June 21, 2022

Office of Economic and Risk Analysis
Public Company Accounting Oversight Board
1666 K Street, NW
Washington, DC 20006

Via email to: comments@pcaobus.org

Attn: Carrie von Bose, Senior Financial Economist
Office of Economic and Risk Analysis

Re: Interim Analysis No. 2022-001, Estimates and Specialists Audit Requirements

Dear Ms. Von Bose,

This is a joint letter from Ceres and the Carbon Tracker Initiative (Carbon Tracker). Thank you for this opportunity to provide our experiences with, and comments on the initial impact of, the amended auditing requirements for accounting estimates and the use of the work of specialists as audit evidence.

The Public Company Accounting Oversight Board's (PCAOB) goal in promulgating these new requirements was to promote both audit and reporting quality through consistent, risk-based procedures for auditing accounting estimates. This is immensely important to protect investors, promote trust in corporate reporting, reduce the cost of capital through transparent, reliable reporting, and enhance capital market efficiency. We applaud the PCAOB's initiative to evaluate implementation of its new requirements at this stage.

Carbon Tracker[1] has undertaken a systematic review of (primarily) FY2020[2] and 2021[3] audited corporate financial statements and other reporting by more than 100 companies globally, including many issuers whose auditors are subject to the PCAOB's requirements. The focus of our reviews has been whether there is evidence of consideration of the financial impacts of material climate-related matters.

We have observed some improvements in the rigor and usefulness of disclosure about key accounting estimates, including more robust disclosure about the range of uncertainty surrounding certain long-range significant assumptions through more rigorous sensitivity analyses. We have also observed exemplars of high-quality audit procedures that demonstrate skillful application of professional skepticism to address estimation bias, which we have noted is positively associated with more transparent disclosure.

Yet, on the whole, many companies still do not even disclose the significant assumptions underlying their financial statements, which hinders investors' abilities to judge the content and quality of the estimates that underlie companies' financial reports. This problem is compounded by our finding that many auditors continue to place heavy reliance on management-retained specialists to develop and test those assumptions and estimates, even in the areas of greatest identified audit risk, such as impairment testing in connection with

[1] In collaboration with the Climate Accounting and Audit Project (CAAP), a team of independent accounting and finance experts drawn from the investor community and commissioned by the Principles for Responsible Investment (PRI).
[2] Results of the 2020 reviews can be found in "Flying blind, The glaring absence of climate-risks in financial reporting" (Flying Blind) at https://carbontracker.org/reports/flying-blind-the-glaring-absence-of-climate-risks-in-financial-reporting/.
[3] Analyses are ongoing with results to be published in September 2022.

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long-lived assets that may be significantly affected by disruption in the company's industry or to the company's business model.

Section I of this letter provides background on the work and expertise of Ceres and Carbon Tracker. Section II discusses the underlying goals of the rulemaking changes under review and the most salient changes and expected impacts. Section III provides our findings and insights, based on extensive review of corporate financial and other reports. Section IV provides further detailed analysis of the implementation of intended changes.

I. Background on Ceres and Carbon Tracker and Our Disclosure Expertise

Ceres

Ceres is a nonprofit organization that works with leading global investors and companies on addressing the economic impact of climate change. From our founding in 1989, disclosure has been at the core of our work. In 2002, we launched the Global Reporting Initiative (GRI). Ceres also leads the Investor Network on Climate Risk and Sustainability, which comprises almost 200 investors responsible for over $60 trillion in assets under management (AUM). Through this Network, we identify and facilitate important improvements in the disclosure and management of climate risk, among other financial risks[4].

