Accounting for Climate Risk

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Abstract

Across both the public and private sectors, there is substantial momentum to address climate change and incorporate climate risk assessment into asset values. Emission reduction objectives under the Paris Climate Agreement, along with net-zero goals set by several governments and companies have prompted an evaluation of how to track the realization and impacts of these commitments. Companies in emissions intensive industries, like oil and gas, are particularly sensitive to these developments and have incentives to maximize short-term profits. Ensuring congruence between these climate commitments and the effect of the energy transition on a company's financial condition poses difficult challenges for the regulation of public financial filings. While most of the conversation has focused on disclosure, particularly of the qualitative sort, this Note argues that financial accounting and auditing standards, especially those governing management estimates and assumptions, play a crucial role in ensuring that financial markets accurately incorporate climate risk. Focusing on the oil and gas industry, this Note will consider revisions to both existing financial accounting and auditing standards to reduce management discretion and more accurately reflect climate risk in public financial filings.

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I. Introduction

Commitments to address climate change have become increasingly prevalent. At the international level, over 190 countries have committed to limit global warming below 2°C with the 2015 Paris Climate Agreement and to continue to address climate change and its impacts by means of the United Nations Sustainable

Development Goals.[2] The United States recently rejoined the Paris Climate Agreement and set a goal of achieving a net-zero emission economy by 2050[3] joining, as of April 2021, 43 other countries and the European Union with the same goal.[4] Further, the Federal Reserve has acknowledged that climate change poses a material risk to the financial system and joined the Network for Greening the Financial System to address it.[5]

Beyond the government activity, climate commitments are in vogue in the private sector as well, with a new company announcing a net-zero strategy seemingly every day. These commitments have spanned multiple industries,[6] including

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[2] Paris Agreement art. 2, Nov. 4, 2016 https://unfccc.int/sites/default/files/english_paris_agreement.pdf [perma.cc/7S26-HWRU] (noting that sustainable development will help to eradicate poverty and "ensure environmental integrity and transparency."); *Goal 13: Take urgent action to combat climate change and its impacts*, SDGS.UN.ORG, https://sdgs.un.org/goals/goal13 [perma.cc/WL5J-2TWW] (last visited May 22, 2021) (including strengthening resilience and adapting capacity to climate-related hazards and natural disasters in all nations)

[3] *Executive Order on Tackling the Climate Crisis at Home and Abroad*, WHITEHOUSE.GOV, https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/ [perma.cc/2RLQ-K5W7]

[4] INT'L ENERGY AGENCY, NET ZERO BY 2050: A ROADMAP FOR THE GLOBAL ENERGY SECTOR 32 (2021), https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf [perma.cc/DMR6-RGWY] (stating that the number of countries committed to net-zero is large, but it must grow in order to reach the 1.5 degree Celsius goal).

[5] Sarah O'Brien, *Federal Reserve joins global group focused on fighting climate change,* CNBC (Dec. 16, 2020), https://www.cnbc.com/2020/12/16/fed-makes-move-that-signals-growing-focus-on-climate-change-risk.html [perma.cc/X65Y-UBXW]

[6] *See, e.g.,* Neal E. Boudette and Coral Davenport, *G.M. Will Sell Only Zero-Emission Vehicles by 2035*, N.Y. TIMES, (Jan. 28, 2021), https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html (discussing G.M.'s commitment to only sell net-zero emission vehicles by 2035 to contribute to the company's 2040 carbon neutrality goa,). Press Release, American Airlines, American Airlines Publishes 2019-2020 ESG Report (Oct. 15, 2020), https://news.aa.com/news/news-details/2020/American-Airlines-Publishes-2

companies in the most greenhouse gas-intensive industries.[7] The investing community has also pressed companies to be more transparent about how climate change affects their businesses. In addition to announcing BlackRock's efforts to achieve net-zero emissions, BlackRock CEO Larry Fink requested that companies use existing voluntary climate disclosure frameworks to examine "how their business model will be compatible with a net zero economy."[8] BlackRock has also vowed to support more shareholder climate resolutions,[9] which shareholders have both increasingly proposed and approved.[10]

019-2020-ESG-Report-CORP-OTH-10/default.aspx [perma.cc/S8NA-LQ8M] (announcing goal of "net zero carbon emissions by 2050"); Press Release, BP, BP sets ambition for net zero by 2050, fundamentally changing organisation to deliver (Feb. 12, 2020), https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bernard-looney-announces-new-ambition-for-bp.html [perma.cc/9WRA-4F8N].

[7] *Sources of Greenhouse Gas Emissions*, EPA.GOV, https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions [perma.cc/JDG3-NMU8] (last visited May 22, 2021) ("[T]he largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation.").

