The Impair State

The Paris Agreement starts to impact oil & gas accounting

Analyst Note

June, 2020

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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1 Key Findings

- **Total, Repsol, Shell and BP have made significant downwards revisions in their impairment price assumptions in the last year, driven at least in part by the energy transition**. While this may partly be making a virtue of necessity given that previous impairment assumptions were rather higher than prevailing prices, these companies now have outlooks that are significantly more conservative than their European peers. Both Total and Repsol assume oil prices that refer to the IEA's Sustainable Development Scenario (SDS) and decline in the long term; Shell and BP assume flat outlooks of a comparable level.

- **We still believe that the prices used at these firms are higher than a level that would truly give conviction of alignment with the Paris goals**; by our estimate, SDS levels of oil demand can be satisfied by projects that generate a 15% internal rate of return (IRR) at an oil price in the late $40s.

- **BP's auditors, Deloitte, explicitly noted in 2019 that its previous impairment prices were not consistent with the Paris goals, based on a comparison to third party scenarios**. This was despite BP believing its strategy is "consistent with the goals of the Paris Agreement". BP subsequently amended its assumptions in Q2 2020. Shell's auditors also checked its assumptions for reasonableness both in the context of energy transition and the company's decarbonisation commitments.

- **Equinor's long-term oil price assumption of $80/bbl in real terms is the highest of the companies reviewed here**. This is despite sharing an auditor (Ernst & Young) with Shell, which assumes $60/bbl. Eni maintains an unchanged long term price assumption of $70/bbl. Assumptions at both of these companies must be under pressure.

- **European companies are far ahead of US peers** – none of ExxonMobil, Chevron or ConocoPhillips disclose impairment price assumptions at all, never mind attempting to align with international climate commitments. None of the auditors of these US-based firms make note in their reports of having considered the energy transition for the purpose of assessing price assumptions (PWC for Exxon and Chevron, Ernst & Young for ConocoPhillips).

- **We believe the principle that the energy transition is being incorporated in financial statements and audit processes is a positive development**. We hope to see more widespread and deeper, more consistent integration of climate constraints throughout company business practices in the coming years.

2 Executive Summary

The oil industry's financial statements reflect climate change conflict

Oil and gas companies have never been under more pressure on climate change and the low carbon energy transition. Strategic responses have included setting emissions "ambitions", dipping into low carbon energy sources, and lots of sustainability reports. But at the same time, their core fossil fuel business activities frequently seem to have barely noticed. Companies still sanction projects that don't make economic sense in a low carbon world[1], pay their directors based on increasing fossil fuel production volumes[2], and have financial statements underpinned by prices that assume sustained high fossil fuel demand.

In this note we focus on the last of these topics. High price assumptions may mask the financial risk to marginal projects and indicate a lack of conservativeness or even overinflated financial statements. With investors looking to fossil fuel companies to show their resilience under transition conditions, much of industry practice does not reassure.

Some European oil companies start to account for the transition in financial statements

In the most recent annual reporting season, a handful of European oil and gas producers have disclosed new downward adjustments to their internal impairment price assumptions. While the previous assumptions were significantly higher than oil prices that have prevailed in previous years, and hence perhaps due a revision in any case, these adjustments are explained as reflecting the longer term weaker future fossil fuel conditions implied by the Paris Agreement.

Total, Repsol, Shell and BP (following a revision in Q2 2020) now base their financial statements on price assumptions that are more conservative than their peers, although we believe that the assumptions are probably still above a level that would give real conviction of resilience in the energy transition.

Conversely Eni and Equinor's are significantly higher, with Equinor's long term price assumption of $80/barrel the highest reviewed here. With both companies having sought to position themselves as progressive on energy transition issues, the clock must be ticking on how long they can stay at that level.

US counterparts continue to be laggards, with ExxonMobil, Chevron and ConocoPhillips not even disclosing price assumptions, never mind trying to align with international climate commitments.

The energy transition also appears to be increasingly on the minds of auditors, with audit opinions on BP and Shell's accounts including consideration of price assumptions in the context of the wider transition. Indeed, BP's assumptions were noted to be "not consistent with the world being on a path to achieving the Paris 2°C Goal" – the assumptions were then revised sharply downwards a few months subsequently. Shell's auditors further assess reasonableness in the light of the company's own decarbonisation commitments.

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[1] *Carbon Tracker, "Breaking the Habit – Why none of the large oil companies are "Paris-aligned", and what they need to do to get there", September 2019*
Available at https://carbontracker.org/reports/breaking-the-habit/

[2] *Carbon Tracker, "Fanning the Flames: How executives continue to be rewarded to produce more oil and gas at odds with the energy transition", March 2020*
Available at https://carbontracker.org/reports/fanning-the-flames/

Walk the talk

To be successful in satisfying multiple stakeholders in the transition, fossil fuel producers will need to internalise the logic of a finite carbon budget and apply it throughout their business strategy. The climate debate is rapidly moving from an appreciation of the problem to practical implementation.

