



Sailing into the Sunset or Charting a New Course?

A discussion paper on alignment metrics to measure the prospects for a fossil fuel transition



Contents & imprint

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About 2° Investing Initiative

The [2° Investing Initiative](#) (2DII) is an independent, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals.

Globally focused with offices in Paris, New York, Berlin, London, and Brussels, 2DII coordinates some of the world’s largest research projects on sustainable finance. Its team of finance, climate, and risk experts develop research, tools, and policy insights to help financial institutions and regulators hasten and adapt to the energy transition. In order to ensure its independence and the intellectual integrity of its work, 2DII has a multi-stakeholder governance and funding structure, with representatives from a diverse array of financial institutions, governments, and NGOs.

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Summary

In the aftermath of COP26, the future of the fossil fuel industry is coming under intense scrutiny from all sides. With fossil fuel production now generally considered to be a sunset industry, greater visibility is urgently needed on how the major producers will chart a course to the new energy economy and, importantly, what will happen to their legacy fossil fuel assets along the way.

*In this discussion paper **Nicholas Dodd, Ned Dunne and George Harris** analyse the industry from an energy transition perspective, taking a fresh look at the prospects for the upstream oil and gas sector to make the transition to net zero and what new metrics may be needed by the financial sector to measure and track their progress. To do this, focus was placed on on upstream oil and gas production, in order to answer the following questions:*

- *What are the prospects for the net zero targets and commitments of upstream oil and gas producers to be translated into real change and investment?*
- *How do the current production plans of these producers square up with their public commitments to net zero targets and to a managed transition?*
- *What metrics may be needed to measure and track meaningful progress made by producers, as well as to select those with the best prospects for the future?*

In order to start to answer these questions alignment measurements were made for a cross section of upstream producers, cross checking our findings with recent sectoral analysis by Carbon Tracker Initiative and the Transition Pathway Initiative. A review was also made of selected scientific and commercial literature in order to develop a broader understanding of the challenges and dilemmas facing the sector.

Three main conclusions have emerged from this preliminary research which already start to point to where further work is needed on useful metrics:

1. *Keep an eye on what's happening short term: A near term perspective on compatible production is essential, with a focus on the alignment of forecast production by 2030. It is also important for analysts to understand the different producers active in the market and their distinct investment strategies, timeframes and reserves.*
2. *Phase down needs to be real: In order to understand whether new investment is serious it will be increasingly important to understand whether new investment is compatible and how production from existing fields will be phased down, as opposed to being simply sold off and the fossil asset continuing to operate, therefore having no impact in the real economy.*
3. *Determining who will be the winners and losers: It is not yet clear whether major producers will make a transition in order to be part of the new clean energy economy and fast enough to avert dangerous climate change. The onus is on the financial sector to better understand what credible signs of transition they should be looking for as conditions for finance and investment.*

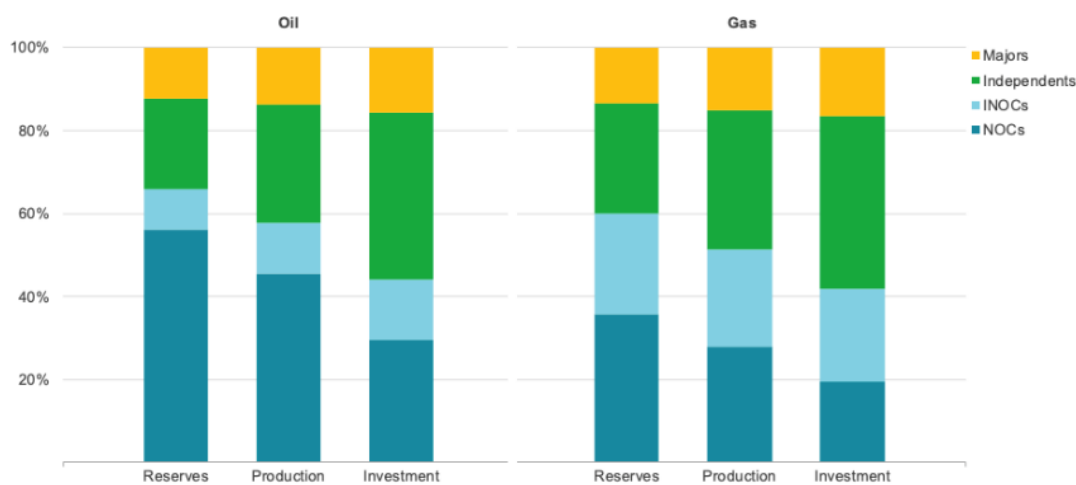
For each of these conclusions initial suggestions for possible metrics have been made which we intend to evaluate in more depth. To do this, we have just started a new study which will take place during 2022. This study will evaluate and test the options for metrics with stakeholders and banks, so that next year we can then make available through PACTA for Banks an improved set of metrics.

Where we are today – the transition dilemmas facing the global economy

Since the first oil well was drilled in the Caspian Sea in 1848, oil and gas have become the strategic foundation for the world economy. Together they account for nearly 55% of global primary energy consumption and around 42% of global greenhouse gas emissions. Predictions of peak oil production have repeatedly not come to pass, pushing into the future a debate on the energy dependency of the global economy. But with the threat of climate change now becoming ever more real, the prospect of peak demand followed by decline is now a scenario put forward by the IEA and is focussing governments, industry and investors on what should happen next.

To understand what the prospects are for the sector to make a transition, we first looked at the structure of the industry. In particular, we are interested in who the main actors are, who owns the production and who controls the reserves (see figure 1). This is important because it will enable us to understand what the potential points of influence are, as well as which financial institutions and assets classes may be relevant.

