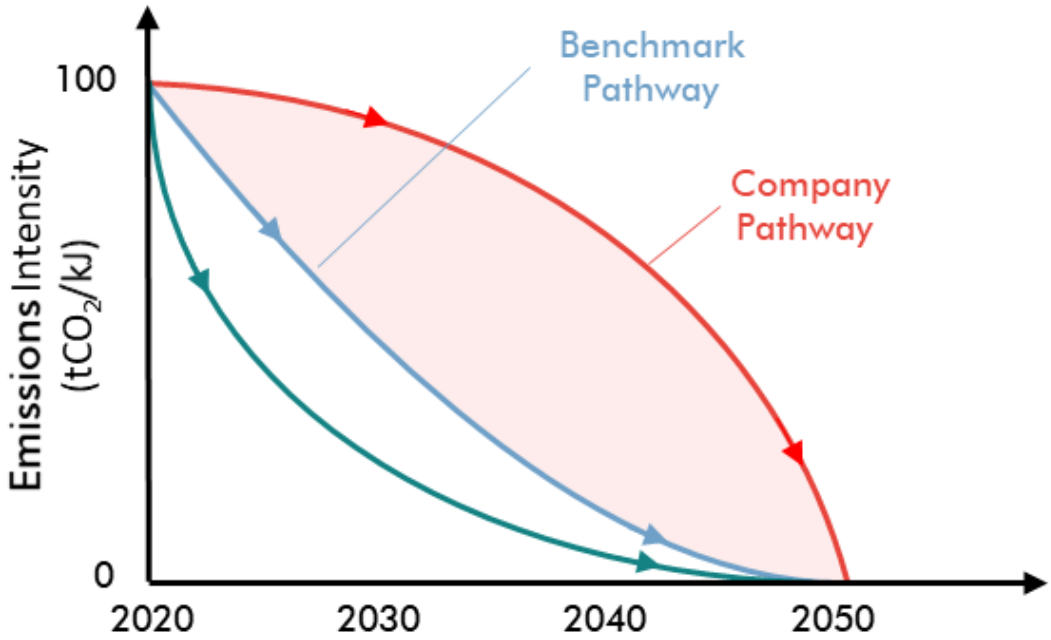
When comparing company targets, the advantage of using reference scenarios is that they define pathways for different sectors (e.g. agriculture, energy), factoring in assumptions on energy demand changes (e.g. population growth; changes in living standards) and effectively allocating the carbon budget between sectors. An advantage of using benchmarks is that it thus perhaps mitigates the incentive for companies (from all sectors) to favour their own industry when developing scenarios. The IEA's B2DS scenario (estimated to be associated with 1.6°C in 2100, with some deployment of NETs) is an example of a widely-recognised reference scenario.

Given the assumptions on demand that go into reference scenarios, the emissions pathways *could* be used to derive a reference intensity reduction pathway. This *could* then be used to assess a company's progress at "decarbonising" the energy it supplies, *provided* it was linked to a finite limit on energy production at the company level. Figure 10 shows an illustration of this, where the blue line is the emissions intensity pathway in the reference scenario, and the red line shows the company pathway (slower pace of change). Such an approach would compare the gap between the two pathways to indicate whether the energy supplied by a company was decarbonising at a rate consistent with a given benchmark scenario, or was leading to additional aggregate emissions over the period (orange shading).

A company that plans based on a slower pace of change (red line) risks sanctioning projects that turn out to be uneconomic as demand weakens; these assets risk being stranded. Alternatively, a company that plans on a more accelerated reduction in fossil fuel use (the blue line) and sanctions projects in a more conservative manner exposes its investors to less of these risks.

[15] *E.g. Shell's "Sky" scenario, BP's "Evolving Transition" scenario.*

FIGURE 10. ILLUSTRATIVE COMPARISON OF EMISSIONS INTENSITY PATHWAYS DERIVED FROM A BENCHMARK SCENARIO AND A COMPANY'S OWN SCENARIO.



Notes: Schematic emissions intensity pathways derived from on a sector carbon budget with an absolute limit to overall energy colours link to the global pathways shown in Figure 2; green line shows a pathway which does not exceed the carbon budget or lead to temperature overshoot.