The fact that some of the more progressive European companies are adjusting their internal price assumptions to incorporate the goals of the Paris Agreement and that auditors are considering them in the context of the energy transition is a positive step. Furthermore, it is proof that companies can draw a through-line from scenario analysis to the financial statements – a key objective of the TCFD process. We hope to see others pick up the baton.

TABLE 1 – IMPAIRMENT PRICE PRACTICE AT SELECTED EUROPEAN OIL & GAS PRODUCERS

COMPANY	LONG TERM BRENT OIL PRICE ASSUMPTION (2019 $/BBL)	CLIMATE-RELATED OIL PRICE REFERENCE POINT	AUDITOR	CLIMATE-RELATED REASONBLENESS/CONSISTENCY TESTING BY AUDITOR IN 2019 ANNUAL REPORT
BP	2019: $76 (2025+) Q2 2020: Avg c.$54 (2021-2050)	-	Deloitte	**Impact of lower prices/demand** – "these 'Paris 2°C Goal' scenarios indicate that BP's price assumptions for impairment purposes are not consistent with the world being on a path to achieving the Paris 2°C goals"
Shell	$60 (2021+)	Not disclosed	Ernst & Young	**Company's own commitments** – "we assessed whether Shell's energy transition assumptions… were reasonable in the light of the commitments that Shell have made with respect to decarbonisation in accordance with the Paris Agreement" **Impact of lower prices/demand** – "we… evaluated whether Shell's long-term price assumptions incorporated the potential impact of climate change and the energy transition"
Repsol	$65-66 (2021-30) falling to $47 (2050)	IEA SDS	PWC	-
Total	$71 (2025-30) falling to $51 (2050)	IEA SDS (long term trajectory)	Ernst & Young	-
Eni	$70 (2022+)	-	PWC	-
Equinor	$80 (2030+)	-	Ernst & Young	-

Source: company reports, CTI analysis. Note: converted to real 2019 dollars at an assumed 2% inflation rate. BP's updated assumptions (announced in June 2020) are converted from 2020 dollars.

3 Impairment price assumptions in the transition

Introduction

When Repsol[3] announced its plan to cut scope 3 emissions to net zero by 2050 at the end of 2019, we noted[4] wider integration of this strategic shift into its remuneration policy and internal price assumptions. Now that annual reporting season has revealed more detail of Repsol's approach plus the influence of the energy transition also affecting the financial statements of Total, Shell and BP, we take a look at the emerging practice of factoring a decarbonising world into accounting practice.

While oil and gas companies might "support the aims" of the Paris Agreement, their business models usually seem to be predicated on its failure. This might be seen through the sanctioning of projects that appear uneconomic in even a generously defined low-carbon world, as our research[5] shows all of the majors have done in recent years. It may also be seen through the high long term oil prices that underpin balance sheets, as discussed by Natasha Landell-Mills at Sarasin & Partners[6]. The two examples are symptoms of the same underlying issue – an assumption of steady or rising fossil fuel demand feeding through to optimistic internal price assumptions.

This is then liable to cause a host of knock-on issues in the energy transition, including companies sanctioning projects that might ultimately be stranded, and overstating their financial strength and profitability leading to the misallocation of capital.

In this note we review practice regarding impairment price assumptions at a handful of European oil and gas producers.

Whatever the prices assumed at these companies, we note that they are far ahead of US peers on transparency to begin with – none of Exxon, Chevron or ConocoPhillips disclose their impairment prices at all, never mind attempting to align with international climate commitments.

The importance of being earnest – for the financial system…

Price assumptions have far-reaching impacts on financial statements. Amongst other things, they affect the balance sheet value of a large proportion of a given oil and gas company's fixed assets, determining whether book value is fair or not. While such assets are likely to be carried at historical cost less accumulated depreciation, if there are indications of impairment (i.e. that the asset's fair market value has fallen below its book value), then that carrying value may be written down to a new value based on its discounted future cashflows calculated using management's price assumptions. The exact mechanism for this process varies by accounting regime.

In affecting fixed asset values, price assumptions therefore affect the depreciation charge on the income statement. They also affect the value of deferred tax assets, which are related to future

[3] https://www.repsol.com/en/press-room/press-releases/2019/repsol-will-be-a-net-zero-emissions-company-by-2050.cshtml
[4] *Carbon Tracker, "Repsol's net zero ambition: joining the dots", December 2019*
Available at https://carbontracker.org/repsols-net-zero-ambition-joining-the-dots/
[5] *Carbon Tracker, "Breaking the Habit – Why none of the large oil companies are "Paris-aligned", and what they need to do to get there", September 2019*
Available at https://carbontracker.org/reports/breaking-the-habit/
[6] *Sarasin & Partners, "Are oil and gas companies overstating their position?", August 2018*
Available at https://sarasinandpartners.com/think/are-oil-and-gas-companies-overstating-their-position/

profits. Impairment charges taken when assumptions are revised down are recognised on the income statement as a loss, having the effect of reducing earnings. This will then also impact distributable reserves in equity, potentially impinging on ability to pay dividends.

