



# LIFTING THE VEIL

Investor Expectations for Paris-aligned  
Financial Reporting at Oil and Gas Companies

May 2021



## About Ceres

Ceres is a nonprofit organization working with the most influential capital market leaders to solve the world's greatest sustainability challenges. Through our powerful networks and global collaborations of investors, companies and nonprofits, we drive action and inspire equitable market-based and policy solutions throughout the economy to build a just and sustainable future. For more information, visit [ceres.org](https://ceres.org) and follow [@CeresNews](https://twitter.com/CeresNews).

## About Climate Action 100+

[Climate Action 100+](https://climateaction100.org) is an investor initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change. More than 570 investors, responsible for over \$54 trillion in assets under management, are engaging companies on improving climate change governance, cutting emissions and strengthening climate-related financial disclosures. The companies include 'systemically important emitters', accounting for two-thirds of annual global industrial emissions, alongside others with significant opportunity to drive the clean energy transition. Launched in December 2017, Climate Action 100+ is coordinated by five investor networks: Asia Investor Group on Climate Change (AIGCC); Ceres; Investor Group on Climate Change (IGCC); Institutional Investors Group on Climate Change (IIGCC) and Principles for Responsible Investment (PRI). These networks, along with five investor representatives from AustralianSuper, California Public Employees' Retirement System (CalPERS), GAM Investments, Ircantec and Sumitomo Mitsui Trust Asset Management, form the global Steering Committee for the initiative. For more information, visit: [ClimateAction100.org](https://ClimateAction100.org); and follow: [@ActOnClimate100](https://twitter.com/ActOnClimate100).

## About Ceres Accelerator for Sustainable Capital Markets

The Ceres Accelerator for Sustainable Capital Markets is a center within Ceres that aims to transform the practices and policies that govern capital markets in order to reduce the worst financial impacts of the climate crisis. It spurs action on climate change as a systemic financial risk—driving the large-scale behavior and systems change needed to achieve a net-zero emissions economy. For more information, visit [ceres.org/accelerator](https://ceres.org/accelerator).

## About the Author

### **Samantha Ross**

Founder, AssuranceMark, The Investors' Consortium for Assurance

Samantha Ross was one of the founding staff of the Public Company Accounting Oversight Board and helped build it from the ground up for its first 15 years. She contributed to building the world's largest and most respected audit oversight institution and achieving long-term positive, incremental change to make audits more transparent and relevant to investors. Prior to the PCAOB, she worked at the SEC, as special counsel to the chief accountant of the Division of Enforcement, to help implement the SEC's financial fraud priority as well as Enron-era reforms, including the Sarbanes Oxley Act of 2002. Samantha founded AssuranceMark to continue to serve investors' interest in high-quality, reliable reporting and assurance on material disclosures beyond the financial statements.

## Contributors

Ceres would like to thank the following people for contributing their valuable time and thoughtful feedback to this report. The views expressed in this paper are those of Ceres and the author and do not necessarily reflect those of the contributors.

### **Tim Brennan**

Principal, Responsible  
Investing Solutions

### **Tracey Cameron**

Senior Manager, Corporate  
Climate Engagement, Ceres

### **Barbara Davidson**

Senior Analyst, Carbon  
Tracker Initiative

### **Michelle Edkins**

Managing Director, BlackRock  
Investment Stewardship

### **Christina Coburn Herman**

Program Director for Climate &  
Environmental Justice, ICCR

### **Zach Kowaleski**

Assistant Professor of Accountancy,  
Mendoza College of Business 307,  
University of Notre Dame

### **Natasha Landell-Mills**

Partner, Head of Stewardship,  
Sarasin & Partners

### **Paul Lee**

Independent Consultant

### **Jon Lukomnik**

Managing Partner, SInclair Capital

### **Jeffrey Miller**

Associate Professor of  
Accountancy, Mendoza College of  
Business, University of Notre Dame

### **Lynn E. Paquin**

Deputy Controller, Investments,  
Office of California State Controller

### **David Pitt-Watson**

Visiting Fellow, Cambridge  
University, UK

### **Greg Rogers**

Founder, Eratosthenes

### **Ethan Rouen**

Assistant Professor of Business  
Administration, Harvard  
Business School

### **Rob Schuwerk**

Executive Director, Carbon Tracker  
North America

### **Anne Simpson**

Managing Investment Director  
(MID) of Board Governance and  
Sustainability, California Public  
Employees' Retirement  
System (CalPERS)

### **Eri Yamaguchi**

ESG Investment Officer, New York  
State Common Retirement Fund

### **Betty Yee**

California State Controller

We would like to express our deep appreciation for our many colleagues at Ceres who provided assistance with this project, including Mara Abbott, Jim Coburn, Maura Conron, Heather Green, Billy Gridley, Rebecca Hoffman, Morgan LaManna, Jackson Miller, Andrew Logan, Cynthia McHale, Isabel Munilla, Laetitia Pirson, Steven Rothstein, and Sara Sciammacco.

---

## Table of Contents

<b>Executive Summary</b>	<b>1</b>
<b>Introduction</b>	<b>3</b>
Expectation 1: Financial Statements	<b>5</b>
Expectation 2: Narrative Reporting	<b>10</b>
Expectation 3: Audit Committees	<b>17</b>
Expectation 4: Auditors	<b>19</b>
<b>Conclusion</b>	<b>20</b>
Table 1	<b>21</b>
Excerpts from Deloitte's Audit Report on BP plc's 2020 Form 20-F	<b>25</b>



## Executive Summary

**The world energy system is in an urgent transition in order to limit global warming to 1.5°C, consistent with the ambition of the Paris Agreement on climate change.** Some oil and gas companies have embraced this transition by adopting strategies to retool their business models. Others intend to hold out on existing business models as long as legally and economically possible. This report shows how existing U.S. accounting and disclosure principles apply to require both kinds of companies to be transparent to investors about how their choices and strategies bear on their financial statements today.

The transition has already had significant financial impacts on oil and gas companies' financial results and positions. In 2020 alone, changes in oil and gas companies' estimates of future cash flows stranded \$145 billion in property, plant and equipment, which the companies wrote down on their balance sheets. This may be the tip of the proverbial iceberg, though. The Financial Times estimates that "around \$900 billion – or one-third of the current value of big oil and gas companies – would evaporate if governments more aggressively attempted to restrict the rise in temperatures to 1.5°C above pre-industrial levels for the rest of this century."

Estimates of future cash flows are the bedrock of both financial planning and financial reporting. Embedded in them are assumptions about future commodity prices. They translate estimates about the future into present day asset values, liabilities and expenses. They are the portal through which all sorts of risks and opportunities impact the financial statements.

Changes in estimated future cash flows can cascade through financial statements. They are the basis for the fair value of proved oil and gas reserves used to evaluate potential impairment of the carrying value property, plant and equipment needed to extract, transport, refine and store oil and gas produced from those reserves. They also affect companies' estimates of the useful lives of such long-lived assets, which sets current depreciation, depletion and amortization expense, and the timing of asset retirement obligations.

These are basic, longstanding accounting concepts. There is no exception for climate risks, or the risks associated with interventions by governments, financial institutions and consumers to penalize high levels of greenhouse gases emitted in the company's operations and when customers and consumers use its products. Oil and gas companies must adhere to them for their financial statements to be fairly presented, as required under the federal securities laws.