However, even if such energy production limits were in place at the company level, an approach to comparing company climate goals based on the company intensity reductions at a single point in time would be insufficient. A company that reaches net zero in 2050 following the pathway in its own scenario could have a very different intensity compared to the benchmark (or peers) in the interim, so such an approach would fail to link to a given carbon budget.

Interim targets are crucial

We have described how the end goal of a company ambition in 2050 is insufficient in itself in terms of fully linking to climate outcomes. Interim targets are therefore crucial to avoid the gap in emissions pathways as shown in Figure 10. Without such interim targets, a long term target will perhaps have little impact on the actions of senior management in 2020, given other short term pressures and incentives[16]. They would be effectively unconstrained, with meeting a 2050 goal left to be their successors' problem, and may therefore continue to chase production growth. Interim targets are therefore critical for both emissions reductions and delivering returns with mitigated risk for investors.

[16] *See Carbon Tracker's reports "Paying with Fire" (Feb 2019) and "Fanning the Flames" (Mar 2020) for discussion on the importance of executive incentives. Available at:* https://carbontracker.org/reports/paying-with-fire/*and* https://carbontracker.org/reports/fanning-the-flames/

Target methodologies vary significantly

Direct comparison of company ambitions is hindered by the lack of comparability in the way that they are calculated. For example, ostensibly similar goals may vary by factors including:

- **Scale of oil and gas covered** – for example, BP's target does not cover its interest in Rosneft.
- **Upstream or downstream/activities covered** – for example Shell's target includes third party crude that it markets; Repsol's does not.
- **Calculation of energy** – where intensity targets are calculated in terms of CO_2 per unit of energy, the denominator may be calculated on a different basis. For example, most companies calculate their energy produced from renewables by converting it into a fossil fuel equivalent, i.e. the amount of fossil fuel that would be required to produce the same amount of electricity in a thermal plant, whereas Eni calculate using the electricity generated from renewable sources.

The development of a common standard for emissions ambitions would be of great value to users trying to compare different company announcements.

In this report, we focus specifically on the high level structure of emissions targets, in particular on the extent to which they reflect an understanding of the finite limits on demand for fossil fuels under a low-carbon outcome. Given the lack of comparability illustrated above, we do not directly focus on the magnitude of the reductions in detail, and show the company targets at "face value" without attempting to normalise.

4.3 Comparison of company goals

Having reviewed the merits of different approaches to ambitions, and the importance of both extent and scale, we are able to derive a relative company ranking with a particular focus on the structure of ambitions, as relates to their conceptual link to the carbon budget. Here, we consider the seven majors plus two other integrated companies who have notable climate policies: Equinor and Repsol.

In assessing company goals, we separately consider the metrics used, and the extent and stated scale of the ambitions (see box and Figure 11), to derive a relative ranking (Table 2). The characteristics (step 1) define the ranking band (shown by the background colours in Table 2) with extent (step 2a) and scale (step 2b) used to separate companies within each band.

The focus is on those ambitions/targets which cover upstream production, either through a specific upstream goal, or the most applicable company-wide one; in the case of multiple goals for a company, that which places the company into the highest band is used. For integrated companies with diverse activities, other targets may be appropriate for different parts of the business.

Ranking criteria – steps used to assess companies' goals.

1. Consider the characteristics of the metrics to define the ranking "band"

- Does the metric used have an absolute basis to it?
- Are scope 3 emissions covered by the metric?
  - For companies which cover only operational emissions, a metric which covers both scopes 1 and 2 emissions is ranked above one that covers only scope 1.

2. Define the relative ranking within each band

a. Assess the extent of emissions covered

- Are emissions covered on an equity share basis? (as opposed to assets that are under the operational control of the company).
- Is the full extent of upstream activities that the company has an interest in covered?

b. Consider the scale of interim ambitions/targets

- What is the magnitude of interim targets?
  - For similar interim targets, the end goal in 2050 is considered.

Analysing in this way assesses the structural link to the global carbon budget, and highlights targets which fail to drive emissions reductions commensurate with climate targets. Crucially it also links to our financial analysis, by identifying those companies which appear to most recognise the limitations to their business models through the energy transition and hence might feed through to a more conservative project sanction process. The are complementary to our assessments of capex alignment approaches companies use to demonstrate compliance with Paris in their sanctioning processes[17].