According to the IEA (2018) the production is controlled by the international majors (15%), independent producers (>25%), national producers controlled by sovereigns (25-45%) and independent national producers with an international reach (15-20%). The majority of reserves are controlled by national interests (>60%), but with reliance on investment from majors and independents to realise their potential. The industry is therefore not only motivated by shareholder value but also by strategic national interests, as valuable income for national budgets and sovereign wealth funds is at stake.



Note: Oil includes crude oil, condensate and natural gas liquids (NGLs).

Figure 1. Ownership structure of oil and gas reserves, production and investment by company type

Source: IEA (2018) based on the World Energy Model and Rystad Energy

We next turn our attention to who ultimately owns and finances the fossil fuel producers. The energy transition poses a major challenge as it implicates both the ultimate owners of their debt and equity (mainly banks and institutional investors) as well as their sovereign interests. Oil and gas producers have been a bedrock for institutional investment since the 1980s, with the majors and independents being somewhere

between 50% and 70% owned by pension and investment funds.¹ They have a weighting in all major indices used by investors, so their value is contributing to many people's pensions and investments. But now with its Net Zero scenario the IEA is giving the shareholders and lenders to these companies two key messages that cast into doubt the future value of the assets they hold:

- that from 2022 any commitments to new exploitation will be incompatible with a 1.5°C climate change scenario.²
- that if we follow a 1.5°C scenario there will be structural decline in the oil market. This will make future investments riskier and associated with high opportunity costs.³

Recent analysis of the potential losses from the stranding of fossil fuel assets in a 1.5°C scenario suggests that over 70% of the estimated \$1.4 trillion of losses would be borne by listed companies, of which 55% would be in OECD countries.⁴

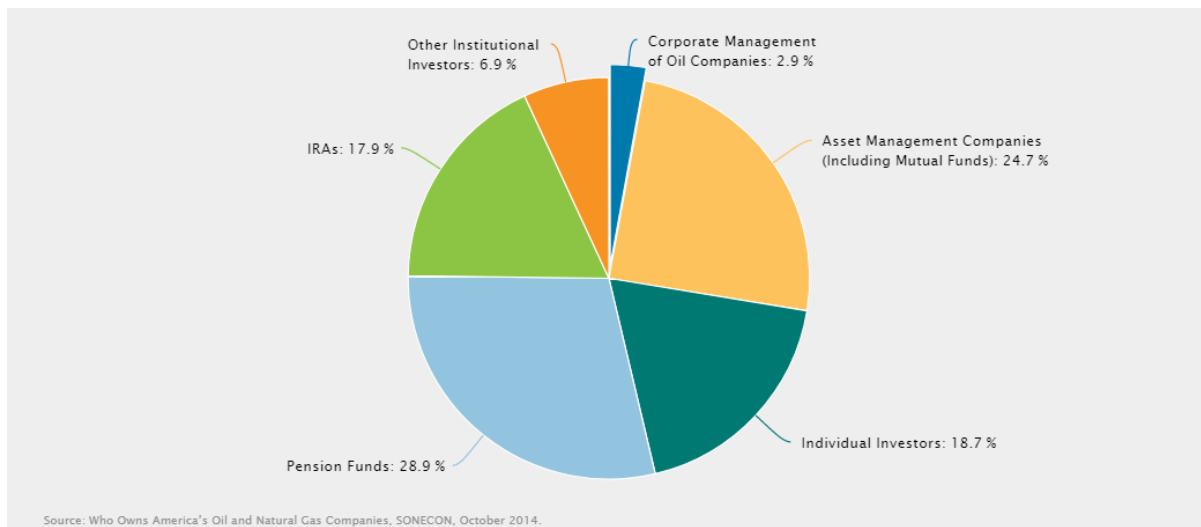


Figure 2. Who owns big oil? Ownership stakes in North American oil companies

Source: American Petroleum Institute (2014)

With the future value of fossil fuel producers' assets and revenue base appearing to now be vulnerable to future stranding and economic shifts, commentators have spoken of the business continuity 'trilemma'.⁵ This is based on the economic need to simultaneously:

1. Maintain investments in their core business,
2. preserve shareholder dividend payments, and
3. invest for the energy transition.

There is already a visible trade-off between these three economic dilemmas from the business perspective of a fossil fuel producer.

To this trilemma for the fossil fuel producer, this paper adds another perspective: that of the financiers of the producers, who need to ensure their investment is being used by producers to make the transition. The providers of capital now face a choice – to allocate capital to fossil fuel producers claiming they have the

¹ American Petroleum Institute, *Who owns big oil?* <https://whoownsbigoil.com/>

² As stated by the IEA in their Net Zero by 2050 scenario published in May 2021. The UNEP recently also published a similar message on the 1.5°C compatible 'production gap'

³ Based on a hurdle discount rate of >10%

⁴ Semieniuk et al *Stranded Fossil-Fuel Assets Translate into Major Losses for Investors in Advanced Economies*, University of Massachusetts Amherst, Working Paper series 549, October 2021

⁵ Pickl.M.J *The trilemma of oil companies*, *The extractive industries and society journal*, Elsevier, 8, 2021

capability to diversify their business models or new market players claiming to be able to move more quickly. Given the capital tied up in their global operations, as well the still pivotal role of oil and gas resources in driving the global economy, the transition trilemma will require careful managing by the financial community in order to avoid disruption, manage legacy assets and ensure the necessary scale and pace of change.