The Securities and Exchange Commission's (SEC) disclosure rules are also clear. Companies are required to disclose material changes in corporate strategy. These disclosure rules also require management to provide context for the financial statements, to give investors a fair understanding of the quality of companies' earnings. This includes disclosure of trends and uncertainties indicating that current earnings may not be repeatable.

These rules also require disclosure of critical assumptions that underlie the financial statements, as well as discussion of the company's liquidity and access to capital. Climate change, the energy transition, regulatory interventions to reduce GHG emissions, the preferences of consumers and demands of financial institutions may prompt material changes in business strategy, reduce the repeatability of earnings and constrain access to short- and long-term capital needed to execute on corporate strategies. If so, those impacts are required to be disclosed under the existing, principles-based disclosure framework.

On the whole, significant improvement in oil and gas companies' financial reporting is needed. The SEC has announced several initiatives to enforce compliance with its existing rules as they apply to climate considerations. Among other things, on February 24, 2021, then Acting Chair Allison Herren Lee "direct[ed] the Division of Corporation Finance to [enhance its focus on climate-related disclosure](#) in public company filings." On March 4, 2021, the SEC announced the creation of a [Climate and ESG Task Force](#) in its Division of Enforcement. On March 15, 2021, then-Acting SEC Chair Allison Lee called for public input on climate change disclosures. In addition, on March 19, 2021, the Financial Accounting Standards Board (FASB) published a FASB Staff Educational Paper on the [Intersection of Environmental, Social and Governance Matters with Financial Accounting Standards](#).

**In light of applicable accounting and disclosure requirements that exist today, this report lays out four key investor expectations for financial reporting by oil and gas companies and guidance for those preparing companies' financial reports, audit committees and auditors.**

**Expectation 1**

Oil and gas companies should show the impacts of climate change and the energy transition in their financial statements.

**Expectation 2**

The narrative portion of oil and gas companies' financial reports should include robust discussion of the effect of climate change and the energy transition on the company and be supported by disclosure in the financial reports.

**Expectation 3**

Audit committees should reinforce rigorous consideration of climate-related impacts on financial reporting and provide for robust audits.

**Expectation 4**

External auditors should demonstrate that they have taken climate impacts and the energy transition into account.



## Introduction

**Oil and gas companies face unprecedented challenges today, beyond the competitive market conditions they have faced for decades.** During the past year, many of the world's biggest economies stepped up their climate commitments. With the U.S. now recommitted to the Paris Agreement, [more than two thirds of the world's economy](#) and 50% of global greenhouse gas emissions will have goals to achieve net zero GHG emissions by 2050.

Propelled by government action and consumer demand, renewable energy costs have dropped so dramatically that [they are now competitive with fossil fuel-based energy sources](#). New and emerging technologies, such as electric vehicles, are making non-carbon-based energy viable and cost-effective. The momentum behind government policies supporting further technological innovation in renewable energy, removing subsidies for fossil fuels, and instituting or increasing carbon taxes will accelerate this trend and promote market-based decisions to decrease use of fossil fuels.

Many major financial institutions and asset managers have pledged to reduce their exposure to and financing of carbon-intensive industries, firms and projects. Investors, individually and through broad coalitions, have set targets to reduce the carbon intensity of their investment portfolios.

As a result of these combined forces, the oil and gas industry is at a turning point. Investors need more visibility into the financial impact of these changes in order to make better-informed decisions about capital allocation and stewardship. This lack of visibility increases risk exposure to investors. It is why a growing chorus of investors are demanding transparency about the financial impacts of climate change and the global effort to limit global warming in line with the Paris Agreement.

As governments and companies work towards building an energy system that is reliable and affordable and emits significantly fewer greenhouse gases, it is crucial that oil and gas companies provide investors honest and robust accounting and disclosure of the impacts of the transition. This is required, regardless whether a company's strategy is to embrace the transition by contributing to achieving net-zero global emissions or to hold out until traditional business lines are no longer economically viable. This report shows how existing U.S. accounting and disclosure principles apply to require both kinds of companies to be transparent to investors about how their choices and strategies bear on their financial statements today.

Based on those principles, this report outlines expectations that investors can take into account – in coordination with the Climate Action 100+ initiative and the Ceres Accelerator for Sustainable Capital Markets and other initiatives – to drive improvements in the quality of financial reporting. Alongside engagement with company directors and auditors, investors have also been increasingly likely to use their votes at company shareholder meetings to ensure accountability for rigorous and reliable financial reporting. (See, for example, BlackRock's July 2020 paper [Our Approach to Sustainability](#), which identifies 244 companies on a watch list for voting action, and BlackRock's CEO Larry Fink's [2021 Letter to Clients](#) "expanding this focus universe to over 1,000 carbon-intensive companies.")

**Climate Action 100+, the world's largest investor engagement initiative on climate change, and the Ceres Accelerator for Sustainable Capital Markets and other investor initiatives stand ready to work with investors on these efforts.**

If companies are skeptical of investors' resolve as to the importance of this disclosure, they need only look to the January 2021 letter from Larry Fink, CEO of the world's largest asset manager BlackRock, urging companies to disclose how their strategies align with achieving a carbon-neutral economy by 2050.

"There is no company whose business model won't be profoundly affected by the transition to a net zero economy – one that emits no more carbon dioxide than it removes from the atmosphere by 2050, the scientifically-established threshold necessary to keep global warming well below 2°C. As the transition accelerates, companies with a well-articulated long-term strategy, and a clear plan to address the transition to net zero, will distinguish themselves with their stakeholders – with customers, policymakers, employees and shareholders – by inspiring confidence that they can navigate this global transformation. But companies that are not quickly preparing themselves will see their businesses and valuations suffer, as these same stakeholders lose confidence that those companies can adapt their business models to the dramatic changes that are coming."



## Expectation 1

### **Oil and gas companies should show the impacts of climate change and the energy transition in their financial statements.**

When it comes to financial reporting by oil and gas companies, the future is now. This is because estimates about the future underpin corporate accounting.

One of the most critical components of financial planning and reporting is the estimates of future cash flows. Within the oil and gas industry, these estimates dictate the value of proved oil and gas reserves. They are used to assess the carrying value of the property, plant and equipment needed to drill, produce, transport, refine and store such reserves. They also affect the length of useful life of assets, which in turn affects current depreciation expense, as well as the timing and amount of expenditures needed to fulfill legally-mandated asset retirement obligations (ARO), such as covering the costs of plugging and abandoning wells imposed by state and federal regulations.

These estimates of future cash flow put climate change, the energy transition and global efforts to reduce GHG emissions into nearly every line item of oil and gas companies' financial statements.



## Asset Retirement Obligations

“Because risks from oil and gas asset retirement obligations are so material and potentially volatile, it’s important that investors understand the key assumptions underlying these critical accounting estimates, including:

- What obligations are excluded because firm managers claim they cannot reasonably estimate the remaining useful life of the assets, which is almost always the case for midstream and downstream assets? Forget about discounting! Investors should want to know what it would cost to settle these AROs if the assets had to be shut down and cleaned up today.
- What is the undiscounted liability for the discounted amounts shown on the balance sheet? High discount rates and long discount periods can make giant obligations seem small.
- What are the underlying cost and timing assumptions, how accurate have these assumptions been in the past, and how susceptible is the company to ‘ARO acceleration’?
- How much does the company have in ARO surety bonds or other financial assurance to cover its AROs?”