[17] *See "Breaking the Habit" and Carbon Tracker's recent note on oil and gas accounting "The Impair State", available at:* https://carbontracker.org/reports/the-impair-state/

FIGURE 11. FLOW DIAGRAM TO SHOW APPLICATION OF COMPANY RANKING METHODOLOGY.

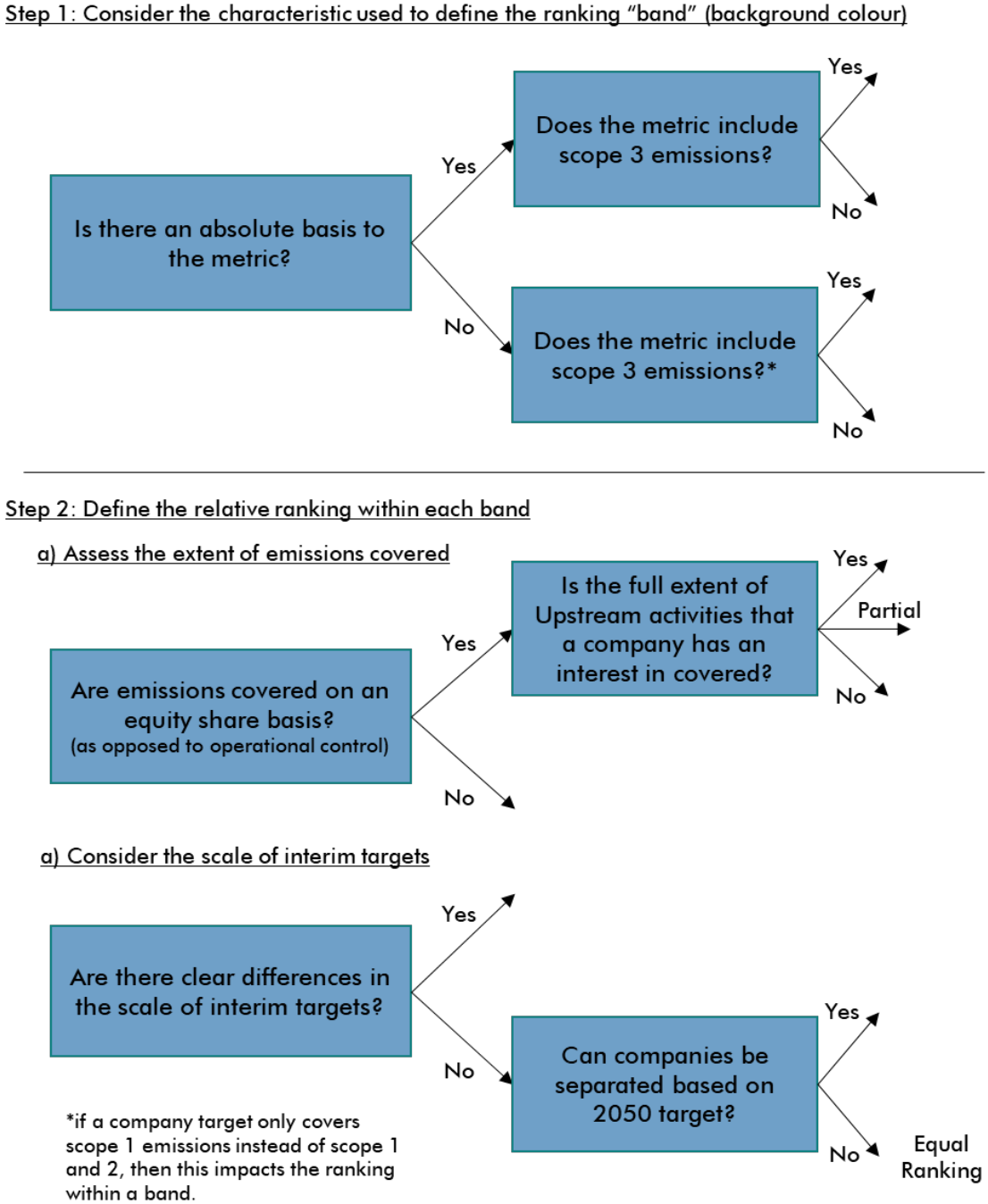


TABLE 2. RANKED COMPARISON OF COMPANY EMISSIONS TARGETS COVERING UPSTREAM PRODUCTION

Rank	Company	Metric	1. CHARACTERISTICS		2A. FULL EQUITY SHARE?	2B. SCALE	
			Absolute Basis?	Scope 3 Emissions		Interim	2050
1	Eni	Emissions from O&G production	Yes	Yes	Yes	30% by 2035	80%
2	Repsol[1]	Emissions from O&G production	Yes	Yes	Yes	-	Net Zero
3	BP	Emissions from O&G production	Yes	Yes	Partial	-	Net Zero
4	Shell[2]	Emissions intensity of all energy sales	-	Yes	Yes	2-3% by 2021 30% by 2035	65%
5	Total[3]	Emissions intensity of all energy sales	-	Yes	Yes	15% by 2030 40% by 2040	60%
6	Equinor	Emissions intensity of all energy sales	-	Yes	Yes	-	>50%
7	Chevron	Operational emissions intensity	-	-	Yes	5-10% (oil) and 2-5% (gas) by 2023	-
8	Conoco-Phillips	Operational emissions intensity	-	-	-	5-15% by 2030	-
9	Exxon-Mobil[4]	Operational emissions intensity	-	-	-	10% by 2023	-

Source: Company disclosures, Carbon Tracker Analysis.

Notes: Shading indicates ranking band and is based on metric characteristics. [1]Repsol's interim targets use its "carbon intensity indicator" and so are not included in this focus on its absolute end goal. [2]Shell's "Net Zero Emissions Business" target for 2050 is excluded as it does not rule out being dependent on customers' actions. [3]Total's ambition relates to its wider global goal; underlying this is a narrower net zero scope 1-3 emissions target which only covers products consumed in Europe and is not shown above. See notes in appendix for full discussion.

Scope 3 emissions targets – a two tier approach

For the six European companies in our analysis, we broadly see two different approaches. Equinor, Shell and Total all use an intensity approach to emissions reductions that factors in all energy produced. As discussed, such an intensity approach allows oil and gas production – and thus emissions – to grow, as long as sufficient non-carbon energy sources are added to a portfolio. Even with interim targets therefore, these goals fail to both fully reflect the finite carbon budget and drive the conservative sanction behaviour required to navigate the transition.