In order to answer our research questions, we decided to look in turn at each of the dilemmas facing the upstream oil and gas sectors, taking the perspective of the financial institutions that provide them with finance and investment. Taking each dilemma in turn, we have then used the analysis to identify what associated metrics could be used to measure and track progress towards a low-carbon economy.

Dilemma 1: claiming net zero alignment whilst maintaining production and investment in their core business

The first dilemma is about understanding how the present day plans of fossil fuel producers are aligned with the need to phase down future production according to net zero scenarios.

Major international producers are under increasing pressure from their shareholders to align with net zero emissions by 2050. The commitments of leading producers are based on alignment of their scope 1 and 2 emissions (the 5-30% of emissions from their upstream operations) and an increasing expectation of coverage for scope 3 (the 70-95% of emissions from actually using their products). But given the scale of the transition needed, do the real plans of these companies to produce oil and gas start to support these very long-term commitments?

We therefore decided to **measure the alignment with IEA net zero 2050 scenario of the production plans for a market cross section of major producers** – comprising large, mid and small capitalization majors, independents and national producers. We selected them from world, emerging market and energy MSCI benchmark indices used by investors. We then used 2DII's Paris Agreement Capital Transition Assessment (PACTA) tool⁶ to measure the alignment of these companies against the 1.5°C net zero scenarios published by the IEA (see the results in figures 3-6). PACTA uses 5 year forward production plan data for companies to enable measurement of alignment for fossil fuel production volume trajectories.

The results for some of the producers were at first counter-intuitive. The production forecasts are interpreted and discussed in turn for each main type of producers below:

The **EU majors** who have set ambitious net zero and scope 3 emissions targets and are rated strongly on transition management are, for the most part, anticipated to ***maintain or increase*** oil and gas production in the coming 5 years which is not compatible with any 1.5°C net-zero scenario (see figure 1);

⁶ PACTA enables the forecast production volume trajectory for fossil fuel producers based on Asset-Backed Company-level Data to be compared with the trajectory anticipated in these scenarios.

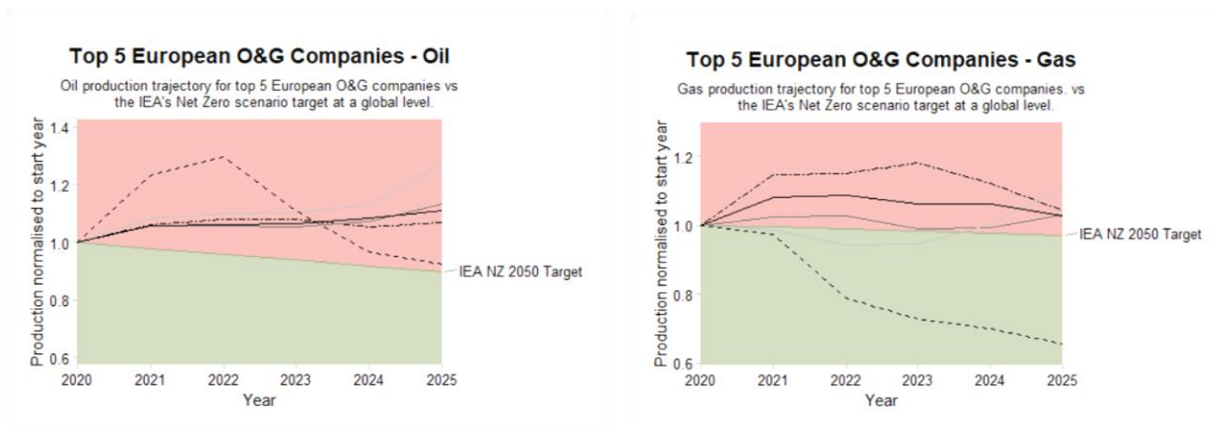


Figure 3. Production trajectory alignment for the top 5 EU majors 2020 – 2025

The **North American majors and independent producers** who have been slower to set net zero targets, address transition at management level and mainly focus on scope 1 and 2 emissions interestingly show a **decline** in production planned for the coming 5 years (see figure 2);