Ceres is a founding partner of several initiatives in which accounting for the effects of climate change disclosure is a core element. These include the former Climate Disclosure Standards Board (CDSB)[5] which developed a framework for reporting climate information with the same rigor as financial information. We co-founded Climate Action 100+ (CA100+), an investor-led initiative with 700 investors, responsible for $68 trillion in AUM which works to ensure the world's largest corporate greenhouse gas emitters improve climate governance, cut greenhouse gas (GHG) emissions and strengthen climate-related financial disclosures. Ceres is also a founding partner of the Investor Agenda, a leadership agenda focused on accelerating investor action toward an economy based on net-zero emissions, and the Net Zero Asset Managers Initiative, a group of 200 firms representing $60 trillion in AUM that are setting 2050 decarbonization commitments and interim targets. In 2019, we established the Ceres Accelerator for Sustainable Capital Markets (the Accelerator) to transform the practices and policies that govern capital markets in order to reduce the worst financial impacts of the climate crisis. The Accelerator spurs capital market influencers to act on climate change as a systemic financial risk—driving the systems change needed to achieve a just and sustainable future and a net zero emissions economy.

Carbon Tracker

Carbon Tracker is an independent financial think-tank that carries out in-depth analysis on the impact of the energy transition on both capital markets and investments in high-cost, carbon- intensive fossil fuels.

As part of our mission to facilitate investor understanding and improve transparency of climate-related risks, we and the CAAP team have reviewed the annual reports for fiscal years ending on or before December 31, 2020, from 107 companies (including 19 domiciled in the U.S. and over 20 foreign private issuers or FPIs), to assess whether companies are integrating the impacts of climate-related risks into the financial statements and disclosing evidence of that accordingly. These companies operate primarily in the energy, transport and industrials sectors. In September 2021, Carbon Tracker released a report entitled *Flying Blind*, which detailed the findings. We are now updating that analysis by reviewing the annual reports for fiscal years ending on or before December 31, 2021, for nearly 170 companies that are the targets of engagement of the CA100+. Some examples from this work have been provided herein.

Carbon Tracker is also one of four data providers to the CA100+ initiative. As part of this, Carbon Tracker and CAAP have worked closely with Ceres and investor members of CA100+ on the new accounting and

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[4] *For example, a petition from Ceres and our investor partners led to the SEC's 2010 guidance on mandatory climate disclosure under Regulation S-K.*
[5] *In November 2021, the CDSB merged into the new International Sustainability Standards Board formed by the IFRS Foundation.*

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auditing alignment assessment released in March 2022. This assessment examines whether companies demonstrated that they have taken climate-related financial risks into account, in their audited financial statements, as well as whether there is any indication that auditors have taken such risks into account in their audits.

Through this work, Ceres and Carbon Tracker have developed a deep understanding of the significant gaps, weaknesses and inconsistencies in application of the current corporate disclosure regime, and the challenges faced by investors in making investment decisions based on frequently fragmented and incomparable data. Despite the accounting and audit requirements, corporate disclosures often do not adequately address systemic financial climate risks that issuers face, concealing major vulnerabilities in the global financial system and preventing effective risk management and efficient capital allocation.

II. The Auditing Standards Under Review

The PCAOB adopted AS 2501, ***Auditing Accounting Estimates, Including Fair Value Measurements***, (AS 2501) and related amendments to PCAOB auditing standards on December 20, 2018. The stated purpose of this rulemaking was to strengthen and enhance the requirements for auditing accounting estimates, including fair value measurements, by replacing three then-existing standards with a single standard that sets forth a uniform, risk-based approach. At its core, AS 2501 requires auditors to "obtain an understanding of management's analysis of critical accounting estimates and take that understanding into account when evaluating the reasonableness of significant assumptions and potential management bias," no matter the nature of the estimate or risk. The need for the PCAOB's new requirements was particularly compelling given that "the PCAOB ha[d] historically observed numerous deficiencies in auditing accounting estimates, . . . [i]nspection observations . . .[and] raise[d] concerns about auditors' application of professional skepticism, including addressing potential management bias, in auditing accounting estimates."[6]

AS 2501 was thus intended to establish a uniform approach for auditing accounting estimates in order to "increase and make more uniform the quality of the information presented in the financial statements."[7] At the time of adoption, the PCAOB said:

> From a capital market perspective, an increase in the information quality of companies' financial statements resulting from improved audit quality can reduce the non-diversifiable risk to investors and generally should result in investment decisions by investors that more accurately reflect the financial position and operating results of each company, increasing the efficiency of capital allocation decisions.[8]