Because price assumptions affect the balance sheet values of assets and equity, they also affect gearing ratios such as debt/equity and debt/total capital. Large write downs may then impact perceptions of financial health, perhaps causing ratings agencies to make downgrades and reducing a company's ability to raise capital – a key concern for fossil fuel producers. It may even cause issues with existing debt if covenants are breached. On the equity side, valuation metrics such as price/earnings and price/book value will be distorted.

There is also a knock-on impact to the remuneration of executives. Metrics such as return on capital employed, return on invested capital and earnings are typical in the annual bonus structures of executives, and may also be included in long term incentive plans[7]. Executives therefore have an incentive to take an optimistic view in the short term at least, assuming high prices and putting off impairments as long as possible, perhaps resulting in them enjoying payments that are not justified by the company's financial position when factoring in a more sober view of the future.

Accordingly, it is crucial that these elements are not overstated.

…. and particularly in the energy transition

A company that adopted a Paris-aligned price deck for its impairment calculations would indicate that its management were thinking more thoroughly about the changing energy system. Furthermore, it would give greater confidence to investors that its financial statements were a representative picture of its health in a way that might be more durable in the energy transition than more optimistic peers, whose balance sheets may be subject to negative adjustments later on.

Price assumptions have a number of important roles within an oil and gas producer, and companies may use different prices for different purposes, where such differences are legally permissible. It may use one price scenario for impairments, another for reserve calculations, and another (or more likely a range) for its investment decisions. Under international accounting standard IAS 36 (Impairment of Assets)[8], impairment assumptions must be based on management's "best estimate" of economic conditions over the asset's remaining useful life. When making a final investment decision for a project, a company might choose to be more conservative than this if it thinks that there is significant downside risk, for example.

While impairment and sanction prices might be different therefore, they are likely to be linked. Indeed, in some jurisdictions regulatory guidance indicates that the prices used in impairment testing, while at the discretion of management, must not be inconsistent with similar assumptions used in the management of the business. This has important implications from a climate point of view - theoretically, a company that adopted a Paris-aligned price deck for its sanction activity and invested accordingly wouldn't approve any projects that took the world past Paris limits. This may both demonstrate "Paris-alignment" to stakeholders, and mitigate the risk of destroying value by

[7] *For more detail see Carbon Tracker, "Fanning the Flames: How executives continue to be rewarded to produce more oil and gas at odds with the energy transition", March 2020*
Available at https://carbontracker.org/reports/fanning-the-flames/
[8] *Available at* https://www.ifrs.org/issued-standards/list-of-standards/ias-36-impairment-of-assets/

investing in stranded assets. As Shell notes, "Our ability to deliver competitive returns and pursue commercial opportunities depends in part on the accuracy of our price assumptions"[9].

A question of growing prominence is whether companies can claim they are building resilience to a Paris-type scenario, but still test their assets for impairment based on prices that might imply that Paris goals are not achieved. In theory, one might imagine a company deciding to only sanction low-cost projects in line with a Paris outcome, even if it believed that the agreement itself will not be achieved. This would then presumably be reflected in statements relating to its own strategy as being consistent with Paris, but impairment assumptions that are not consistent with Paris (as appeared to be the case with BP in 2019, see later). We would suspect that the company's own commitment to the transition might not be whole-hearted in such a case, given that it would continue to see investments that require BAU pricing as attractive.

Further, depending on the facts of each particular case, such a view may raise questions with auditors as to consistency between financial statements and broader representations. For example, consider these audit standards and guidance that might give auditors pause:

- International Standard on Auditing ISA 720[10] requires auditors to consider consistency between the financial statements and "other information, whether financial or non-financial information… included in an entity's annual report"
- US Staff Accounting Bulletin No. 114[11] cautions that the judgments and assumptions made for purposes of applying the relevant standard on property, plant and equipment[12] "must be consistent with other financial statement calculations and disclosures and disclosures in MD&A". It further expects that such forecasts "be consistent with other forward-looking information prepared by the company, such as that used for internal budgets, incentive compensation plans, discussions with lenders or third parties, and/or reporting to management or the board of directors."