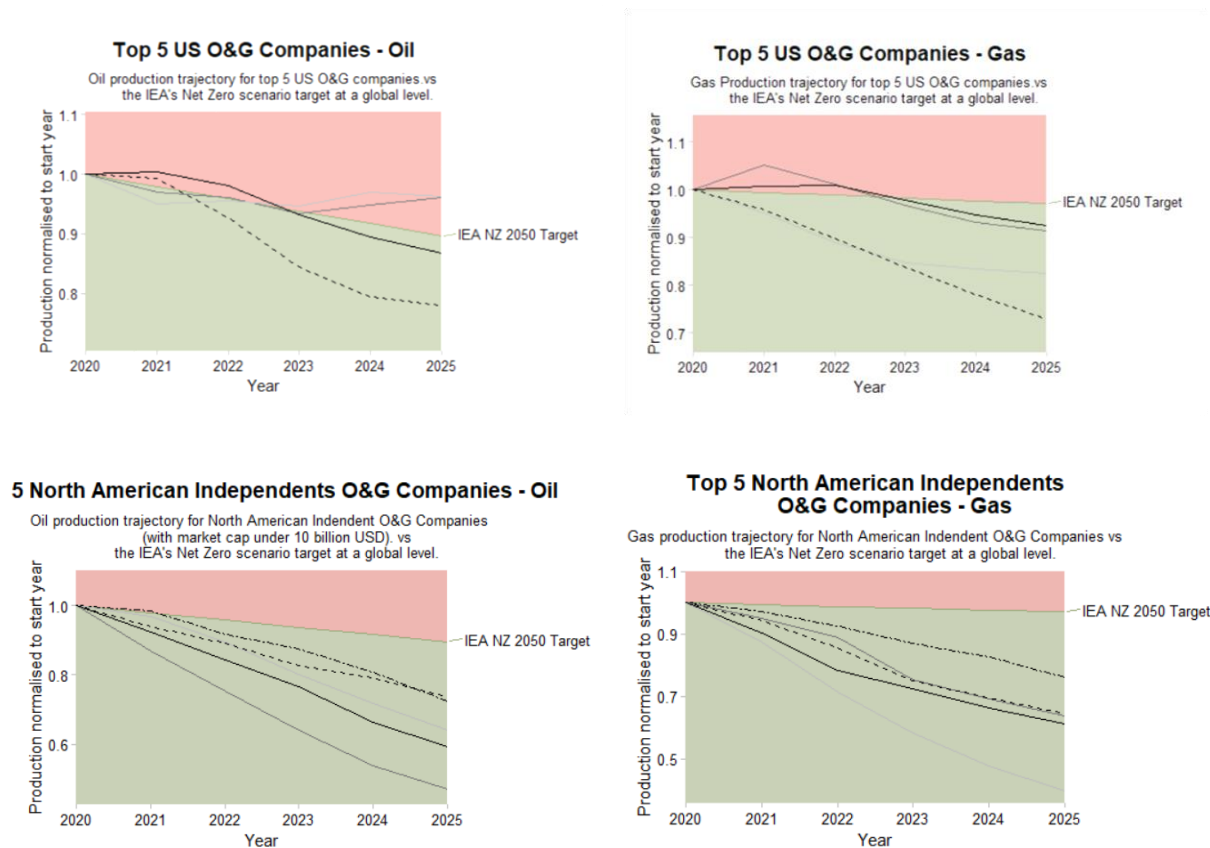


Figure 4. Production trajectory alignment for the top 5 North American majors and independents 2020 – 2025

Producers in emerging markets showed plans to increase production, though it is worth noting that any regional allowance for an increase in energy demand in emerging economies may not be fully reflected as the IEA Net Zero scenario is global.

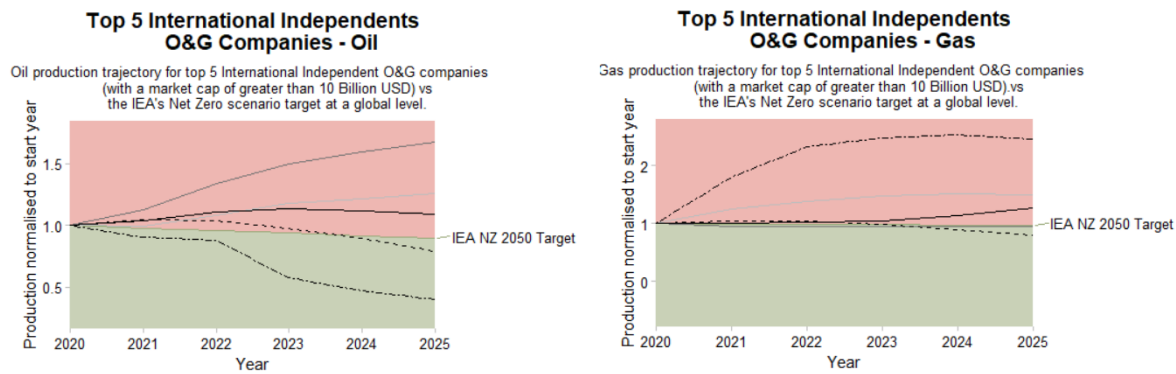


Figure 5. Production trajectory alignment for independent producers 2020 – 2025

National producers and their international ventures show plans to significantly *increase* production and there is as yet, limited evidence that this will be curtailed by transition considerations (see figure 3).

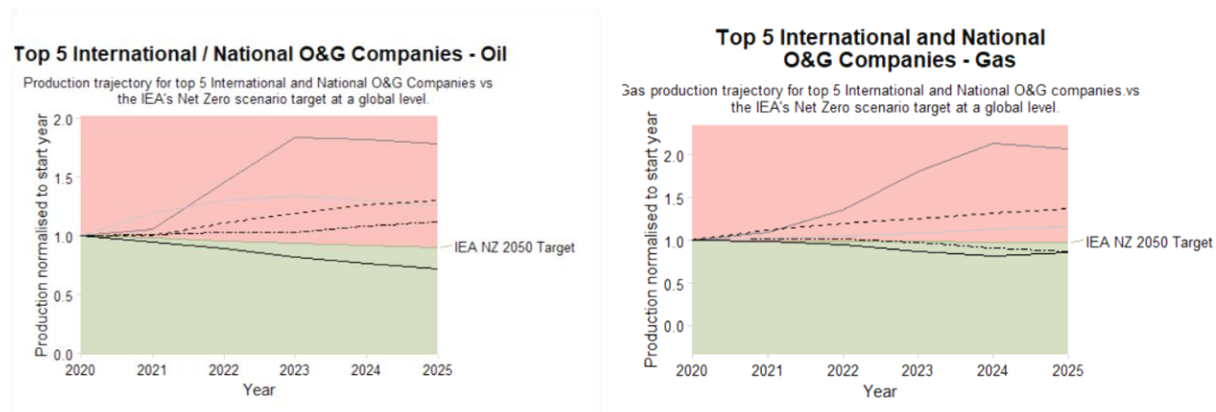


Figure 6. Production trajectory alignment for national/international producers 2020 – 2025

At first some of the results appear to be counterintuitive, but after consulting with some industry experts we learned that EU majors tend to invest in more capital-intensive projects that have longer lead times – such as offshore wells. This means that to understand if their production is set to decline in-line with their near-term (2030) climate change commitments, we should consider extending the time frame for alignment measurement from 5 to 10 years. The opposite is true for the North American majors and also for independent producers. They tend to invest in production assets with shorter term prospects and which decline more quickly - such as shale gas. Hence, we need to watch our 5-year forecasts carefully as their production may just as quickly ramp-up again post Covid-19. The national producers are a separate case in point. Their strategic motivations are longer term and driven by national economic interests. They do in part, however, rely on major producers to raise the capital to exploit reserves and sell the product. They are still therefore at the behest of the capital markets.