The PCAOB also expressed the hope that "having a uniform set of requirements might also enhance the audit committee's understanding of the auditor's responsibilities and therefore, potentially facilitate communications between the audit committee and the auditor."[9] The PCAOB also said that "a single standard will facilitate the development of timely guidance for specific issues when needed."[10]

Closely related, on the same date the PCAOB also adopted amendments to its auditing standards on using the work of specialists (i.e., a person or firm possessing special skill or knowledge in a particular field other than accounting or auditing). Our comments focus on the amendments of auditing standards AS 1105, ***Audit Evidence***, and AS 1201, ***Supervision of the Audit Engagement***, which were intended to strengthen requirements

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[6] *See PCAOB Release No. 2018-005 (Dec. 20, 2018), at 8. Specifically, the PCAOB's release on the adoption of its new standard said: PCAOB inspections staff has observed audit deficiencies in issuer audits related to a variety of accounting estimates, including revenue-related estimates and reserves, the allowance for loan losses, the fair value of financial instruments, the valuation of assets and liabilities acquired in a business combination, goodwill and long-lived asset impairments, inventory valuation allowances, and equity-related transactions. Examples of such deficiencies include failures to (1) sufficiently test the accuracy and completeness of company data used in fair value measurements or other estimates, (2) evaluate the reasonableness of significant assumptions used by management, and (3) understand information provided by third-party pricing sources.*

[7] *Id. at 43.*

[8] *Id. at 40-41.*

[9] *Id.*

[10] *Id. at 43.*

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for evaluating the work of a company's specialist, whether employed or engaged by the company, and apply a risk-based supervisory approach to both auditor-employed and auditor-engaged specialists. These amendments are risk-based, so that the auditor's effort to evaluate a specialist's work is commensurate with (1) the significance of the specialist's work to the auditor's conclusion regarding the relevant assertion; (2) the risk of material misstatement of the relevant assertion; and (3) the knowledge, skill, and ability of the specialist.

We agree with the PCAOB that a number of factors, including SEC and PCAOB enforcement actions, "indicate that improvements to PCAOB standards for using the work of a company's specialists [were] needed," and that "increas[ing] auditors' attention to the work of a company's specialists with respect to significant accounts and disclosures will enhance investor protection."[11] We also agree with the PCAOB's intention that investors benefit from "more consistently rigorous practices among auditors when using the work of a company's specialist in their audits, as well as a more consistent approach to the supervision of auditor-employed and auditor-engaged specialists."[12] We also agree with the PCAOB's intention that the amendments result in audit procedures that "increase the quality of the information provided in a company's financial statements and decrease the cost of capital for that company."

The new requirements for auditing accounting estimates and using the work of specialists became effective for audits of fiscal years ending on or after December 15, 2020.

III. Findings and Insights

We have conducted extensive analysis of critical accounting estimates of companies (and their accompanying audit reports) whose business models are affected by climate change, which can include the impacts of the energy transition[13]. In particular, we have closely studied whether companies have disclosed the significant assumptions that form estimates of future cash flows for purposes of (1) establishing the useful life of long-lived property, plant and equipment (PPE) and related depreciation, (2) assessing the carrying value of assets, including evaluating asset impairment, and (3) calculating asset retirement obligations (when applicable), both before and after the implementation date for the new standards (i.e., covering reporting periods ending in 2019, 2020 and 2021).

We have several insights and findings that we believe are relevant to the PCAOB's post-implementation reviews of these standards. Many of these comments also apply to your post-implementation review of AS 3101, *The Auditor's Report*. Our detailed analysis of individual intended changes is below in Section IV. In summary:

1. Evidence of auditor skepticism is clearer when auditors go beyond identifying critical assumptions and explain *how* they challenged them. However, we see very little discussion of how auditors have scrutinized management's assumptions, especially for US domiciled companies.