[9] Royal Dutch Shell, Annual Report and Form 20-F 2019 (p27)
[10] International Standard on Auditing 720 (revised): The auditor's responsibilities relating to other information Available at https://www.ifac.org/system/files/publications/files/ISA-720-(Revised).pdf
[11] Available at https://www.federalregister.gov/documents/2011/03/28/2011-5584/staff-accounting-bulletin-no-114
[12] FASB ASC Topic 360

4 Company practice

Surviving the transition – about the investments, as well as the emissions

Heightened concern around climate change and the energy transition has been one of the biggest themes in oil and gas industry discussions in recent times. Stakeholder pressure, changing societal expectations, and an increasing recognition of future demand threats have led companies to set targets relating to the emissions of their operations and, more recently even to the emissions resulting from the use of their products – a move which will imply significant changes to business models. This attempt to be seen as responsive to concerns is being driven predominantly by European companies; US companies have so far shown much less interest, with Exxon CEO Darren Woods calling such targets a "beauty competition"[13].

We have frequently noted contradictions in the way companies have approached the transition, for example on one hand having emissions targets but on the other paying bonuses for increased volumes of fossil fuels[14], or by framing emissions targets based on average intensity[15] thereby allowing increased absolute levels of production/emissions. Successfully satisfying stakeholders in the transition therefore requires internalising the logic of a finite carbon budget and following that through into all parts of strategy including in the internal assumptions that drive financial decision-making.

Some European companies starting to walk the talk?

In Repsol's December announcement[16] alongside it's Q4 results, it stated that it would assume "a new oil and gas price scenario consistent with the Paris Agreement's climate goals" – an industry first as far as we were aware. Although it did not disclose its new assumptions at the time, in the process of making this adjustment it took a €4.8bn write down of which the majority (€3.6bn) related to North American gas assets. However, it quickly became clear that all its competitors were also making similarly-themed write downs, for example at Chevron ($10.4bn), BP ($1.9bn), Shell ($1.7bn) and Equinor ($2.6bn), suggesting that this might be at least partly due to an industry-wide lowering of expectations rather than specifically due to Repsol's particular shift on climate.

Annual reporting has now given disclosure on Repsol's new price assumptions, but also that Total has done something similar. Both companies note their new price decks as being "in line" with the IEA's Sustainable Development Scenario (SDS, published in the November 2019 World Energy Outlook) although only in terms of the long-term trajectory in Total's case. Repsol further disclosed a carbon price assumption relating to the EU ETS in its impairment testing, rising to $70/t (nominal) in 2040.

Furthermore, Shell also made a significant downward revision resulting in a new price assumption of a comparable level to Total and Repsol. While Shell does not link specifically to a particular

[13] https://www.energyvoice.com/oilandgas/226832/us-oil-majors-are-snubbing-climate-conscious-rivals-in-europe/

[14] *Carbon Tracker, "You get what you pay for – O&G executive incentives destroy value, ignore climate", May 2020 Available at* https://carbontracker.org/you-get-what-you-pay-for/

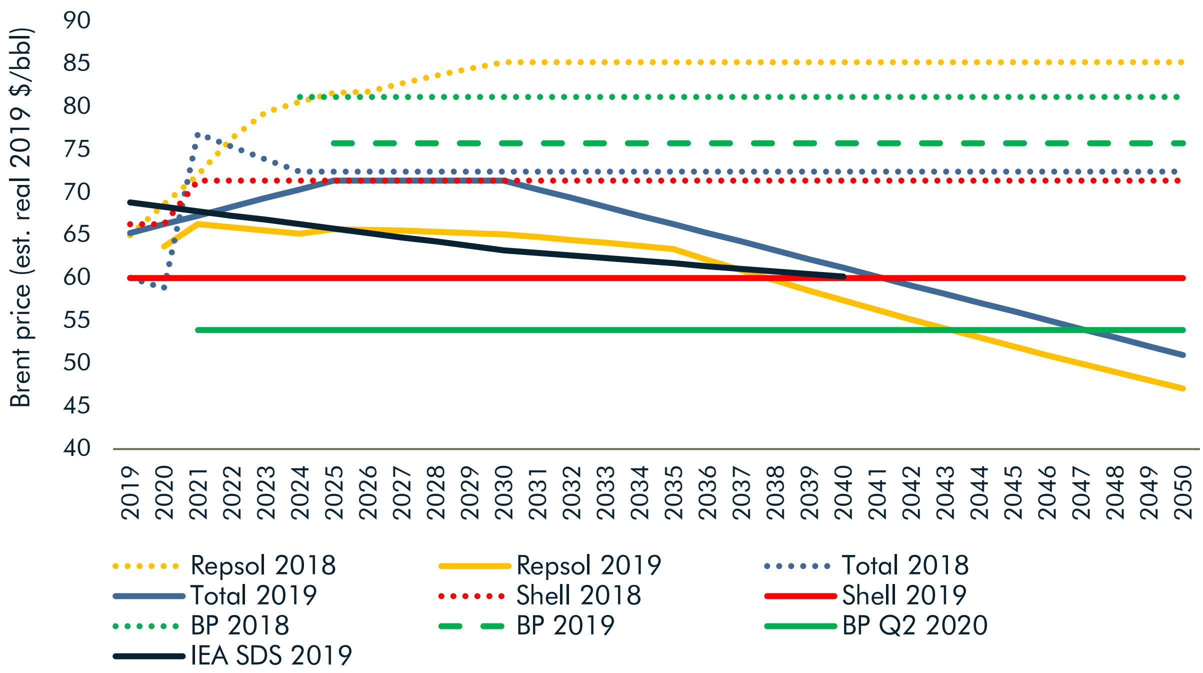
[15] *Carbon Tracker, "Scope for Improvement", January 2019 Available at* https://carbontracker.org/reports/scope-for-improvement/