—[Greg Rogers](#), a U.S. environmental attorney and CPA, Fellow at the Cambridge Judge Business School and founder of Eratosthenes, a financial consultancy specializing in accounting for climate change.

### **U.S. GAAP require discussion of estimates when it is reasonably possible that the estimate will change in the near term (within one year) and that the effect of the change would be material.**

The estimate of such an effect must also be disclosed. For oil and gas companies, this basic precept means that the uncertainty associated with climate change and the energy transition significantly increases the number and range of estimates that oil and gas companies may have to continually change, and thus disclose. Accordingly, oil and gas companies may find that material impacts to property, plant and equipment and AROs are reasonably possible within the next year and for many years to come, triggering near continuous disclosures.

### **U.S. GAAP also require that long-lived assets or asset groups be tested for impairment whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable through future cash flows.**

Within the last 12 months, major U.S. and European oil and gas companies have written down the value of more than \$145 billion in impaired assets on their balance sheets. This is on top of effective write downs folded into sales of assets at below carrying values. And as discussed above, analysts believe more are to come.

One of the most significant factors in these impairments is changes in assumptions about the long-term future oil and gas prices that go into estimating future cash flows. Companies must maintain effective internal controls over the development of such assumptions, which among other things means making sure that the assumptions used for financial reporting are the same as the assumptions the company uses for internal planning.

These assumed future prices relate to commodities. Thus, assumptions about price also ought to be in line with external indicators. And if a company's financial statements are based on long-term price assumptions that are materially higher than peers', investors are entitled to know that. Under both the applicable accounting standards and SEC disclosure requirements, if it is reasonably possible that long-term price assumptions will change in the near term and the effect would be material, the assumptions must be disclosed.

### **Companies should provide disclosure on the pricing assumptions that underlie their published accounts.**

Some companies have tied lower long-term oil and gas prices to the global effort to reduce GHG emissions in line with the goals of the Paris Agreement. Others have simply acknowledged reduced long-term price assumptions, without explicit attribution to policy interventions to limit global warming by raising the effective price of carbon. Given the uncertainty about the path and timing of government interventions, transparency as to companies' assumptions about the effect of such interventions on future prices is imperative. This should include robust, transparent scenario analysis that quantifies both the assumptions used in the analysis, as well as the financial impact of the company's strategy under the scenario, including impact on production and investments.

This is why the Financial Stability Board's Taskforce on Climate-related Financial Disclosure (TCFD) recommended in its June 2017 guidance on [Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#) that all energy companies disclose their "current carbon price or range of prices used." The TCFD's rationale is that "[i]nternal carbon prices used, affecting the assessment of an organization's key assets, provide investors with a proper understanding of the reasonableness of assumptions made as input for their risk assessment." While many companies treat the recommendations as voluntary, this information is clearly material to an understanding of asset impairment risk, and should be disclosed.



**Assumptions about GHG emissions associated with a company's operations (Scopes 1 and 2 under the GHG Protocol) and products (Scope 3) also affect accounting estimates.**

When a company makes corporate climate commitments to reduce GHG emissions, its estimates about the asset lives of property, plant and equipment, refinement, transport, and storage used in oil and gas production should be consistent with those targets. A commitment to achieve net-zero emissions by 2050, for instance, may require shortening the estimated life of certain assets, which will increase current depreciation expense and may trigger (or increase) an ARO. This in turn must be added to the carrying value of the asset at issue, raising the bar against which the future cash flows over the shortened period of the asset's life must be measured. If a company makes no such commitment, the ongoing energy transition and government interventions to accelerate it can also cascade through the financial statements.

The key in both cases is transparency. On the one hand, transparency ensures investors can understand how sensitive the company's current accounting estimates are to potential further adjustments that may be required to stay on track with its commitments to reduce GHG emissions. On the other, a company cannot delay providing investors transparency as to climate-related financial impacts simply by asserting that the company believes there will always be sufficient demand for its products to make production cost-effective past or even through 2050, without evidence as to how that production can be achieved in a way that is consistent with escalating policy interventions to reduce GHG emissions.

Whether a company makes commitments to reduce GHG emissions or not, they should consider embedded GHG emissions in evaluating whether reserves are economically producible. The TCFD also recommended in its 2017 supplemental guidance for all energy companies, [Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#), disclosure of "[a] breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions" on the ground that "[t]ransition to a low-carbon economy may affect the value of reserves or long-lived assets."

From investors' perspective, the optimal location for this disclosure is in the notes to the financial statements, in order to include it within the scope of the financial audit and provide a basis for confidence in the company's assertions that the value of proved reserves justify the carrying value of capitalized property, plant and equipment. Omission of embedded GHG emissions may call into question the validity of the claim that the reserves are in fact economically producible, among other things, in light of the limited carbon budget remaining if the global temperature rise is to be kept well to under 1.5°C.



## Companies should provide disclosure on carbon offsets and carbon capture assumptions.

One area where investors increasingly need more clarity and consistency from oil and gas companies is in accounting for carbon offsets (whether internally generated or purchased) and carbon capture that play a significant role in the companies' climate strategies and pledges.

U.S. GAAP do not currently address accounting for carbon offsets and, as a result, companies have taken different approaches. The area urgently requires clarity from the SEC or the FASB, but the absence of guidance does not excuse opaque or misleading disclosure. Current practices could result in material omissions about the efficacy of the offsetting strategy or mislead investors about the validity of asset lives and other accounting estimates that depend on emissions being offset.

Actual and forecasted carbon offset costs can also indicate a risk of asset impairment. That is, if a company cannot reduce an asset's attributable emissions (whether from operating the asset or using oil or gas produced from the asset) to zero, it must factor in an assumption for the expense of a future carbon price associated with the emissions. Or, it can offset the asset's positive emissions with so-called negative emissions that remove CO<sub>2</sub> from the atmosphere. Either way, the added cost of offsetting reduces the expected future cash flows associated with the emission-producing asset. Both past carbon offset costs and assumptions about future carbon offset costs (i.e., internal carbon price assumptions) are relevant to impairment testing, asset lives and the estimated timing of ARO settlements.

Investors should also be able to understand the extent to which the climate strategy that underlies a company's financial reports depends on the future availability of negative emissions technologies that are not yet more than an aspiration today.<sup>1</sup> For example, Ceres' [Climate Strategy Assessments for the U.S. Electric Power Industry: 2019 Update](#) describes how, when Xcel Technologies in 2018 announced new goals to reduce carbon emissions and deliver 100% carbon-free electricity to customers by 2050, the company "excluded scenarios that assumed the availability of significant negative emissions in the electric power sector, deeming such technologies to not be commercially available. As a result, the scenarios selected by Xcel Energy . . . required more significant near-term emission reductions to compensate for the lack of negative emission technologies."

These strategic choices weigh heavily on whether significant estimates used in a company's financial statements are subject to change in the near term. For example, if an underlying strategy that is dependent on negative emissions needs to shift to more significant near-term emission reductions, as Xcel Technologies did, such strategic changes could trigger asset impairments and new charges for AROs.