Nevertheless, on the whole, we did not see a significant improvement in either the relevant financial statement disclosures or the information content of auditor reports, including how auditors have challenged

[11] *PCAOB Release No. 2018-006 (Dec. 20, 2018), at 19*
[12] *Id. at 47*
[13] *For years ended December 31, 2020, see*
Flying blind: The glaring absence of climate risks in financial reporting
https://carbontracker.org/reports/flying-blind-the-glaring-absence-of-climate-risks-in-financial-reporting/
Under The Microscope: Are companies' scenario analyses meeting investors' requirements?
https://carbontracker.org/reports/under-the-microscope/
No Rhyme or Reason – Unreasonable projections in a world confronting climate change
https://carbontracker.org/reports/no-rhyme-or-reason-eia-energy-outlook-coal-companies-risk-disclosure/
Reporting for a Secure Climate: A model disclosure for upstream oil and gas
https://carbontracker.org/reports/reporting-for-a-secure-climate-a-model-disclosure-for-upstream-oil-and-gas/

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management's assumptions, especially for US domiciled companies. Moreover, there was no indication that auditors were challenging companies' decisions not to disclose significant assumptions, even when the auditor refers to significant assumptions as a risk in a Critical Audit Matter (CAM). We also did not find evidence of auditors scrutinizing the reasonableness of those assumptions in the face of climate change or the energy transition.

Overall, more transparency in company and auditor disclosures going forward would be welcomed, especially for US-domiciled companies.

Illustrative example(s):
National Grid: National Grid's auditor, Deloitte, expressed a high level of auditor skepticism, showing that this can be done. In both its ISA and PCAOB audit reports, Deloitte stated that it challenged management judgements, compared management's assumptions to external net zero scenarios and assessed the probability of occurrence of such scenarios. We note that for this matter, Deloitte provided detail on how it evaluated the assumptions and commented on the reasonableness of each relevant estimate. Our research to date has indicated that this level of auditor disclosure and evidence of professional skepticism is rare.

Chevron: In contrast, our assessments of Chevron Corporation's (Chevron's) financial statements for the years ended December 31, 2021, and 2020 found that Its auditor, PricewaterhouseCoopers (PwC), did not discuss whether its audit testing took climate change or the energy transition into account: "[a]s disclosed by management, variables impacting the Company's estimated volumes of crude oil and natural gas reserves include…. commodity prices, and development, production and carbon costs"[14]. This lack of discussion of how they scrutinized the energy transition risks is notable since PwC identified these assumptions as relevant to the single CAM in its audit report.

2. Where assumptions are identified as critical, longstanding SEC guidance suggests they should be disclosed by management. In many cases auditors of US domiciled companies have not insisted on this.

SEC guidance has indicated that critical assumptions should be disclosed. While these are management assumptions and management's obligation to disclose, auditors play a role in determining when such disclosures should be required. Our review of annual reports for the years 2019-2021 suggest that such disclosures occurred occasionally before the new requirements (i.e., in financial statements of periods ending before December 15, 2020) but appeared to occur slightly afterwards. However, as we note in Flying Blind, a significant number of companies fail to disclose assumptions that underpin the financial statements—not even when the assumptions are identified in CAMs.

Convergent with our first finding, we have observed a correlation between (a) a lack of discussion of how auditors have challenged and scrutinized management's assumptions and (b) management's disclosure of those assumptions. That is to say, where assumptions are not disclosed, disclosure of how those assumptions have been scrutinized is also lacking.

By contrast, we noted that ***auditor skepticism*** tended to be more evident (via discussion of procedures performed in audit reports such as challenging management's judgements) when companies provided more robust and transparent disclosure about the quantitative assumptions that underlie audited financial statements.

Illustrative example(s):
National Grid: For the years ended March 31, 2022, and 2021, National Grid, an FPI, provided detail on its assumptions and estimates, including remaining estimated useful lives of assets, and gross amounts, timing and discount rates used for asset retirement obligations. The disclosure of these assumptions correlates with the skepticism displayed by Deloitte.
Chevron: We observed that none of the quantitative estimates and assumptions identified by the

[14] *Chevron Corporation 2021 Form10-K, p. 50.*

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auditor as critical were disclosed by Chevron, leaving it unclear whether or how Chevron considered the potential impacts of climate change/the energy transition, especially when estimating remaining asset lives, asset retirement obligations or asset impairments.