[16] *Repsol, "Repsol will be a net zero emissions company by 2050", December 2019 Available at* https://www.repsol.com/en/press-room/press-releases/2019/repsol-will-be-a-net-zero-emissions-company-by-2050.cshtml

scenario or give the reasons for its change, its auditors noted the consideration of the energy transition and the company's own decarbonisation commitments in assessing reasonableness. BP had only shifted its long-term assumption down from c.$81/barrel to c.$76/barrel in its annual report (disclosed as $75 and $70 in 2015 dollars), but just this week, outside the annual reporting cycle, it has shifted to a flat price in the mid-$50s .

All entail significant reductions from the previous year's assumptions, as illustrated in below chart.

Figure 1 – Impairment prices for Repsol, Total, Shell and BP (2018 and 2019), IEA Sustainable development scenario price assumptions



Source: company reports, IEA, CTI analysis

Note: converted to real 2019 dollars at an assumed 2% inflation rate.

For Henry Hub gas, Repsol's assumption has shifted from a long term assumption of $4.7/mmBtu to $3.6/mmBtu (converted to real 2019 dollars). Shell shaved $0.5 off its gas price assumption to put it at $3, BP's long term assumption is revised from $4.3 to $2.8, and Total's comparable assumption is now $2.7/mmBtu (having not been disclosed last year), noting that "the abundant global supply and growth of liquefied natural gas would, however, limit the potential for higher gas prices". Both of these are rather lower than the IEA's SDS assumption of $3.5/mmBtu.

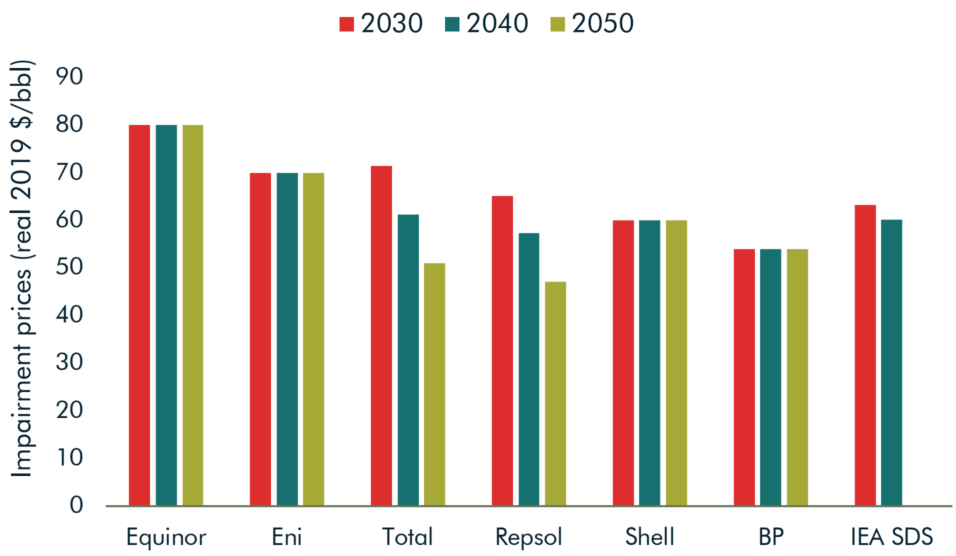
The above prices assumptions were probably due a significant revision in any case – it would be getting increasingly difficult to justify long term prices of $70-80/bbl given the prices prevailing since 2015 (averaging $61) particularly Repsol's long term c.$85. However, other European peers do still maintain long term forecasts of that order.

No standard practice (yet) among European producers

The approach of incorporating climate constraints into impairment prices is not shared by all of the other European producers that are jostling for position in terms of emissions targets, with Eni and Equinor retaining assumptions significantly above any level that might be considered "Paris-aligned".

Eni's assumption is unchanged year-on-year at $70/bbl, with management reviewing the recoverability of asset book values under the IEA SDS prices but not adopting them formally. Equinor's assumption drops fractionally from $82 to a still outlying $80.

FIGURE 2 – BRENT OIL IMPAIRMENT PRICES AT EUROPEAN OIL AND GAS PRODUCERS, IEA SDS PRICE ASSUMPTIONS



Source: company reports, IEA, CTI analysis

Following the transition-related adjustments in this year's reporting, it can be observed that Repsol, Total, Shell and BP now have impairment assumptions that are more conservative than their European peers.