In contrast, we see the approaches adopted by BP, Eni and Repsol approach as having a greater link to the budget as they have ambitions covering oil and gas production on an absolute basis, separate to those covering energy supply. While Repsol's goal is ostensibly based on its "carbon intensity indicator" – an intensity measure across all energy sales – as the goal reaches net zero in 2050, this implies an absolute upstream target at that point, and we have characterised it as such in this analysis[18]. Similarly, while BP's net zero target covers less of its operations than does Shell's 65% reduction target, the absolute nature of a target that reaches net zero means it is included in the band above.

A criticism of the way BP and Repsol have framed their goals is that they may be obviated by a move out of production and into a focus on refining/trading the crude of others. If so, then the overall climate ambition becomes similar to Shell and Total's in terms of intensity of the products they provide from the downstream; crucially, however, if this is the case, extraction will have ceased for both BP and Repsol. We note that BP also has a goal which includes all sold products, including those purchased from third parties, formulated on an intensity basis and stipulating a reduction of 50% by 2050.

A widening Atlantic divide

The three companies at the bottom of our rankings are the three North American companies covered in our analysis. None have climate goals which are calculated on an absolute basis or include scope 3 emissions. We place Chevron slightly ahead of ConocoPhillips, as the former now uses an equity share approach, in comparison to only including operated assets. ExxonMobil are firmly at the bottom of the list as their CO_2 target covers only emissions related to its stake in Imperial Oil.

Battle for the top: interim targets are rewarded

We place Repsol ahead of BP in our rankings as BP's ambitions do not cover the emissions from the full extent of upstream activities (production from Rosneft is excluded). At the time of writing, BP have yet to publish interim goals to back up their net zero announcement; we look forward to seeing these, and this could impact BP's relative positioning vs. Repsol (which does have interim goals, albeit on an intensity basis). BP has guided to expect further details in September 2020.