3. We see a divergence in practice between US and EU domiciled entities.

We see a divergence in practice between US and non-US domiciled audit firms when using PCAOB standards, with reports by non-U.S. firms being more informative. We also see even more pronounced differences between PCAOB and ISA audit reports, in ways that are not explainable by differences in the standards. For example, many PCAOB audit reports drop K/CAMs included in ISA audit reports on the same financial statements, even though the KAM appears to satisfy the definition of CAMs because it (1) relates to accounts or disclosures that are material to the financial statements, (2) involved especially challenging, subjective, or complex auditor judgment, and (3) presumably was discussed with the audit committee.

In our review of FY2021and FY2020 financial statements, FPIs tended to provide more robust financial disclosures, such as the significant relevant quantitative assumptions underlying their audited financial statements, than US-domiciled companies.

Illustrative example(s):
Oil and gas companies: US auditors do not seem to be enforcing rigorous disclosure about assumptions and estimates used, but instead appear to be affording their clients ample discretion to choose whether or not to disclose the basis for and the impact of risks on such inputs. For example, FPIs such as bp, Shell,[15] Eni and Equinor provided robust disclosures of the significant inputs that they used in preparing their financial statements (including things like future commodity price expectations), while Chevron, Exxon, ConocoPhillips did not. Other US companies, such as Devon and Occidental Petroleum, only provided some of the assumptions used.
Moreover, none of the US domiciled companies listed above addressed the impact of climate change or the energy transition on the company's estimates and assumptions; their auditors did not discuss consideration of climate impacts in their audit approach. This is despite each company acknowledging the existence of risks related to the energy transition. The lack of assumptions disclosure by the companies suggests that the auditors did not require the company to disclose those assumptions, despite long-standing SEC guidance for these disclosures.

We have also observed differences between the PCAOB-based and ISA-based audit reports of the same companies FPIs.

Illustrative example(s):

Eni SpA (Eni): This includes some surprising divergence in practice, by the same company's annual filings under ISA and PCAOB standards for FY 2021, both audited by PwC. For example, we noted that the PCAOB-based audit report removes any reference on climate-change within the audit matters, despite the ISA-based report providing such information.

The PCAOB may consider asking audit committees whose auditors dropped KAMs, or provided less detail on climate-related matters, in their PCAOB audit reports how the audit committee got comfortable with this change.

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[15] An example of the greater detail provided is Shell's financial statements for the year ended December 31, 2021, EY used external forecasts and scenarios to test Shell's climate-related assumptions and estimates (e.g., forecasted commodity prices) and disclosed the quantitative assumptions that it used for such tests. EY also performed multiple sensitivity analyses, including assessing the impact of the International Energy Agency's Net Zero by 2050 (IEA NZE) carbon price projections on Shell's forecasted cashflows. This level of detail would be unusual in US-domiciled oil and gas company financial statements.

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4. Even though companies may be differently situated as to climate risks, companies in the same sector face similar challenges. However, we do not see greater uniformity in how those companies have considered the risks (other than ignoring them).

While there have been some improvements in auditors' disclosures about their assessments of the quality of financial information provided in FY2021 annual reports, we continue to see heterogeneity in auditors' approaches to auditing accounting estimates. As noted in the prior example, only a few US-domiciled companies identify the forward-looking commodity prices used in impairment testing (Devon and Occidental), while many of their US-based peers have excluded this information (Exxon and Chevron). This is surprising since long-term commodity prices are widely believed to reflect the supply and demand and is set by the markets. Any concerns with those prices would therefore impact similarly situated issuers.

5. Overall, there are observable inconsistencies between management risk factor identification and evidence of consideration of those risks in the financial statements by both management and auditors.

Illustrative example(s):
General Electric: For the year ended December 31, 2020, General Electric (GE) reported that it was committed to new climate and emissions targets. Despite this, the company did not provide any quantitative information about the impact of its targets on its assumptions and estimates (e.g., those used in impairment testing), despite being a global manufacturer of gas-fired turbines. GE also did not provide any sensitivity analyses of changes to those inputs on the relevant assets or liabilities.