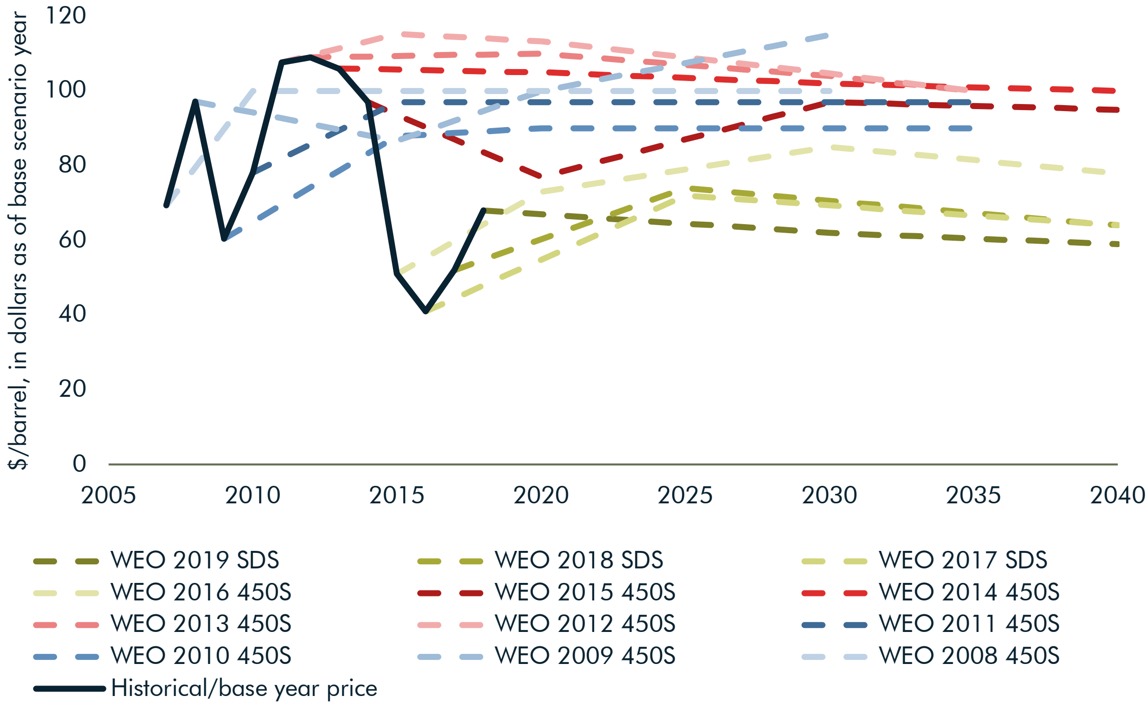
Echoing their influence by the IEA SDS, it can be noted that Total and Repsol feature oil prices that decline over the long term, compared to the other companies' assumptions that prices will remain flat. The former approach may be thought a more likely outcome in world of declining demand.

The price is right?

In practice, of course, establishing what a "Paris-aligned" price deck might be is a very grey area.

We have long argued that the IEA SDS price deck has tended to look on the high side as an approximation of a world where oil demand is falling by around 1 million barrels per day every year. In particular, it has tended to feature forecast prices similar to or above whatever the prevailing price is at annual publication, despite the SDS portraying an environment of falling rather than the rising oil demand experienced to date.

FIGURE 3 – OIL PRICE DECKS IN HISTORICAL IEA 450 AND SUSTAINABLE DEVELOPMENT SCENARIOS (2008-2019)



Source: IEA, CTI analysis

We will have to wait and see whether the companies that have picked the SDS as a reference point will chose to update it annually; as the SDS price deck is strongly influenced by the prevailing spot price, this may introduce a certain amount of volatility.

Our own analysis suggests that SDS levels of demand can be satisfied by projects that return a 15% IRR in the late $40s[17], whereas the latest iteration of the SDS still assumes prices of over $60/barrel through to 2040. As below, BP also notes that this is on the high side for estimates of oil prices in a Paris-aligned world. While not linking specifically to a Paris-aligned scenario, Shell has noted that it considers a range of between $40 and $100 per barrel of oil to 2030 to be likely"[18]. It is worth noting that the SDS price deck has itself come down a long way in recent years.

This is not to start a bun fight about whose price scenario is the most accurate. A level of subjectivity will always go into forecasts of future oil prices, even if demand levels are assumed to be known. However, stakeholders will need to make themselves comfortable with the price assumptions, which will come down to a test of reasonableness. In particular, stakeholders may wish to ask themselves:

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[17] *See Carbon Tracker, "Breaking the Habit – Why none of the large oil companies are "Paris-aligned", and what they need to do to get there", September 2019*
Available at https://carbontracker.org/reports/breaking-the-habit/
[18] *Royal Dutch Shell, "Energy Transition Report", April 2018*
Available at https://www.shell.com/energy-and-innovation/the-energy-future/shell-energy-transition-report/_jcr_content/par/toptasks.stream/1524757699226/3f2ad7f01e2181c302cdc453c5642c77acb48ca3/web-shell-energy-transition-report.pdf

a) Bearing in mind historical oil prices in an environment of rising oil demand, is the level of price assumed likely to be consistent with a Paris-aligned scenario of persistently falling fossil fuel demand (and considering competing resources)?
b) Is the oil price more likely to be flat or fall in real terms if demand is falling?