With its approach meeting all three Hallmarks described above, and an interim goal (2035) covering scope 1, 2 and 3 emissions an absolute basis (in contrast to Repsol), we accordingly place Eni at the top of the table, despite its longer term ambition not quite reaching net zero.

[18] *This metric only has an absolute basis once net zero is reached (0% intensity = zero emissions on a net basis) and so Repsol's interim goals are not included within the ranking table.*

4.4 Conclusion

We continue to believe that satisfying the twin requirements of stakeholders – to lower emissions in accordance with the Paris Agreement, and to limit the financial risk of destroying value by investing in stranded assets – will require oil and gas companies to invest as if on a low carbon pathway.

Companies continue to fail to explicitly commit along these lines, preferring instead to set ambitions relating to their emissions. These ambitions may give reassurance that companies are adapting in the face of the transition, but only to the extent that they reflect that the reality of a limited carbon budget has been internalised. While all efforts to reduce pollution are welcome, oil and gas company emissions ambitions vary significantly in this regard.

Once a company has set climate goals that effectively link to the finite limits of the global carbon budget, then within this framing it will still need to focus on only developing low-cost assets that are resilient to lower levels of demand/pricing. For example, a company might set stringent emissions targets commensurate to the climate challenge, but if its portfolio is comprised exclusively of marginal assets, then it may still fail to deliver for financial stakeholders in the transition.

We believe that considering strategy in this way offers the chance to align both environmental and financial concerns; emissions ambitions may be one piece of a comprehensive strategy that prioritises Paris-aligned capital allocation.

Appendix A – Company Notes

Here we have listed further details on how we have characterised each company's emissions targets, along with links to recent Carbon Tracker blogs following company announcements, which contain further links to original company disclosures. Company notes are ordered by their ranking position.

Eni[19]

In February 2020, Eni announced three targets covering production. Ambition (2) is the one which is included within the ranking table.

1. "Net zero upstream scope 1 and 2" by 2030.
2. "Absolute net greenhouse gas lifecycle emissions" (scopes 1, 2 and 3): -30% in 2035; -80% in 2050 (vs 2018).
3. "Net carbon intensity" (scopes 1, 2 and 3): -15% in 2035; -55% in 2050 (vs 2018).

Repsol[20]

In December 2019, Repsol announced a target to be a "net zero emissions company by 2050".This extends the ambitions of its previous announcements to reduce its carbon intensity indicator 40% by 2040, with other interim targets of -10% in 2025 and -20% in 2030 (from a 2016 baseline). The carbon intensity indicator is an intensity measure, however, at the point net zero is reached, the target effectively becomes an absolute one. Accordingly, we consider the 2050 goal as an absolute target for the company ranking. However, as interim targets have an intensity basis, they are not included in the ranking table.

BP[21]

In reframing the company's strategy in February 2020, BP announced five aims, and we highlight the first three below. Aim 2 is that which is included within the ranking table, as it covers scope 1, 2 and 3 emissions associated with upstream production on an absolute basis. We note that BP does not include the production from investment in Rosneft within its emissions ambitions, as noted in the ranking table with a "partial" under the question relating to the extent of emissions covered.

1. "Net Zero operations" (scopes 1 and 2) – upstream and downstream.
2. "Net Zero" on oil and gas production" (scopes 1, 2 and 3) – upstream.
3. "Halving intensity of energy products" – downstream.

[19] https://carbontracker.org/eni-the-first-oil-company-to-lay-out-a-strategy-of-managed-decline/
[20] https://carbontracker.org/repsols-net-zero-ambition-joining-the-dots/
[21] https://carbontracker.org/bps-net-zero-ambition/

Shell[22]

In April 2020, Shell announced the ambition "to become, by 2050 or sooner, a net-zero emissions energy business", with three main elements:

1. "Net zero on all the emissions from the manufacture of all our products by 2050".
2. "Reduce the Net Carbon Footprint of our energy products" by 65% by 2050 (increase on the previous goal of 50% by 2050).
3. "to achieve our ambitions we must help our customers decarbonise".