Royal Dutch Shell: In comparison, FPI Shell provided more information, including details on forecasted commodity prices and carbon cost estimates used for impairment testing. Additionally, Shell disclosed sensitivity analyses that it conducted on its existing Upstream and Integrated Gas assets, where it tested its commodity price assumptions against four different commodity price scenarios.

6. Auditors need to understand and scrutinize the work of specialists and can also employ specialists themselves. Though not required, we see little evidence of the use of auditor specialists. Furthermore, disclosure of the scrutiny applied to management specialists sometimes suggested a less than robust approach.

Some auditors continue to rely on management-hired specialists when assessing the key assumptions in the CAMs. While the use of independent specialists is not required by the PCAOB, specialists employed or directly hired by the issuer may lack the requisite independence to ensure that their estimates are fully free from bias.

While the use of external and independent specialists was found in a small number of audit reports, by and large our research showed that for the companies that we reviewed, auditors of US domiciled companies appeared to rely on either an issuer's in-house specialist or the work of issuer-selected specialists. We did not note increased rigor in the use of such specialists. It is of concern when auditors use management hired specialists to assess assumptions that could be materially impacted by climate change or the energy transition, since those specialists may not fully consider the impact of disruption on assumptions and may be liable to management bias.

Illustrative example(s)
Exxon: When assessing Exxon's FY2021 financial statements, PwC identified "*The Impact of Proved Oil and Natural Gas Reserves on Upstream Property, Plant and Equipment, Net*" as the CAM. It used the management specialists' work to assess the appropriateness of management estimates. Additionally, PwC noted that it assessed the qualifications of the specialists, the relationship they had with the company and the methodology and results provided by the specialists. We noted that scrutinizing the specialists in this way may go some way in checking for management bias and assessing the independence of the specialists.

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However, similar to many other PCAOB audit reports that we assessed, the auditor did not use independent external specialists. In a changing environment, given the disruption of climate change and the energy transition, we question whether such continued, heavy use of company specialists is appropriate.

Devon: KPMG's audit of Devon's FY2021 financial statements demonstrated better practice, as they involved valuation professionals with specialized skills and knowledge. These specialists helped the auditor to evaluate the forecasted commodity price assumptions Devon used against an "independently developed range of forward price estimates from analysts and industry sources."[16]

Following the general pattern regarding auditor skepticism, and auditor insistence on management disclosure critical assumptions, we found that many auditors of non-US domiciled companies use such experts. For example, the auditor of FPI Equinor, EY, involved "climate change and sustainability specialists" when assessing climate-related matters, determining the appropriateness of future CO_2 tax assumptions, and evaluating management's sensitivity analysis.

IV. Detailed Analysis

Our detailed comments are organized around what we deemed to be the most significant intended changes in practice based on the SEC's approval[17] of the PCAOB's new requirements as follows:

SEC's Intended Change in Practice	Our Findings
Prompt auditors to devote greater attention to addressing potential management bias in accounting estimates, as part of applying professional skepticism	Descriptions of auditor scrutiny evidence some, but still insufficient, attention to bias, and quantitative disclosure of testing performed is insufficient to demonstrate robust scrutiny.
Require a discussion among the key audit engagement team members of how the financial statements could be manipulated through management bias in accounting estimates in significant accounts and disclosures	Based on the incidence of reliance on company specialists, as evidenced in critical audit matters, we question whether the specialists used to both develop and test key assumptions could have participated in such a discussion. We suggest the PCAOB clarify its intentions in guidance.
Emphasize certain key requirements to focus auditors on their obligations, when evaluating audit results, to exercise professional skepticism, including evaluating whether management bias exists	We have observed evidence of auditor skepticism in the language used in audit reports on financial statements that provide robust disclosure of the assumptions that underlie accounting estimates, including sensitivity analyses, but the best PCAOB audit report examples lie with FPIs. Most audit reports for US domiciled companies that we have examined do not include such language. As an example, the PCAOB audit report on National Grid's March 31, 2021, financial statements expressly discussed and expressed skepticism about the company's assumptions underlying its estimates of the useful lives of certain assets and pointed readers to the company's sensitivity analysis. This was helpful disclosure that enhanced readers' understanding of the company's financial results and position.
Remind auditors that audit evidence includes both information that supports and corroborates the company's assertions regarding the financial statements and information that contradicts such assertions	We very rarely see auditors contradicting assertions made by management, despite substantial uncertainty about energy-transition related outcomes, suggesting that this reminder has not been heeded.