In addition, as the [Taskforce on Scaling Voluntary Carbon Markets](#) has encouraged, companies should take care to provide investors [a basis for confidence in the legitimacy of purchased or developed carbon offset credits](#) and the reliability of any carbon offset service organization used by the company. These disclosures should include carbon offset strategies a company may employ and up-to-date results of testing both the design and operating effectiveness of any offset service provider or any internally developed offset program.

---

<sup>1</sup> TCFD, [2019 Status Report](#) (June 2019) at 45 ("Ideally, we would like to see the IEA . . . adopt a more precautionary stance with regard to negative emissions technology in its modelling"); UNPRI and Energy Transition Advisors, [Pathways to Net Zero: Scenario Architecture for strategic resilience testing and planning](#) (June 2020) at 23 ("More emissions early implies stronger reductions later or negative emissions implementation.")



## Expectation 2

### **The narrative portion of oil and gas companies' financial reports should include robust discussion of the effect of climate change and the energy transition on the company.**

Public company annual reports provide the primary vehicle for investors to understand the operations and financial condition. Climate change and the energy transition have financial impacts, particularly on oil and gas companies. Many oil and gas companies discuss, in the narrative portion of their annual reports filed with the SEC, how climate change and the energy transition bear on the company's business, financial position and results. Yet most fail to show how those impacts bear on the financial portion of the annual report.

Under the applicable audit standards of the Public Company Accounting Oversight Board, the U.S. audit oversight body, auditors are tasked to [read and consider](#) whether the financial statements are consistent with other information in the annual report. Because of this procedure, disclosure in the annual report is significantly more useful to investors than disclosure in separate climate or corporate sustainability reports for a broader array of stakeholders. TCFD-aligned disclosure, widely supported by investors and financial leaders, includes a number of climate-related financial impacts that are ignored or underreported and should be included in annual reports. These disclosures, some of which are detailed here, have implications for investment and voting decisions and, as such, audit committees are encouraged to ensure they are included in future reporting.

## **The TCFD’s recommended disclosures provide important context for financial statements.**

In their October 2020 report [Mainstreaming the Transition to a Net-Zero Economy](#), the Group of Thirty international economic experts (of which Janet Yellen, now the Secretary of the Treasury, was recently a member) drove home the point that climate disclosures “remain far from the scale” necessary for investors to “systematically channel investment to sustainable and resilient technologies and companies.” The report called on all large, listed companies to report a full set of disclosures under the framework set forth by the TCFD by 2022 and on national authorities to make TCFD disclosures mandatory by 2023.

Investors have joined in the call to see this gap closed, especially among companies in carbon-intensive industries such as oil and gas. For example, in January 2020 BlackRock “began [explicitly asking companies to report in line with TCFD standards.](#)”

TCFD disclosures provide material context to oil and gas companies’ financial statements and belong in the annual report. This disclosure should include comparable quantitative metrics in addition to qualitative context. For example,

- As the Group of 30 report recommends, “These metrics are likely to include information on the financial impact of a range of both transition and physical risk scenarios, as well as information on current Scope 1, 2, and 3 emissions and forward-looking targets. As companies come under increasing pressure to set and disclose net-zero targets, these targets should be ambitious and credible, and underlying assumptions (for example, about future availability of Carbon Capture and Storage technologies) should be clearly spelled out. Given the complexity in estimating Scope 3 emissions, companies should also set out the methodologies they use for assessing current Scope 3 emissions.”
- Metrics should allow investors to understand the company’s approach to the energy transition sufficient to make informed investment and voting decisions. For example, where companies have an emissions intensity target, absolute emissions data and progress should be included. Companies should also explain how those targets are integrated into executive compensation and employee incentives.
- Companies should also make clear, in their footnote disclosure detailing past and planned capital expenditures, the portion of such expenditures that directly supports a transition to net-zero or low-carbon production and products, with sufficient clarity to understand the basis for classifying expenditures as such and whether they align with emerging industry standards. In this way, the financial statements should support and quantify claims about capital investments in net-zero or low-carbon strategies included in the narrative portion of the annual report or other qualitative corporate disclosures about such strategies.

## **The description of business should include the role of climate in the business.**

The SEC requires that companies’ annual reports include a description of the business to put the financial statements in context. For carbon-intense companies, this description should be robust and include the role the business plays in the energy transition.

Most oil and gas companies describe, in more or less detail, the material risks that climate change and climate-change mitigation present to their business models. Given the uncertainty about the pace and scope of the energy transition, changes in corporate strategy to address emerging risks and take advantage of new opportunities are also material to investors' decisions about capital allocation and stewardship and should be included in a company's description of its business.

[Item 101 of the SEC's Regulation S-K](#) requires disclosure of information that is material to an understanding of the general development of the company's business, including changes in strategy. Item 101(c) requires companies to "[d]escribe the business done and intended to be done by the registrant and its subsidiaries." This item specifies that "only information material to an understanding of the business taken as a whole is required" and that [d]isclosure may include, but should not be limited to, the information specified" in six categories, including a description of the company's human capital resources. When Item 101 was recently amended in August 2020, then-SEC Chairman Jay Clayton stated that he expects "to see meaningful qualitative and quantitative disclosure, including, as appropriate, disclosure of metrics that companies actually use in managing their affairs" and that he "would also expect companies to maintain metric definitions constant from period to period or to disclose prominently any changes to the metrics used or the definitions of those metrics."

The [SEC's recent rulemaking to modernize narrative reporting under Regulation S-K](#) emphasized the importance of disclosing material changes to a previously disclosed business strategy. Based on these changes, [one prominent group of lawyers said](#) they "expect that many companies may take the amendments as an opportunity to overhaul their disclosure significantly" and include "a business strategy section where one has not previously been disclosed." This is valuable advice, particularly as a way to explain the role of a company's climate commitments or other climate strategies in its overall business strategy and to provide investors important context about the quality of its earnings and the sensitivity of its accounting estimates to change as climate risks require material changes to those strategies.



## Companies should consider the following questions in describing their business:

- **How do you monitor, measure and adjust your climate strategy?** Is your strategy on track to achieve net-zero global GHG emissions by 2050? If not, how clear is your disclosure to investors that your strategy will not meet those goals? Or about the potential impact of not meeting those goals on the viability of the business through the energy transition?
- **Have you fully described the GHG emissions profile of your business so that investors can assess both current and future emissions that will be attached to their investment?** For example, these disclosures should include the company's program to monitor, measure and reduce methane emissions. Scope 1 methane emissions have global warming potential that is typically 84 times greater than that of CO<sub>2</sub> over a 20-year time period. As a result, methane emissions are important targets for regulatory interventions that can significantly impact an emitter's financial position and results. By the same token, given the intensity of their impact on climate change, changes in methane emission (or assumptions about future emissions), positive or negative, can translate to significant financial impacts, by flowing through the financial statements in the form of assumptions underlying asset impairment testing, estimated asset lives (and related changes in depreciation, depletion and amortization expense) and AROs.