[8] *Larry Fink's 2021 letter to CEOs*, BLACKROCK.COM, https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter [perma.cc/PWJ6-85CL] ("we are asking companies to disclose a plan for how their business model will be compatible with a net zero economy – that is, one where global warming is limited to well below 2ºC, consistent with a global aspiration of net zero greenhouse gas emissions by 2050. We are asking you to disclose how this plan is incorporated into your long-term strategy and reviewed by your board of directors.").

[9] Attracta Mooney, *BlackRock vows to back more shareholder votes on climate change*, FIN. TIMES (Dec. 10, 2020), https://www.ft.com/content/d47a23bb-5c50-4aa6-adde-de0113395827 (suggesting that the institutional investor's dedication to combatting climate change is in recognition of the large financial risks that the effects of climate change may impose on financial institutions and corporations).

[10] Mindy Lubber, *Why This Proxy Season Is A Record Breaker For Climate Proposals*, FORBES (May 14, 2021), https://www.forbes.com/sites/mindylubber/2021/05/14/why-this-proxy-season-is-a-record-breaker-for-climate-proposals/?sh=4e70332954d4 ("During just the past two weeks, shareholders voted in record high numbers for a series of climate-related and environmental shareholder proposals. In some cases, they voted nearly unanimously.").

Carbon Disclosure Project (CDP), a non-profit environmental reporting agency, has also found substantial investor interest in increased environmental disclosure citing that "590 investors with over US$110 trillion in assets and 200+ large purchasers with over US$5.5 trillion in procurement spend are requesting thousands of companies to disclose their environmental data through CDP."[11] All of these efforts demonstrate that there is considerable public and private momentum to address climate change and incorporate climate risk assessment into asset values.

While this momentum and accompanying commitments are crucial to achieving sustainable economies and addressing climate change, tracking the realization and impacts of these commitments poses difficult challenges for the regulation of public financial filings. As Samantha Ross, former chief of staff of the Public Company Accounting Oversight Board (PCAOB), and others have argued, there needs to be congruence between these climate commitments and the effects of those commitments on a company's financial condition, including its balance sheet.[12] There is growing concern that financial statements are not reflecting climate risk. A September 2021 report by the Carbon Tracker Initiative, an independent financial think tank, found that, of the over 100 companies reviewed, "over 70% did not indicate that they had considered climate matters when preparing their 2020 financial

[11] *Why disclose as a company?,* CLIMATE DISCLOSURE PROJECT, https://www.cdp.net/en/companies-discloser [perma.cc/2ED2-SANQ] (last visited Aug. 20, 2021).

[12] *See, e.g.*, SAMANTHA ROSS, CTR. FOR AMER. PROGRESS, THE ROLE OF ACCOUNTING AND AUDITING IN ADDRESSING CLIMATE CHANGE 2 (2021), https://cf.americanprogress.org/wp-content/uploads/2021/02/AccountingAssurance-report.pdf?_ga=2.153072825.121611725.1641409279-438422643.1641409279 [perma.cc/E7QN-RUTC] ("In the past year, pledges from businesses and states to reduce their net carbon emissions to zero by 2050 have doubled. But investors have no systemized way of obtaining reliable information about whether companies are progressing toward their stated climate goals—or what the financial impact of any progress is."); Robert G. Eccles, *A Critical Audit Matter: It's Time for Auditors to Come Clean on Climate Change*, FORBES (Mar. 10, 2021), https://www.forbes.com/sites/bobeccles/2021/03/10/a-critical-audit-matter-its-time-for-auditors-to-come-clean-on-climate-change/ ("Consider the fact that more and more companies are making commitments to how they are going to achieve net-zero status by 2050 in accord with the Paris Agreement. How is that being reflected in their financial statements?").

statements."[13] To address this, significant attention so far has been on disclosure, particularly of the qualitative type, and whether the existing SEC framework can sufficiently incorporate climate risks.

This paper will briefly address this debate, but will argue that financial accounting and audit standards, particularly those governing management estimates and assumptions, play a critical, often underappreciated role in ensuring that corporate valuations accurately incorporate climate risk. Accounting standards need to balance the uncertainty associated with making predictions about the future with enabling management to be willfully blind to future unfavorable economic conditions. Examining relevant standards and cases in the oil and gas industry as an illustration, this Note will argue that some accounting and auditing standards governing management estimates and assumptions allow for too much management discretion, resulting in inadequate incorporation and verification of climate risk.