[16] *Devon Energy Corporation 2021 Form-10K, p46*

[17] *SEC Release No. 34-86269, Order Granting Approval of Auditing Standard 2501, Auditing Accounting Estimates, Including Fair Value Measurements, and Related Amendments to PCAOB Auditing Standards.*

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SEC's Intended Change in Practice	Our Findings
Require the auditor to identify significant assumptions used by the company and describe matters the auditor should take into account when identifying those assumptions	Although many critical audit matters refer to the existence of significant assumptions, auditors rarely identify the quantitative assumptions that have not been disclosed by the company. For the most part, audit reports both before and after the amendments do little more than acknowledge that (undisclosed) significant assumptions exist. We believe additional guidance to auditors on how to implement the requirements is necessary.
Provide examples of significant assumptions (important to the recognition or measurement of the accounting estimate), such as assumptions that are susceptible to manipulation or bias	We have observed several audit reports that discuss in detail the ways in which climate change and the energy transition can affect the significant assumptions that underlie companies' financial statements. For example, KPMG's audit report on Rio Tinto's FY2021 financials is a good example of demonstration of an auditor's assessment of the impacts of climate-related matters. The audit report identified the same three Key Audit Matters (KAMs) for FY2021 and FY2020 (PPE impairment; closure provisions; and uncertain tax positions). The KAM on impairment is narrowly focused on the testing of two specific Cash Generating Units (CGUs), and touches on the impacts of climate change. KPMG used its own sustainability and environmental specialists when testing the KAMs on impairment and closure provisions, respectively. For impairment, the focus was to assist in understanding Rio Tinto's approach to incorporating the impacts of climate change into its pricing process (i.e., the central case assumptions used widely), and a new reference to their assistance in comparing carbon pricing assumptions to publicly available information. Additionally, outside of the KAMs, KPMG indicated that it challenged management's assessment that its stated climate change strategy did not result in any impairment triggers or reassessment of useful economic lives for carbon intensive assets, taking into account the remaining lives of relevant assets, and headroom on CGUs that could be most impacted by climate change. We believe auditors would benefit from the PCAOB issuing guidance similar to the statements made in these exemplary audit reports.
Emphasize requirements for the auditor to evaluate whether the company has a reasonable basis for the significant assumptions used and, when applicable, for its selection of assumptions from a range of potential assumptions	We have observed a handful of audit reports that discuss selection of assumptions from a range of potential assumptions. For example, Shell's FY2021 audit report demonstrated this. When assessing the CAM related to the impairment of PPE, EY compared the forecasted oil and gas prices and carbon prices that Shell used to prices in external scenarios such as the IEA's NZE and APS (Announced Pledges) scenarios. Based on these evaluations, EY concluded with key observations and indicated the reasonableness of the assumptions and estimates.