Scope 3 emissions related to downstream transportation and distribution, processing of sold products, and use of goods sold (categories 9 through 11 under the GHG Protocol) have a through line to a company's financial statements, which the narrative should evince if not already evident in the financial statements. Anticipated regulatory interventions related to use of fossil-fuel products, competition from lower-emitting technological innovations and shifts in consumer education, awareness and preferences

can reduce demand for a company's products, regardless of growing demands for energy generally. Lower demand can lead to lower forecasted commodity prices, which in turn lead to lower future cash flows underlying asset values. This is why it is important that companies provide rigorous and reliable reporting on emissions, even though neither the SEC nor the FASB have explicitly required emissions disclosures. Emissions inherently impact asset values and can trigger asset impairments, among other things. Investors understand this and have called for disclosure of Scope 3 emissions in carbon intensive industries, including particularly oil and gas companies.

- **Is your climate strategy based on the same assumptions that underlie your financial statements,** such as future commodity price assumptions used to evaluate whether your reserves are economically producible? Likewise, what elements of your scenario analysis are factored into your assumptions about prices and the economic viability of reserves? What are your assumptions about consumer energy preferences, e.g., major car makers' and buyers' plans to transition to electric vehicles and utilities' shift toward renewable electricity grids?

PIMCO's screening process considers both absolute and intensity GHG emissions, including Scope 3, across the entire value chain. "Carbon emissions intensity including a lifecycle methodology enables some comparison within the sector and over time, as well as in relation to climate scenarios... These indicators also help capture the bulk of emissions (embedded, e.g., in the product use) and potential financial risks prompted by reduced demand."

—PIMCO 2018 ESG Investing Report



- **How does the price of carbon affect your business** overall as well as by segment, given that your legacy business is to sell hydrocarbon products, and that government policy actions around the world are expected to significantly raise the effective price of carbon in order to reduce demand for hydrocarbon products? You should disclose the metrics that you use to monitor the effect of changes in the price of carbon on whether your reserves are economically producible, including the price at which your reserves would not be economically producible. [CarbonTracker](#) has analyzed the effect that 2020's low prices would have had on many majors' financial statements if those prices had been used for impairment testing, using the standardized measure assumptions, and found significant shortfalls. The SEC's Regulation S-K, Subpart 1200, invites companies to provide an optional reserve sensitivities analysis table using future price scenarios. That option is rarely used, but would be useful to investors in light of climate trends today.
- **How do you monitor and measure the preparedness of your workforce for the energy transition?** What challenges do you face in recruiting and maintaining the skillsets you need to execute your strategies? What is your training investment, by managers and non-managers, to prepare the workforce for the transition? How effective is the training? How do you monitor and measure internal capacity for innovation? What metrics do you use to measure the future value of your human capital resources? The [SEC's recent rulemaking to modernize narrative disclosure](#) added a new requirement that companies disclose their "human capital resources" and "any human capital measures or objectives that the registrant focuses on in managing the business." Fundamental data on the workforce, including the size and total cost of the workforce, turnover, and extent of diversity and inclusion by seniority level, and the role of human capital management in growing corporate value and resilience is critical at this time. These metrics should be specific, consistent and comparable to avoid investor confusion.



## The SEC Requires Management Discussion and Analysis of Financial Condition and Results of Operation.

Item 303 of the SEC's Regulation S-K requires that annual reports include management's discussion and analysis of the company's financial condition and results of operation (MD&A). MD&A must address the company's liquidity, capital resources, and results of operations, as well as "such other information that the company believes to be necessary to an understanding of its financial condition, changes in the financial condition and results of operations." Item 303 also requires that the MD&A section "focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results." These requirements are grounded in the idea that a company's financial statements and accompanying footnotes:

may be insufficient for an investor to judge the quality of earnings and the likelihood that past performance is indicative of future performance. MD&A is intended to give the investor an opportunity to look at the company *through the eyes of management* by providing both a short, and long-term analysis of the business of the company (emphasis added).

## Companies should disclose Long-term Commodity Prices and Other Critical Accounting Assumptions.

Under longstanding, Enron-era [SEC guidance on the MD&A requirements](#), the SEC has directed companies to disclose significant assumptions that affect their accounts:

Since critical accounting estimates and assumptions are based on matters that are highly uncertain, a company should analyze its specific sensitivity to change, based on other outcomes that are reasonably likely to occur and would have a material effect. **Companies should provide quantitative as well as qualitative disclosure when quantitative information is reasonably available and will provide material information for investors.**

For example, if reasonably likely changes in the long-term rate of return used in accounting for a company's pension plan would have a material effect on the financial condition or operating performance of the company, the impact that could result given the range of reasonably likely outcomes should be disclosed and, because of the nature of estimates of long-term rates of return, quantified.

Investors expect oil and gas companies to adhere to this guidance, including in particular by disclosing the long-term commodity prices and other critical assumptions that affect impairment testing.

## Companies Should Describe Constraints on Access to Capital Due to Bank Limits on Emissions and Other Risks Related to Emissions.

Numerous banks and other financial institutions have pledged to reduce the emissions associated with their loan and investment portfolios, or so-called financed emissions by their corporate clients, including oil and gas companies. Moreover, many banks have restricted financing for specific kinds of projects, such as projects involving oil sands or other unconventional exploration. The number and scope of ambition of such pledges is growing rapidly. In September 2020, Morgan Stanley committed to reaching net-zero financed emissions by 2050, [followed by HSBC, JPMorgan Chase, Bank of America, and Wells Fargo](#). To make good on these pledges, banks have begun to estimate emissions, demand reporting from clients and set reduction targets for them. Companies that are not equipped to deliver both reporting and reductions risk both higher financing costs and losing access to financing.

On November 18, 2020, the Partnership for Carbon Accounting Financials (PCAF) launched the Global GHG Accounting and Reporting Standard. [The PCAF](#) is a partnership of 118 financial institutions, representing more than \$38 trillion in assets, that have committed to measure and disclose financed emissions in a harmonized way, to help financial institutions align their portfolios with the Paris Agreement. The PCAF's new standard sets forth a methodology to measure financed emissions across six asset classes: listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgages and motor vehicle loans. The PCAF's business loans category includes:

all loans and lines of credit for general corporate purposes (i.e., with unknown use of proceeds as defined by the GHG Protocol) to businesses, nonprofits, and any other structure of organization that are not traded on a market and are on the balance sheet of the financial institution. Revolving credit facilities, overdraft facilities, and business loans secured by real estate such as CRE-secured lines of credit are also included. (footnotes omitted)

It requires measurement and reporting on scopes 1, 2 and 3 emissions, as defined by the GHG Protocol, associated with oil and gas companies in member institutions' portfolios. The PCAF standard, and more broadly, financial institutions' individual pledges, stand to significantly constrain oil and gas companies' liquidity and access to financing, making reliable calculation and reporting on emissions critical to investors' understanding of companies' financial risks.

Given recent economic conditions, some companies have turned to the debt markets to be in a position to maintain their dividend policies, putting even more pressure on maintaining access to financing. Investors should have sufficient information to understand the short- and long-term impact of using debt to support dividend policies, including the impact of changes in investment grade and high-yield debt markets, as well as the impact of trends and policies related to the market for green bonds.