Auditors beginning to ask the question, both in terms of reasonableness of assumption…

Equinor, Shell and Total are audited by Ernst & Young, Repsol and Eni by PWC, and BP by Deloitte. Auditors therefore seem content to allow a wide spectrum of practice, with companies linking to future demand/price outcomes depending on their own views and strategic imperatives.

As noted, price expectations are derived from company management's best estimates; however, auditors will need to hold management to account and satisfy themselves as to reasonableness and consistency. Management may cling steadfastly to business as usual forecasts of ever-increasing fossil fuel use and supportive prices, but such divergence will get increasingly tough to maintain. Within this context, it is interesting to note that auditors have begun to expressly take the energy transition into account when giving their opinion.

In the clearest example, BP's auditors tested its assumptions against the Paris goals. To do so, they compared its price assumptions to a range of third party scenarios that they interpret as "Paris 2°C goal" scenarios, acknowledging that its impairment prices are higher than each for oil and close to the highest one for gas. They then explicitly noted that this indicates that "BP's price assumptions for impairment purposes are not consistent with the world being on a path to achieving the Paris 2°C Goal". We think that Deloitte having considered this question in some detail in its report represents a good contribution to the development of this emerging practice.

Again, US counterparts lag European peers – none of the auditors of ExxonMobil, Chevron (both PWC) or ConocoPhillips (Ernst & Young) make note in their reports of having considered the energy transition or Paris Agreement in their assessments of price assumptions.

… and consistency of assumptions with broader company representations

The finding of BP's auditors highlighted a tension – while using price assumptions that are not aligned with international climate commitments in its accounts, BP believed its own strategy to be "consistent with the goals of the Paris Agreement". As above, auditors are generally required to ensure that financial statements are consistent with other reported information. In this case, Deloitte is satisfied that "the information given in the strategic report and the directors' report… is consistent with the financial statements". Nonetheless, BP adjusted its prices downwards a few months later outside the annual reporting cycle.

Shell's auditors also both examined its assumptions for the "potential impact of climate change and the energy transition" and "assessed whether Shell's energy transition assumptions used in setting oil and gas commodity price assumptions and refining margin assumptions were reasonable in the light of the commitments that Shell have made with respect to decarbonisation in accordance with the Paris Agreement." They further note that for forecasts, "risk is elevated compared to 2018 due to increased focus on the energy transition".

Despite sharing an audit firm with Shell, we could not find equivalent comments expressly considering price assumptions in light of the energy transition in the reports of Equinor and Total. While, like Shell, Total's auditors make reference to comparison of price assumptions with IEA scenarios, it is not stated whether this includes a low carbon scenario.