Putting aside short-term market factors, these results appear to accord with global projections for annual production, which indicate growth climbing from around 55 billion barrels in the 2010s to 62 billion barrels by 2030.⁷ A recently updated analysis by the UNEP and SEI similarly suggests that 110% more production is still forecast for 2030 than is compatible with a 1.5°C scenario.⁸ Moreover, annual investment in production is

⁷ Gong, B., Chapter 1 – Analysis on the structural changes in the global oil and gas industry and its trend in Shale energy revolution, Zhejiang University Press, Wiley Press, 2020

⁸ SEI, IISD, ODI, E3G, and UNEP. (2021). *The Production Gap Report 2021*. <http://productiongap.org/2021report>

forecast to grow from around 1,200 billion dollars in the 2010s to around 2,200 billion dollars by 2030. Some of this increase may be accounted for by an increase over time in the cost of extraction as the cheapest reserves have been exploited first followed by unconventional sources.

The company sample used comprises:

- *MSCI Large Cap Energy Index: Majors: BP (UK), Chevron (US), ConocoPhillips (US), EOG (US), Exxon Mobil (US), Shell (Ned), Total (Fr).*
- *MSCI Mid to Small Cap Energy index: Devon Energy Corp (US), Diamondback Energy (US), Halliburton Co (US), Hess (US), Occidental (US), Pioneer Natural Resources (US), Repsol (Spain).*
- *MSCI Small Cap Energy Index: Apache (US), Marathon (US), Ovintiv (US), Tourmaline Oil (CA), Arc Resources (CA), EQT (US), and Range Resources (US)*
- *MSCI Emerging Markets Index: Reliance Industries (IN), Gazprom (RU), Lukoil Holding (RU), Novatek (Ru), Saudi Aramco (SA), PTT (TH) and SK Innovation (SK).*
- *Companies not included in an index: Eni (IT), Equinor (NO), OGNC (China) and Petronas (MA)*

Dilemma 2: Preserving shareholder value and credit worthiness whilst exiting legacy business activities

The second dilemma relates to shareholder value and credit worthiness. As we have shown, the future value of oil and gas producers, as well as exposure to related transitions risk, should be a concern to most banks and institutional investors. Already analysts have pointed to a measured decline in the share prices of producers⁹ as well as an increase in the cost of capital.¹⁰

A range of potential risks to future shareholder value and credit worthiness are becoming evident that warrant further attention, not all of which are directly linked to climate risk but also to future forecasts for fossil fuel reserves and market shifts – for example:

- If the value of existing reserves have to be written down because it is no longer politically or economically viable to exploit them and they become impaired assets, what does that mean for company value and credit ratings?
- How will banks be able to provide credit at commercial rates to companies that forecasts as well as IEA energy scenarios say will need to wind down their principal operations?
- What will happen if the bottom falls out of retail demand for vehicle fuel, as indicated by government commitments to eliminate Internal Combustion Engine (ICE) technology from 2030 onwards?¹¹
- How will banks and investors shield themselves from exposure to production that has higher breakeven costs?

In response to these challenges, the strategy of majors BP and Shell have so far been to either continue to exploit assets in order to reinvest the profits in energy transition,¹² to sell off assets for reinvestment or to provide dividends to shareholders.¹³

Shell in particular has made the argument that in order to make the energy transition it has made corporate commitments to, it needs the cash generated by its legacy business. This appears to be the general business model adopted by the EU majors, but the questions is whether it can generate cash at a rate sufficient for the rate of clean energy investment needed. Also, it raises the question as to whether investors will be prepared to

⁹ IRENA, *International oil companies and the energy transition*, Technical paper 1/2021

¹⁰ Bloomberg Green, *Cost of Capital Spikes for Fossil-Fuel Producers*, 9th November 2021

¹¹ Petrol and diesel vehicle fuel is the main end market for petroleum (49% of end consumption)

¹² BBC, *Oil giant Shell says it needs oil to pay for green shift*, 3rd November 2021, <https://www.bbc.com/news/business-59154930>

¹³ Bloomberg Green, *Shell shows it favours investor returns over renewables deals*, 21st September 2021

wait for this model to yield results or whether they would prefer to reallocate to other new players in the market that they have more confidence in their capabilities to deliver clean energy technologies and services.

The sell-off of assets runs the risk of offloading impaired assets to private equity funds and producers in emerging economies – noting that in support of a just transition, scenarios tend to give more scope for producers in these regions to use their national reserves.¹⁴ The concept of ‘bad banks’, the breakup of producers and the establishment of run-down management funds have been put forward by, amongst others, Citibank¹⁵ and activist hedge funds¹⁶ as possible solutions that could also be applied to, amongst other sectors, oil and gas production.¹⁷ The term ‘responsible retirement’ is now being used.

The benefit of a responsible retirement approach would be to resolve the first and second dilemma through a managed exit that avoids the impairment of companies that are at the same time investing in clean technologies. At the same time, this won’t stop investors divesting shares and bonds holdings in producers in order to implement exclusion policies or to reduce portfolio CO₂ emissions, rather than engaging with them to change their business strategies. Either way, divestment of production assets and even whole companies will reduce control over the direction of the industry by companies that have made commitments to tackle climate change.