Moreover, banks are not the only market participants focused on the link between GHG emissions and the long-term viability of oil and gas companies' business models. In December 2020, Lloyds of London announced that the Lloyd's Corporation and its members will [end new insurance cover for oil sands and new Arctic energy exploration](#) activities (as well as thermal coal-fired power plants and thermal coal mines) from Jan. 1, 2022, with a target date of Jan. 1, 2030, to phase out the renewal of existing cover. And, in February 2021, [Standard & Poor's downgraded the credit ratings of three oil majors](#), citing "growing risks from energy transition due to climate change and carbon/GHG emissions, weak industry profitability and greater expected volatility in hydrocarbon fundamentals."

Companies should include a robust discussion of these impacts in MD&A, including impacts on access to financing capital for operations, acquisitions, dividend practices and research and development. Clear and reliable reporting on both current and expected future GHG emissions is also important to allow investors to understand threats to a company's access to financing.



### Expectation 3

#### **Audit committees should reinforce rigorous consideration of climate-related impacts on financial reporting and provide for robust audits.**

Audit committees play a critical role in overseeing financial management in a way that enables and verifies progress on corporate strategy, such as by verifying the consistency between announced corporate intentions and planned capital expenditures and communicating the results of that strategy impartially in financial terms to investors and capital markets. For that reason, audit committees can be instrumental to facilitating the industry's transition to a net-zero global economy by enforcing transparency about how their companies' climate strategy flows through financial accounts.

Audit committees should oversee the financial reporting process in a way that demonstrates that the company's climate strategy is a top priority and is reflected consistently throughout the financial statements. Audit committees are in a unique position to ensure that financial statement disclosures about past and planned capital expenditures distinguish between traditional technologies and projects and investments in innovations that will position the company for the energy transition.

Audit committees should also ensure that management maintains information systems that support robust reporting on progress on the company's climate strategy. This includes tracking emissions and other climate data with the same rigor as other inputs to the financial reporting system.

To bolster investor confidence – and that of lenders, ratings agencies and other market gatekeepers – audit committee reports should include an explicit statement on how its financial management and audit oversight took into account the company's position and strategy with respect to the goal of the Paris Agreement to limit global warming to well under 1.5°C compared to pre-industrial levels and the energy transition. This includes monitoring the financial impact of *not* having a climate strategy to operate on a net-zero basis in the future.

## **The role and scope of the audit should expand to enhance the rigor and reliability of climate-related disclosure and build investor confidence.**

Audit committees should also set the right tone and expectations with external auditors. Through ongoing oversight of financial reporting and the audit, the audit committee should provide the external auditor the support it needs to conduct a rigorous, risk-based and relevant examination of climate-related impacts on the company's financial results and position. This requires careful attention to both the depth and breadth of the audit.

Investors increasingly rely on climate-related data for investment decisions. For example, PIMCO developed a [tool to assign climate risk scores](#) for transition and physical risk which considers capex, R&D, technology, revenues, profit exposure outlook and lobbying. Clear disclosure of these quantitative metrics provides insight into strategic alignment with the Paris Agreement. "As active asset managers, we must be forward-looking – considering material risks on the horizon, not just those immediately affecting issuers. And in our view, those long-term risks are significant, systemic, and rising."

For example, as discussed above, both current and estimated future GHG emissions can have a material impact on companies' financial statements and access to capital. They can and should be audited at the same level of assurance as other key inputs to the financial statements. As ClientEarth found in its February 2021 report on FTSE 250 disclosure practices, [Accountability Emergency](#), many companies now report their GHG emissions, including Scope 3, even without an explicit legal requirement to do so; "[h]ow Scope 3 emissions were calculated, however, was often very unclear." The independent audit is a key tool to drive discipline into calculation and reporting of emissions and will provide key insights for the financial statement audit overall. In arranging for emissions reporting to be audited in connection with the financial statements, the audit committee will protect the company from errors (which could lead to both flawed strategies and material financial misstatements) and enhance investor trust.

The audit committee should also consider extending the financial audit to cover specific procedures related to the inputs and processes that feed into the company's scenario analysis, as well as the company's use of carbon offsets and other negative emissions technologies.

In addition, audit committees should take care to ensure that other climate-related disclosures, such as the disclosures under the TCFD framework, are integrated into the annual report and not relegated to a separate document that the auditor is not charged to read and consider for consistency with the financial statements.

### **Needs for reasonable assurance over critical inputs to the financial statements:**

- Climate scenario analysis
- Reserves sensitivity analysis table envisioned in Regulation S-K, Subpart 1200
- TCFD disclosures and metrics
- Progress on science-based targets, including the methodology and inputs for measuring progress
- Efficacy of carbon offsets and negative emissions technologies



## Expectation 4

### **External auditors should demonstrate that they have taken climate impacts and the energy transition into account.**

The auditors of oil and gas companies also have an important responsibility to enforce clear-eyed accounting assumptions and estimates and robust, transparent disclosure of the financial impact on the current period financial results and position of the company's preparedness for a net-zero energy system by 2050. This is not an expectation that the auditor judges a company's strategy. Rather, it is an expectation that the auditor assesses whether the company's pledges and other statements about strategy are reflected in the financial statements and, if not, to call out the inconsistency. Auditor skepticism is a critical check on the use of motivated reasoning in developing assumptions and making estimates about the future, especially in the face of an increasingly dim outlook for fossil fuel competitiveness with alternative energy sources and long-term viability.

Some auditors already demonstrate the value of their independent assessment of the estimates that make up corporate accounts. For example, [Deloitte LLP's audit report](#) (see excerpts on page 27 of this report) on BP plc's financial statements for the period ending December 31, 2020 explicitly discusses work that management and, separately, the audit team performed to evaluate the long-term commodity price assumptions that underpinned the company's asset impairment testing. [Its audit report](#) accompanying the company's U.K.-filed accounts went even further in describing the role of climate change and the energy transition in the audit.

It has never been more important to investors, financial markets and indeed oil and gas companies themselves that audit reports include clear and robust discussions of critical audit matters, such as the uncertainties related to climate change and the transition to net-zero global emissions, and what the auditors did to address them. Yet ClientEarth observed in [Accountability Emergency](#), its report on U.K. listed companies, which on the whole are ahead of U.S. companies when it comes to climate disclosure, that “the limited extent to which auditors are drawing attention to these matters in their audit reports also indicates that many are failing to properly test management on their accounting assumptions and disclosures.” This can and should be corrected with enhanced auditor focus on the through line between climate risks and the audited financial statements.

## Conclusion

Many companies that use oil and gas products have announced strategies to align with the goals of the Paris Agreement. Some oil and gas companies have joined them, promising to transform their business models to bring about net-zero global emissions by 2050. Others have announced more modest plans to participate in the energy transition in some form. Yet the United Nations Environment Program [estimates](#) that the oil and gas industry is “on track to exceed carbon budgets, with continued investment and infrastructure locking in use of these fuels, until countries are producing between 40% and 50% more oil and gas by 2040 than would be consistent with limiting warming to 2°C.” It does not add up.

Investors are entitled to know how corporate pledges and strategies affect reported financial results and positions and how close to or far off the Paris Agreement’s target those pledges and strategies are. The extreme uncertainty and disruption of climate change, and global efforts to arrest it, call historic estimates and estimation processes into question in a way that demands transparency about the assumptions and estimates that underlie accounts. [Global emissions were approximately 6% lower in 2020 than in 2019](#), the greatest drop on record, making 2019 the year of peak demand in some analysts’ view. Yet whether the world will buy more oil and gas products is only one factor in setting assumptions. Another significant one is what [changes in strategy and business model will be required to meet the goal of the Paris Agreement](#) to limit warming to well below 1.5°C, in a world where more and more governments, consumers and society are getting serious about the need to do so.