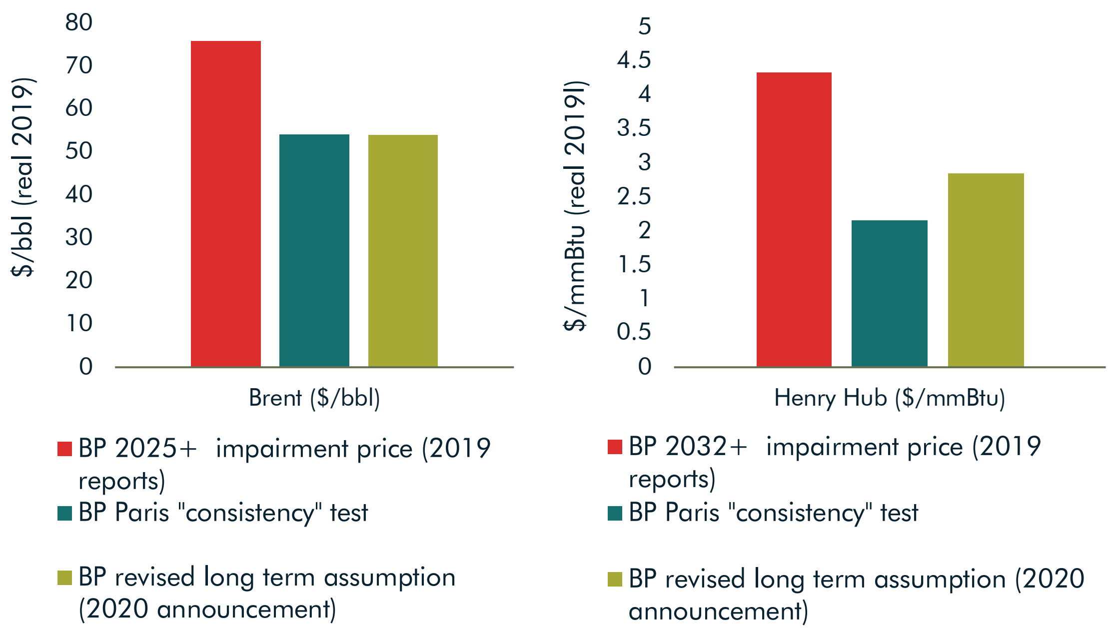
The direction of travel

We expect further movement in accounting practice in the coming years, given the arms race in emissions announcements. An indication of potential impact is given by sensitivity analysis performed by some of the companies.

As previously discussed[19], BP performed Paris "consistency" test in its 2019 annual report, which assumed a flat price of $50 in 2015 dollars, equivalent to about $55 in today's money and about $20 lower than the impairment price it was using at the time. Its long term Henry Hub gas price impairment assumption (applicable from 2032+) was double the level in its Paris test.

We wondered if this would augur a revision in impairment price down to levels more comparable with its Paris test, and indeed revisions were announced a few months later; oil prices were lowered to the same levels and gas prices cut by c.35%, although still 30% higher than its climate scenario analysis.

Figure 4 – BP impairment prices and Paris "consistency" test prices.



Source: BP, CTI analysis

In its accounts, BP did not give a sensitivity analysis of book value using the prices under its Paris consistency test. However, it did disclose that a price case that starts 15% lower and trends towards 25% lower than its "best estimate" would reduce the book value of oil and gas properties by $4-5bn, or around 3-4%. When the new price adjustment was ultimately announced, write downs were guided to be over 3 times this estimate, being in the range of $13-17.5bn post-tax. This difference is presumably explained by the new prices being lower than those in the sensitivity analysis for both oil (in the near term although comparable in the long term) and gas, and the inclusion of a $100/t CO_2 price.

[19] *See Carbon Tracker, "Testing testing: BP's Paris goals consistency analysis raises more questions", April 2020 Available at* https://carbontracker.org/testing-testing-bps-paris-goals-consistency-analysis-raises-more-questions/

With their peers now having made adjustments, price revisions at Eni and Equinor may not be too far down the line. Eni's analysis suggested that adopting SDS assumptions would cut the fair value of its oil and gas assets by 7%, or 2% if CO_2 costs are passed onto consumers or deductible from pre-tax income. Equinor merely notes a "significant value reduction" under SDS prices, although we assume that this is talking about net present value of future cash flows rather than impairment of book value.

Equity market impacts may be much greater than book value impacts

It is worth observing here that these changes in balance sheet values are not reflective of potential impacts on equity values in the equity transition, even if actual prices did turn out to reflect those assumptions. Balance sheet carrying values are based on historical cost less depreciation, whereas equity values will be based on market expectations of future cashflows. The two are likely to differ very significantly, particularly for the undeveloped projects which will be at the greatest risk of stranding – they may have incurred minimal expenditure (hence have very limited balance sheet value) but represent a material part of equity value particularly for more exploration-focused companies.

Indeed, a change in oil price might have significant impact on a company's equity market value, but no impact at all on its accounting book value. This is perhaps particularly under US GAAP, where the first step in the impairment test is to determine if an asset's book value is below the value of its *undiscounted* future cashflows – if it isn't, the inquiry stops.

Accordingly, it should not be assumed that the impact of a shift from rising oil demand to falling demand would be in the low single figure %s if companies have not prepared accordingly, particularly as prices may fall significantly below those envisioned in the SDS.

From talk to action

Fossil fuel producers are feeling the heat from a wide range of stakeholders when it comes to climate change – among the most prominent are investors, policymakers, civil society organisations and consumers. While stakeholder requirements vary, broadly speaking, satisfying them all will require demonstrating a business model that both delivers lower absolute emissions in line with the goals of the Paris Agreement and does so while also delivering on the financial imperatives of minimising risk and maximising return.

To be successful in satisfying these needs will require that fossil fuel producers internalise the logic of a finite carbon budget and apply it consistently throughout their business strategy. This includes reflecting more challenging future demand for oil and gas, and hence weaker prices, in processes including those relating to investment decisions and underlying financial statements.

We believe that the climate debate is rapidly moving from an appreciation of the problem to the practical implementation of measures required to deal with it. Accordingly, the fact that some of the more progressive European companies are adjusting their internal price assumptions to incorporate the goals of the Paris Agreement and that auditors are considering them in the context of the energy transition is a positive step. Furthermore, it is proof that companies can draw a through-line from scenario analysis to the financial statements – a key objective of the TCFD process.

We would like to see others pick up the baton, and hope to see more widespread and deeper, more consistent integration of climate constraints throughout company business practices in the coming years.

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