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SEC's Intended Change in Practice	Our Findings
Explicitly require the auditor, when developing an independent expectation of an accounting estimate, to have a reasonable basis for the assumptions and the method he or she uses	For the most part, we have observed that auditors depend on company specialists to develop significant assumptions. To test reasonableness of assumptions used, some auditors of US companies have relied on forward prices which, some experts note, are only marginally more predictive than a "random walk".[18]. We would note that forward prices will vary greatly from scenario modelling exercises, by both companies and third-parties, which model energy transition developments. An exclusive reliance on forward strip prices may not reflect a full range of outcomes. An example is Devon, which used NYMEX forward strip prices to estimate forecasted cash flows in its test for impairment of its oil and gas assets in FY2020. The auditor, KPMG, used "valuation professionals" to evaluate these commodity price assumptions against a range of forward price assumptions from analysts and industry sources.
Strengthen requirements for evaluating whether data was appropriately used by a company that build on requirements in the fair value standard, and include a new requirement for evaluating whether a company's change in the source of data is appropriate	We have not observed disclosures that address this issue explicitly. The example with respect to the use of a range of forward strip prices, but no use of scenario modelling, speaks directly to whether source data used for financial reporting is appropriate. We suggest the PCAOB provide further guidance on use of source data in a changing environment.
Require the auditor to take into account certain factors in determining whether significant assumptions that are based on the company's intent and ability to carry out a particular course of action are reasonable The new requirements incorporated specific provisions relating to accounting estimates in AS 2110, *Identifying and Assessing Risk of Material Misstatement*, and AS 2301, *The Auditor's Responses to the Risks of Material Misstatement*, to inform the necessary procedures for auditing accounting estimates: o Amended AS 2110 to include risk factors specific to identifying significant accounts and disclosures involving accounting estimates; o Aligned the scope of the new requirements with AS 2110 to apply to accounting estimates in significant accounts and disclosures; o Amended AS 2110 to set forth requirements for obtaining an understanding of the company's process for determining accounting estimates; and o Required auditors to respond to significantly differing risks of material misstatement in the components of accounting estimates, consistent with AS 2110.	We believe there are substantial shortcomings here, as exemplified by climate-related risks and the apparent lack of consistency between companies' climate narratives and the assumptions and estimates underlying their financials. Despite, for example, acknowledgement of goals to limit global emissions in the risk factor disclosure of many reports, individual company climate-related targets, there is very little evidence that these trends and uncertainties are being taken into account by auditors as they evaluate estimates and assumptions for reasonableness.

[18] See, e.g., https://www.forbes.com/sites/uhenergy/2016/01/19/why-are-oil-prices-so-hard-to-forecast/?sh=58b196e02740

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SEC's Intended Change in Practice	Our Findings
Further integrate requirements with the Board's risk assessment standards to focus auditors on estimates with greater risk of material misstatement.	We have observed that even when auditors have identified reserves estimation as a critical audit matter and potentially at the highest risk of misstatement, they have not questioned whether management's use of internal specialists was appropriate.
Require the auditor, when identifying significant assumptions, to take into account the nature of the accounting estimate, including related risk factors, the applicable financial reporting framework, and the auditor's understanding of the company's process for developing the estimate	Nearly every SEC filing that we reviewed discussed climate-related risks in risk factor disclosures; many of those referenced the potential for financial statement impacts. However, for US domiciled companies we did not generally see auditors discuss how they have considered these issues in their audits. For example, in its risk factor disclosure, Chevron identified the potential for the acceleration of economic end-of-life or impairment for certain assets because of efforts to achieve climate-related initiatives. However, the auditor did not appear to assess such risks in its audit of Chevron's FY2021 financial statements.
Add a note to AS 2301 providing that for certain estimates involving complex models or processes, it might be impossible to design effective substantive tests that, by themselves, would provide sufficient appropriate evidence regarding the assertions	Many companies claim to use complex models to assess the impact of climate change and the energy transition on financial assumptions. Those models are often discussed, at a high level, in companies' voluntary climate reports. It is not always clear whether auditors consider those models in auditing the financial statements. It is also unclear whether auditors consider the proliferation of energy transition-related scenario and sensitivity analysis. The PCAOB should provide guidance to ensure that auditors become aware of models of financial performance that companies may use in other reports, to ensure consistency. Where those models are driven by one or several key variables, those variables, and the values used in the model, should be disclosed.

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Thank you for the opportunity to respond to Interim Analysis No. 2022-001 on the PCAOB's new Estimates and Specialists Audit Requirements. We would welcome an opportunity to meet with you and your colleagues to further discuss these important issues. Best wishes for your important work.

Sincerely,

Steven Rothstein

Steven Rothstein
Managing Director
Ceres Accelerator for Sustainable Capital Markets

Robert Schuwerk
Executive Director
Carbon Tracker Initiative, North America

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2nd floor, 40 Bermondsey Street, SE1 3UD London - UK, http://www.carbontracker.org