Some companies (and their audit committees and auditors) have already moved to provide transparent financial reports aligned with the goals of the Paris Agreement. This allows investors to understand and monitor the full financial impact of climate change on a company’s financial position and the quality of its earnings as it faces the future. It’s well past time for the world’s oil and gas companies to lift the veil for their investors.

## Table 1. Selected Key Areas of Accounting Affected by Climate-related Risks and Strategies

The Financial Accounting Standards Board (FASB) Accounting Standards Codification<sup>©</sup> is the source of authoritative generally accepted accounting principles (U.S. GAAP) recognized by FASB to applied by nongovernmental entities.

This is a non-exclusive list of selected key areas of accounting that may be affected by climate-related risks and strategies.

### Key Area: Use of Estimates

U.S. GAAP – Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC 275-10-05-7</b> Presentation – Risks and Uncertainties – Overall – Overview and Background – Use of Estimates in the Preparation of Financial Statements</p> <p><b>ASC 275-10-20</b> Presentation – Risks and Uncertainties – Overall – Glossary (Near Term)</p> <p><b>ASC 275-10-50-6</b> Presentation – Risk and Uncertainties – Overall – Disclosure – Certain Significant Estimates</p> <p><b>ASC 275-10-50-14</b> Presentation – Risks and Uncertainties – Overall – Disclosure – Certain Significant Estimates</p>	<p>U.S. GAAP requires management to clearly and explicitly disclose significant estimates, i.e., estimates that could materially change in the near term, regardless of the cause. Climate-related events and circumstances, including market and government actions to address climate change, and the transition to a low-carbon economy could trigger changes in accounting estimates.</p> <p>Changes in assumptions related to climate strategies, market shifts or future policy changes and other governmental interventions to limit global warming may trigger current period changes in estimated future cash flows associated with long-lived oil and gas assets. If it is reasonably possible that an estimate will change materially in the near term, the estimate must be disclosed.</p>

### Key Area: Proved Oil and Gas Reserves

U.S. GAAP – Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC 360-932-20</b> Assets – Property, Plant and Equipment—Extractive Activities – Oil &amp; Gas – Glossary (Proved Oil and Gas Reserves)</p> <p><b>ASC 360-932-20</b> Assets – Property, Plant and Equipment—Extractive Activities – Oil &amp; Gas – Glossary (Economically Producing)</p> <p><b>ASC 360-932-25-5 and 25-6</b> Assets – Property, Plant and Equipment—Extractive Activities – Oil &amp; Gas – Recognition – Accounting at the Time Costs are Incurred</p> <p><b>ASC 360-932-25-12</b> Assets – Property, Plant and Equipment—Extractive Activities – Oil &amp; Gas – Recognition – Development</p>	<p>There is no line item on the balance sheet for oil and gas reserves. Rather, the value of reserves is relevant to determine the expected future benefits of long-lived assets used in acquisition, exploration and development activities. Proved reserves are those reserves that are determined to be economically producible from a given date forward. Given the significance of GHG emissions in evaluating whether reserves will generate revenue that exceeds the cost of operation under increasingly carbon-constrained policies and circumstances, companies should consider embedded GHG emissions in evaluating whether reserves are economically producible.<sup>1</sup> Companies should also consider disclosing GHG emissions embedded in reserves for purposes of evaluating impairment of related property, plant and equipment, in order to allow investors to judge the viability of those reserves in light of market and government actions to address climate change, as well as to evaluate the risk that the company will need to write off capitalized development and other costs in the future, if policy or market actions make such reserves not economically producible.</p> <p>Embedded emissions may trigger lower projected revenues or operating margins due to declining commodity prices or higher carbon prices.</p> <p>Omission of embedded GHG emissions may call into question the validity of the claim that the reserves are in fact economically producible, among other things in light of the limited carbon budget remaining if the global temperature rise is to be kept within less than 2°C compared to pre-industrial levels, consistent with the Paris Agreement.</p>

<sup>1</sup>The Financial Stability Board’s Task Force on Climate-related Financial Disclosure also recommended, in its supplemental guidance for energy companies, disclosure of “[a] breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions” on the ground that “[t]ransition to a low-carbon economy may affect the value of reserves or long-lived assets.” TCFD, *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures* (June 2017), at 55. <sup>2</sup>See, e.g., Kepos Carbon Barometer at <https://www.carbonbarometer.com/#/>.



## Key Area: Impairment of Oil and Gas Assets

U.S. GAAP – Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC 360-932-35-8 and 35-9</b>            Assets – Property, Plant and Equipment – Extractive Activities – Oil &amp; Gas – Impairment</p>	<p>Financial statements should be clear as to whether the recoverable amount of the related property, plant and equipment has been evaluated in light of potential policy actions and other governmental interventions to limit global warming to less than 2 °C compared to pre-industrial levels, consistent with the Paris Agreement. If management does not assert alignment, assumptions disclosed should allow investors to understand how such policies and interventions would affect asset values.</p>

## Key Area: Impairment of Long-Lived Assets

U.S. GAAP – Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC 360-10-35-21</b>            Assets – Property, Plant and Equipment – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets – When to Test a Long-Lived Asset for Recoverability</p> <p><b>ASC 360-10-35-17</b>            Assets – Property, Plant and Equipment – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets – Measurement of an Impairment Loss</p> <p><b>ASC 360-10-35-18</b>            Assets – Property, Plant and Equipment – Overall – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets – Assets Subject to Asset Retirement Obligations</p>	<p>Companies must use the same assumptions in their expected cash flow projections for impairment analysis that they use for internal planning. This includes assumptions about long-term commodity prices as well as the assumed carbon price/breakeven hurdle used in internal planning and management of long-lived assets. The current global average carbon price is low<sup>1</sup> and may not materially affect an estimate. But the price is expected to increase as governments adopt policies and interventions to meet national and global climate change goals. These changes may materially affect the projected cash flows that underlie the recoverable values of those long-lived assets. Given that oil and gas projects tend to be long-lived, both companies and their auditors should conduct robust stress testing of asset valuations against an escalating carbon price. When that testing indicates that significant estimates could change in the near term, significant underlying assumptions must be disclosed.</p> <p>An impairment loss shall be recognized when the carrying amount of a long-lived asset is not recoverable and exceeds its fair value. The carrying amount of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset.</p>

<sup>2</sup>See, e.g., Kepos Carbon Barometer at <https://www.carbonbarometer.com/#/>.