As noted within Section 4.1 of this document, we find it hard to call a company a "net zero emissions business" if it does not rule out relying on its customers for this goal to be achieved. Accordingly, we only include element 2 above in the ranking table, which is an intensity measure.

Total[23]

Following engagement with the CA100+ initiative, Total updated its climate ambitions in May 2020, announcing three main steps:

1. "Net Zero across Total's worldwide operations by 2050 or sooner (scope 1+2)".
2. "Net Zero across all its production and energy products used by its customers in Europe [EU + Norway + UK] by 2050 or sooner (scope 1 + 2 + 3)".
3. "60% or more reduction in the average carbon intensity of energy products used worldwide by Total customers by 2050 – with intermediate steps of 15% by 2030 and 35% by 2040 (scope 1 + 2 + 3)".

While aim 2 does cover scopes 1, 2 and 3 emissions from upstream production on an absolute basis (at the point net zero is reached in 2050), this only covers Europe; in our ranking table we focus on the wider, global aim. Accordingly, aim 3, which is framed on an intensity basis, is the ambition included within the ranking table. We note that the scale of ambition is increased from a previous 50% reduction, while interim targets have also been enhanced.

[22] https://carbontracker.org/shells-revised-emissions-targets-higher-ambition-but-still-flawed/ *and* https://www.shell.com/energy-and-innovation/the-energy-future/shells-ambition-to-be-a-net-zero-emissions-energy-business.html *(accessed 18/06/20).*

[23] https://carbontracker.org/totals-extended-emissions-ambition/ *and* https://new-publications.total.com/05052020/pr/original-joint-statement-total-climate-action-100-plus.pdf *(accessed 18/06/20).*

Equinor[24]

In February 2020, Equinor outlined a package of 9 ambitions, including the goal to "reduce net carbon intensity by at least 50% by 2050". We highlight three:

1. "Carbon neutral operations globally by 2030." [Scopes 1 and 2].
2. "Reduce the net carbon intensity, from initial production to final consumption, of the energy produced with at least 50% by 2050." [Scopes 1, 2 and 3].
3. "Reduce absolute emissions from operated offshore fields and onshore plants in Norway by 40% by 2030, 70% by 2040 and towards near zero by 2050." [Scopes 1, 2 and 3].

Aims 2 and 3 both cover scope 1, 2 and 3 emissions, with aim 2 on an intensity basis and aim 3 on an absolute basis. As aim 3 only covers Equinor's operated fields in Norway, we do not include this within the ranking table, and the wider aim 2 is included.

Chevron[25]

In October 2019, Chevron announced plans "to reduce emissions intensity from oil and natural gas production". There are separate targets for oil (5-10%) and gas (2-5%) reductions by 2023 (vs 2016). These cover scope 1 and 2 emissions, and apply to "all upstream Chevron oil and natural gas, whether Chevron has operational control or not".

ConocoPhillips[26]

ConocoPhillips has a target to have a "GHG Intensity Reduction" of 5-15% by 2030, which covers scope 1 and 2 emissions, and only applies to its operated production.

ExxonMobil[27]

ExxonMobil does not have any climate ambitions related to carbon dioxide emissions on their own production. It does however have a target to reduce "GHG emissions intensity from oil sands" (operated by Imperial Oil which is majority-owned by ExxonMobil) by 10% by 2023 (vs 2016). The target covers just a proportion of ExxonMobil's overall production, is on an intensity basis, and does not cover scope 3 emissions.

[24] https://www.equinor.com/en/news/2020-02-06-climate-roadmap.html *(accessed 18/06/20).*
[25] *Chevron, "Chevron Sets New Greenhouse Gas Reduction Goals", October 2019. Available at:* https://www.chevron.com/stories/chevron-sets-new-greenhouse-gas-reduction-goals *(accessed 18/06/20)*
[26] *ConocoPhillips, Sustainability Report 2018*
[27] *ExxonMobil, "Energy and Carbon Summary", 2020 available here:* https://corporate.exxonmobil.com/-/media/Global/Files/energy-and-carbon-summary/Energy-and-carbon-summary.pdf *and* https://www.imperialoil.ca/en-CA/Sustainability/Environment/Energy-and-carbon-summary *(accessed 18/06/20)*

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