A major issue is that to date shareholders do not appear to have yet shown confidence in the business models and options for the clean technologies put forward by producers, in particular by the EU majors, who have led this area. EU producers have positioned themselves in the public eye to be, amongst other activities, leaders in:

- offshore wind investment and engineering (Equinor);
- solar photovoltaic manufacturing and operation (BP, Total);
- energy storage solutions (Shell);
- biofuel production (Eni, Total, Petrobras)
- forecourt electric vehicle charging (BP, Repsol);
- ‘green’ hydrogen production (Shell, Eni); and
- vertically integrated retail energy services (Total)^{18 19}.

So, although market perception is changing, to date these activities have not always been well received by shareholders. There is also limited evidence of these strategies even being considered by national producers and independents. They do, however, provide a window into what producers’ new role could be and how their assets could be leveraged – whether we are talking about their ability to raise finance, their engineering capabilities or their service station networks.

The slow pace of diversification and the failure of some new ventures, such as BP Solar, reflects the difficulty of moving into new business areas such as manufacturing as well as the challenge of how best to leverage their existing capabilities. This highlights a major part of the dilemma from the point of view of banks and investors - how can they judge which producers and which activities are likely to be winners or losers?

For the majority of producers, however, transition and clean energy production are not yet on the agenda. A new generation of activist investors such as Engine No 1 have responded to a lack of corporate foresight on these risks and the opportunities by intervening to force a change in fossil fuel producers’ business strategies. They have focused first on oil majors, counting on the support of larger shareholders such as institutional investors to make crucial management and strategic changes.²⁰

¹⁴ Financial Times, Hedge funds cash in as green investors dump energy stocks, 15th October 2021

¹⁵ Bloomberg Green, *Stranded assets - climate bad banks*, 18th June 2021

¹⁶ Financial Times, *Activist fund Third Point calls for break-up of Shell*, 27th October 2021, <https://www.ft.com/content/b4fc6926-e991-43ca-9ac8-3b1478c23dd5>

¹⁷ Driouch, R, *Breaking the climate impasse through carbon offsets*, Policy Brief Agenda 2030, Institut Rousseau, 2021/07

¹⁸ Pickl, M.J. *The renewable energy strategies of oil majors – From oil to energy?*, Energy strategy reviews (26), Elsevier, 2019

¹⁹ CMS, *Energy Transition: The evolving role of oil & gas companies in a net-zero future*, June 2021

²⁰ Engine No.1, *Re-energize Exxon*, <https://reenergizexom.com/the-case-for-change>

Dilemma 3: Re-directing resources and capabilities in order to make a credible transition

Whilst oil producers want to show they are active on energy transition, what financial institutions will increasingly need to know is whether they amount to credible indications of the investment strategies that will be needed to make the transition. As we have discussed, a small number of producers have set out strategies to leverage their legacy business in order to make a transition, but how can these be compared and evaluated and do any other producers have comparable strategies in place?

As a first step we therefore decided to **cross reference the production forecasts taken from PACTA with what we could find out about the emissions reduction targets and transition strategies of oil and gas producers.** To do this we used the result from analysis made by the Carbon Tracker Initiative and the Transition Pathway Initiative (TPI).

Looking first at Carbon Tracker Initiatives' ranking of emissions reduction targets, it reveals a mixed picture.²¹ Eni, Total and BP come out as front runners, with commitments to absolute emissions reductions by 2030 and 2050 across emissions scope 1-3. Shell, Equinor, Repsol and Occidental include scope 3 reductions emissions, but set interim targets on an intensity basis. ConocoPhillips, Chevron and ExxonMobil only have goals covering operational emissions (scope 1 and 2).

Overall, the results appear to show an inverse relationship between the ranking (and therefore ambition) of Majors and their forecast production values. But the caveats we referred to earlier in this paper need to be borne in mind when interpreting these results – namely that it may be more accurate to look at the alignment results on a 10 year time horizon. Note also that some ventures and holdings may not have been taken into account – for example, BP's net zero target is understood not to include their Russian venture Rosneft, which represents 29% of their production.²²

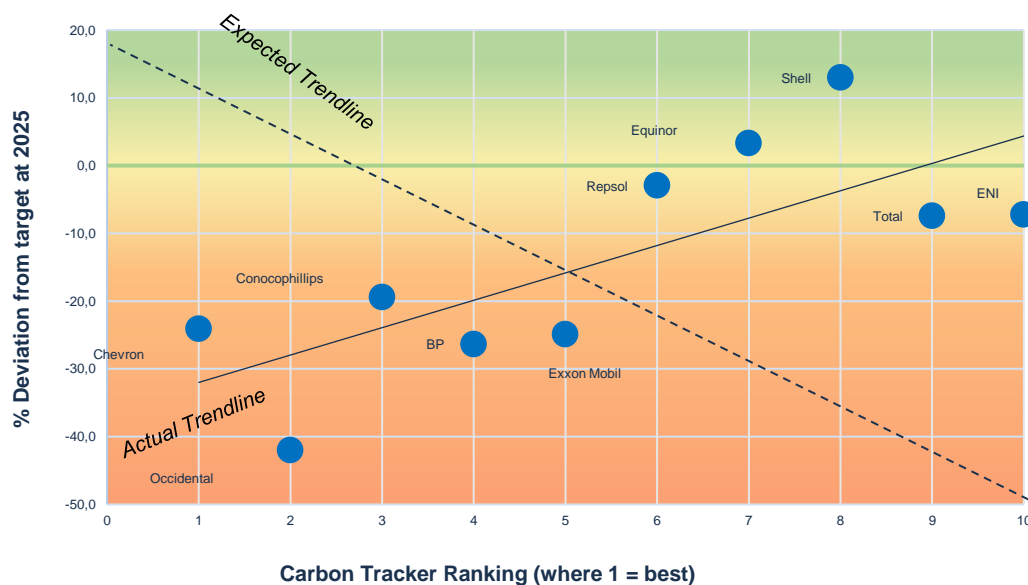


Figure 7. Comparison of Carbon Tracker Initiative rankings with projected production trajectory alignment (2025 time horizon)