## Key Area: Impairment of Long-Lived Assets (continued)

U.S. GAAP –Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC 360-10-35-27</b> Assets – Property, Plant and Equipment – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets – Effect of Goodwill When Grouping</p> <p><b>ASC 360-10-35-30</b> Assets – Property, Plant and Equipment – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets –Estimates of Future Cash Flows used to Test a Long-Lived Asset for Recoverability</p> <p><b>ASC 360-10-35-31</b> Assets – Property, Plant and Equipment – Subsequent Measurement – Impairment or Disposal of Long-Lived Assets –Estimates of Future Cash Flows used to Test a Long-Lived Asset for Recoverability</p>	<p>A climate strategy, market trends (e.g., the growth of the market for electric vehicles) or anticipated policy actions or other governmental interventions may require shortening the estimated useful life of a long-lived asset. If so, estimates of future cash flows for purposes of testing the carrying value of the asset must be for the shortened useful life. Also, if determination of the useful life of an asset triggers an ARO (or increases an ARO), the new value of the ARO must be added to the carrying value of the asset before testing for impairment. In such a circumstance, there may be a greater risk of impairment, due to a shorter period of estimated future cash flows compared to a higher total carrying amount (including the ARO) to be recovered.</p>

## Key Area: Useful Life of an Asset

U.S. GAAP –Accounting Standards Selected Codification Topics	Author’s Commentary
<p><b>ASC Master Glossary – Useful Life</b></p> <p><b>ASC 360-30-35-3</b> Assets – Property, Plant and Equipment—Extractive Activities— Oil and Gas—Subsequent Measurement— Depreciation, Depletion, and Amortization</p>	<p>The reported estimated useful lives and residual salvage values of companies’ assets should explicitly take into account any announced corporate climate strategy, future policy actions and other governmental action to limit temperature rise. Companies should also provide clear disclosure of the sensitivity of future cash flows to near term changes in assumptions underlying those estimates.</p>

## Key Area: Asset Retirement Obligations

U.S. GAAP – Accounting Standards Selected Codification Topics	Author’s Commentary
<p>Liabilities – Asset Retirement Obligations – Recognition – Fair Value is Reasonably Estimated</p> <p><b>ASC 410-20-25-10 </b> Liabilities – Asset Retirement Obligations – Recognition – Obligations with Uncertainty in Timing or Method of Settlement</p> <p><b>ASC 410-20-35- General Note</b> Liabilities – Asset Retirement Obligations— Subsequent Measurement—</p> <p><b>ASC 410-20 -35-8</b> Liabilities – Asset Retirement Obligations— Subsequent Measurement— Change in Estimate</p>	<p>In the past, companies have considered many midstream and downstream assets to have indeterminate asset lives. New climate strategies, future policy actions and other governmental intervention, or the energy transition even in the absence of a climate strategy or intervention may dictate that assets previously considered to be perpetual may be abandoned, triggering recognition of an asset retirement obligation.</p> <p>Companies should consider and clearly disclose the changes in the value and use of related assets, the effect of corporate climate strategies and pledges, future policy actions and other governmental action to limit temperature rise on both the timing and amount of AROs. A company’s ARO disclosures should be clear as to the effect of an announced strategy, pledge or other circumstance on the timing and amount of AROs as well as on the impact of asset impairment testing on the amount and timing of AROs.</p>

## Excerpt from Deloitte's audit report on BP plc's financial statements for the period ended December 31, 2020 (provided with Form 20-F).

### 1. Property, plant and equipment (PP&E) assets – Impairment of upstream oil and gas – Notes 1, 4 and 12 to the financial statements

#### Critical Audit Matter Description

The group balance sheet at 31 December 2020 includes PP&E of \$115 billion, of which \$74 billion is oil and gas properties within the upstream segment.

Management's best estimate of oil and gas price assumptions for value-in-use impairment tests were revised downwards during 2020 compared to the prior year assumptions, as set out in Note 1 on page 161. The downward revisions reflect an expectation that the aftermath of the COVID-19 pandemic will accelerate the pace of transition to a lower carbon economy and energy system. Given the significance of these revisions, management tested all upstream CGUs for impairment.

Management recorded \$12.9 billion of pre-tax upstream CGU impairment charges, in large part due to the oil and gas prices revisions detailed above, and \$0.1 billion of pre-tax upstream CGU impairment reversals. Further information has been provided in Note 1 on page 160, Note 4 on page 179 and Note 12 on page 189.

Through our audit risk assessment procedures, we have identified a critical audit matter in respect of PP&E impairment principally due to the following three key management estimates in management's determination of the level of impairment charge and/or reversal to record.

- **Oil and gas prices** - bp's oil and gas price assumptions have a significant impact on many CGU impairment assessments performed across the upstream segment, and are inherently uncertain. As noted above, the estimation of future prices is subject to increased uncertainty given climate change, the global energy transition and the impact of COVID-19. There is a risk that management do not forecast reasonable "best estimate" oil and gas price forecasts when assessing CGUs for impairment, leading to material misstatements. These price assumptions are highly judgmental and are pervasive inputs to most upstream impairment tests, such that any misstatements would also aggregate. There is also a risk that management's oil and gas price related disclosures are not reasonable.
- **Discount rates** - Given the long timeframes involved, certain CGU impairment assessments are sensitive to the discount rate applied. Discount rates should reflect the return required by the market and the risks inherent in the cash flows being discounted. There is a risk that management do not assume reasonable discount rates, adjusted as applicable for country risks and relevant tax rates, leading to material misstatements. Determining a reasonable discount rate is highly judgmental and, consistent with price assumptions above, the discount rate assumption is also a pervasive input across upstream impairment tests, before adjustments for asset specific risks and tax rates, such that any misstatements would also aggregate.
- **Reserves and resources estimates** - A key input to certain CGU impairment assessments is the oil and gas production forecast, which is based on underlying reserves estimates and field specific development assumptions. Certain CGU production forecasts include specific risk adjusted resource volumes, in addition to proved or probable reserves estimates, that are inherently less certain than reserves; and assumptions related to these volumes can be particularly judgemental. There is a risk that material misstatements could arise from unreasonable production forecasts for individually material CGUs and/or from the aggregation of systematic flaws in bp's reserves and resources estimation policies across the segment.

We identified certain individual CGUs with a total carrying value of \$32.1 billion which we determined would be most at risk of material impairment charges or reversals as a result of a plausible change in the key assumptions, particularly oil and gas price and discount rate assumptions.

We also identified CGUs with a further \$16.0 billion of combined carrying value which were less sensitive as they would be potentially at risk, in aggregate, to a material impairment or reversal by a plausible change in some or all of the key assumptions.

Further information regarding these sensitivities is given in Note 1 on page 167.

#### How the Critical Audit Matter was addressed in the Audit

We tested management's key internal controls over the estimation of oil and gas prices, discount rates and reserve and resources estimates, as well as key internal controls over the performance of the impairment assessments where we identified audit risks. In addition, we conducted the following substantive procedures.

##### *Oil and gas prices*

- We independently developed a reasonable range of forecasts based on external data obtained, against which we compared management's oil and gas price assumptions in order to challenge whether they are reasonable.
- In developing this range we obtained a variety of reputable and reliable third party forecasts, peer information and other relevant market data.
- In challenging management's price assumptions, we considered the extent to which they and each of the forecast pricing scenarios obtained from third parties reflect the impact of lower oil and gas demand due to climate change, the energy transition and COVID-19.
- We specifically analysed third party forecasts stated as being, or interpreted by us as being, consistent with achieving the Paris 2°C Goal and considered whether they presented contradictory audit evidence.
- We challenged management's disclosures in Notes 1 and 4 including in relation to the sensitivity of oil and gas price assumptions to reduced demand scenarios whether due to climate change or other reasons.