²¹ Carbon Tracker Initiative, *Absolute impact 2021 – Why oil and gas “net zero” ambitions are not enough*, May 2021

²² In the wake of the Russian invasion of Ukraine, BP have announced that it will sell its 19.75% share in this venture.

Next, we turned to the Transition Pathway Initiative's assessment methodology, which is backed by major international asset owners, to see what it could tell us about oil & gas producers' path to transition. The initiative assesses companies on their management of GHG emissions, including their targets for reduction, as well as the risks and opportunities related to transition.²³ The results resembled those from the Carbon Tracker Initiative ranking, showing what appears to be an inverse relationship between the assessments (and therefore ambition) of the producers and their forecast production values. The poorest scoring companies were the independent producers.

Table 1. TPI management quality ratings for the selected producers

Name	Type	Country	Date of MQ	MQ Rating
Total	Major	France	31/03/2020	4.5
BP	Major	UK	31/03/2020	4.5
ENI	Major	Italian	16/03/2020	4.5
Equinor	INOC	Norway	31/03/2020	4.5
Hess	Independent	US	18/09/2019	4.5
Shell	Major	Nederlands	08/08/2019	4
ConocoPhillips	Major	US	21/02/2020	4
Occidental	Major	US	31/03/2020	4
Repsol	Major	Spain	31/03/2020	4
Exxon Mobil	Major	US	12/03/2020	3
Chevron	Major	US	10/03/2020	3
Gazprom	INOC	Russia	31/03/2020	3
PTT	INOC	Thailand	31/03/2020	3
Novatek	Independent	Russia	31/03/2020	3
SK Innovation	Independent	South Korea	19/03/2020	3
Apache	Independent	US	23/03/2020	3
Devon Energy Corp	Independent	US	17/12/2019	3
SaudiAramco	INOC	Saudi Arabia	27/03/2020	2
Lukoil	Independent	Russia	20/09/2019	2
Pioneer Natural Resources	Independent	US	05/03/2020	2
Diomandback Energy	Independent	US	09/01/2020	2
Marathon	Independent	US	11/09/2019	2
Ovintiv	Independent	US	25/03/2020	2
EOG	Independent	US	24/07/2019	2
Cabot Oil and Gas Corp	Independent	US	11/09/2019	2
Reliance Industries	Independent	India	06/03/2020	1

Source data: TPI (2021)

The TPI assessments take into account emissions reductions, board oversight and management of climate-related risks.²⁴ However, recent initiatives to define robust transition plans, such as those of the CBI and TCFD²⁵ as well as some of our initial observations on the 'trilemma' suggest that they may not provide a full enough picture for analysts to diagnose the strategic investment plans of a fossil fuel producer. Moreover, the skewed relationship between the stated long-term production pledges and short-term production plans further highlights the importance of new metrics in order to properly scrutinize the alignment of these companies.

²³ Transition Pathway Initiative, *Methodology*, <https://www.transitionpathwayinitiative.org/methodology>

²⁴ Transition Pathway Initiative, *Management Quality and Carbon Performance of Energy Companies: November 2021 Update*

²⁵ Climate Bonds Initiative, *Transition finance for transforming companies Avoiding greenwashing when financing company decarbonization*, 10th September 2021, <https://www.climatebonds.net/transition-finance-transforming-companies>

We therefore widened the search to encompass other metrics used by business analysts, including primary energy produced, capital investment, the establishment of new ventures, revenue split and turnover. Although less openly reported, results that we could find for a number of these alternative metrics raise the question as to how to measure whether the scale and pace of change is sufficient to demonstrate a credible commitment to transition, in this case with a focus on renewable energy production:

- A multi-criteria assessment of ‘renewable leaders and laggards’ among major producers showed a wide disparity of ambition and **commitment to renewable energy investment** and the deployment of capabilities, with Shell and Total leading and ExxonMobil and Chevron lagging.²⁶
- A global forecast by IRENA suggests that on current trends oil majors’ **annual capital expenditure (CapEx) in renewables** as % of their total investment will only reach between 4-11% or 28 billion dollars by 2030.²⁷ Moreover, if we compare the most optimistic scenario with the Rystad global production forecast data referred to earlier, this investment only amounts to 1.3% by 2030.
- A comparison of **primary energy production** in 2020 and planned for 2026 for a leading proponent of renewable energy, Equinor from Norway (formerly Statoil), shows just how far there is still to go (see Figure 5).²⁸

More advanced alignment metrics could help the financial sector to better assess credibility, since they track a pathway towards a climate goal, but this then depends on how much information is available in the scenario’s technology pathway for the sector. In the case of primary energy produced, measurement could, for example, be made relative to the company’s legacy business.

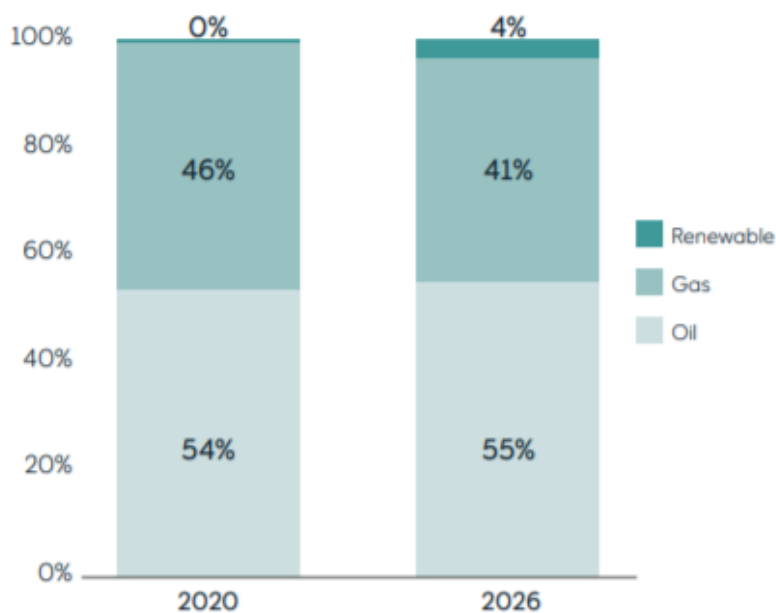


Figure 8. Share of Equinor’s primary energy production from oil, gas and renewables (% using partial substitution method). Source: Equinor (2020)

²⁶ Pickl, M., The renewables energy strategies of oil majors – from oil to energy? Energy strategy reviews, 26 (2019)

²⁷ IRENA, *Planned Energy Scenario* taken from the *Global renewables outlook*, <https://www.irena.org/publications/2020/Apr/Global-Renewables-Outlook-2020>

²⁸ Extract from Lobbywatch, *The Nordic Model: How Equinor is obscuring its fossil expansion* <https://medium.com/lobbywatch/the-nordic-model-how-equinor-is-obscuring-its-fossil-expansion-254fcc2b756d>

Investors and financier's dilemma: how to measure & track whether meaningful transition is taking place?

Looking at the dilemmas from the point of view of banks and institutional investors, our research points to the need for smarter metrics to track and understand the transition. It is not enough to just refer to net zero commitments and measure alignment with the anticipated decline of fossil fuel production. What is also needed are actionable metrics that allow for the tracking of efforts to make credible rates of new investment and to build shareholder value off the back of the clean energy transition – whether that's the upstream potential to exploit clean energy sources or the downstream potential to retail energy.

This points to the need for metrics that track not just long-range targets but also short to medium term changes in the ownership of legacy assets and, fundamentally, how producers make their money at activity level. A financiers' perspective is needed on the future viability and growth potential of each company. But no one metric can do this. So, what could this look like in practice? Our preliminary thinking is that a number of approaches could be combined in order to track both exit strategies and transition pathways.

- **Compatible portfolio finance (measuring exit pathway):** The transition risk associated with oil and gas assets is likely to increase over time. Metrics are therefore needed that track a managed exit first from oil and then from gas production. Developing further the Katowice Banks and 2DII's 'portfolio finance trend' metric,²⁹ this could take a number of forms:
 - A simple distinction between **compatible and non-compatible exploitation**, as well as associated capex and financing, could be a starting point.
 - Measurement of **exposure to oil and gas production** based on comparison of volume trajectories with scenarios depicting achievement of a 1.5°C/net zero climate goal.
 - The **tracking of the sale, phase down or closure of legacy production assets**, in order to detect whether production is simply being offloaded in order to meet targets.
 - Measurement of **new corporate lending and debt security issuance** (bonds or hybrid bonds are used extensively) earmarked to finance non-compatible production.

The benefit is that this data is already to a great extent published and/or can be forecast.

- **Climate solutions revenue base contribution (measuring transition pathway):** If major oil and gas producers are on track to drive an energy transition this will become apparent in a change in their capex followed by their revenue base i.e. what drives their balance sheet. In order to track this shift, transparency is needed on:
 - The split of **capex assignment** to fossil fuel production and 'climate solutions',
 - the **revenue split** between fossil fuel production and 'climate solutions,' i.e. activities that are compatible with a 1.5°C scenario and those that will not.

This would have the benefit of:

- Enabling all compatible activities to contribute to the greenness of a company – whether they be R&D, engineering services, product manufacturing or energy generation.
- Maintaining a focus on value creation from so-called 'climate solutions' - something that is vital to reassure shareholders and financiers.

Compatibility could be measured based on a suitably diversified taxonomy of green economic activities.³⁰ This would not, however, allow for the tracking of activities that are neither high carbon nor that could be considered 'climate solutions'.

²⁹ Katowice Banks and 2DII, *Credit portfolio alignment*, September 2020

³⁰ The most granular taxonomies are those of the Climate Bonds Initiative and the European Commission.

- **Primary energy balance sheet (measuring transition pathway):** The energy transition will in the end require substitution of fossil fuel inputs to the economy with clean, renewable energy inputs. This substitution effect across a company's energy production portfolio could be measured using a total primary energy metric.

There are a number of challenges to doing this. A primary energy balance sheet approach becomes more complicated if the full range of diversification opportunities available are to be taken into account. This is because they take place at different points along the value chain or achieve CO₂ reductions in different ways, so new calculation and accounting rules would be needed. For example, how to account for climate solutions as diverse as service station electric vehicle charge points, the manufacturing of solar photovoltaic modules and the retailing of energy efficient products.

The fundamental question is then, when does an oil and gas producer cease to become so and start to become something else, and how are sectoral targets then to be allocated across business divisions?