This Note is organized in the following manner. Part II will define climate risk and describe how its current underestimation affects financial system stability. Part III will examine the recent evolution of public accounting and disclosure standards, including the ongoing rules-based versus principles-based standards debate. Focusing on how management discretion obscures climate risk, this section will argue that climate change and the accompanying business transition presents an existential threat to many oil and gas companies, making the incentive to abuse management discretion high and likely requiring a more rules-based approach. Part IV will examine the role of auditors in challenging management assumptions and estimates as well as present some existing proposals to improve auditing standards. Part V will provide recommendations for the SEC and FASB regarding climate risk guidance, modelled after International Financial Reporting Standards (IFRS) Foundation guidance, or adoption of more detailed sustainability-based accounting and disclosure standards as proposed by the Sustainability Accounting Standards Board (SASB). Part VI provides some concluding remarks.

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[13] BARBARA DAVIDSON & ROB SCHUWERK, CARBON TRACKER INITIATIVE, FLYING BLIND: THE GLARING ABSENCE OF CLIMATE RISKS IN FINANCIAL REPORTING 1 (2021), https://carbontracker.org/reports/flying-blind-the-glaring-absence-of-climate-risks-in-financial-reporting/ [perma.cc/Z6TZ-4LCZ].

II. Climate Risk & Its Implications

Climate risk generally consists of three categories: physical risk, transition risk, and liability risk. Physical risk includes the financial effects of "more frequent or severe weather events like flooding, droughts and storms" such as increased losses suffered by different entities and insurance payouts to compensate.[14]

Transition risk refers to changes in asset values or costs for some sectors of the economy as a result of transitioning to a greener economy.[15] This risk includes the concept of "stranded assets" or assets that "are no longer able to earn an economic return . . . as a result of changes associated with the transition to a low-carbon economy."[16] Changes that may result in stranding include economic changes in relative costs or prices, physical changes due to flood or drought, or regulatory changes.[17] The stranded asset concept is particularly relevant for this Note given its applicability to cash flow analysis used in reserve valuation and impairment in the oil and gas industry.[18] The concept is also especially salient given the International Energy Agency's (IEA) recent report that, under a net-zero emissions scenario by 2050, "no new oil and natural gas fields are required beyond those that have already been approved for development."[19] Further, a 2020 Carbon Tracker Initiative analysis of stranded asset risk in the oil and gas industry found that "$60bn

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[14] *See Climate change: what are the risks to financial stability?,* BANK OF ENGLAND, https://www.bankofengland.co.uk/knowledgebank/climate-change-what-are-the-risks-to-financial-stability [perma.cc/P7CS-DXPQ] (last visited June 6, 2021).

[15] *Id.*

[16] *Stranded Assets,* CARBON TRACKER INITIATIVE (Aug. 23, 2017), https://carbontracker.org/terms/stranded-assets/ [perma.cc/G7UC-S3BH].

[17] *Id.*

[18] *See e.g.,* Jean Eaglesham & Vipal Monga, *Trillions in Assets May Be Left Stranded as Companies Address Climate Change*, WALL ST. J. (Nov. 20, 2021), https://www.wsj.com/articles/trillions-in-assets-may-be-left-stranded-as-companies-address-climate-change-11637416980 (explaining that the concept of stranded assets affects how companies like Chevron calculate the impact of carbon costs on the value of its reserves and how BP plans to move away from carbon).

[19] INT'L ENERGY AGENCY, *supra* note 3, at 160.

capex associated with the 15 largest projects sanctioned in 2019 that aren't competitive on economics under the International Energy Agency's 1.65-1.8°C Sustainable Development Scenario."[20] The degree to which management teams are required to incorporate these considerations into proved reserve valuations will be explored more below.

Lastly, liability risk is the risk from "people or businesses seeking compensation for losses they may have suffered from the physical or transition risks from climate change."[21] This primarily takes the form of organizations or governments suing fossil fuel producers to pay for climate adaption costs.[22] Some legislators have also proposed assessing a fee on the largest emitters based on the amount of greenhouse gases emitted from 2000 to 2019.[23]

Cumulatively, these risks pose a significant threat to the accuracy of financial statements as well as financial stability, requiring immediate attention. Consisting of many estimates and assumptions about the future, financial statements can be directly

[20] *Fault Lines: How diverging oil and gas and company strategies link to stranded asset risk,* CARBON TRACKER INITIATIVE (Oct. 9, 2020), https://carbontracker.org/reports/fault-lines-stranded-asset/ [perma.cc/GE5L-UPY3].

[21] BANK OF ENGLAND, *supra* note 13.

[22] *See e.g.,* Benoit Faucon, et al., *Businesses Brace for More Climate Cases After Ruling on Shell Emissions*, WALL ST. J. (June 6, 2021), https://www.wsj.com/articles/businesses-brace-for-more-climate-cases-after-ruling-on-shell-emissions-11622984649 ("Overall there are around 1,800 lawsuits related to climate world-wide, according to a database produced by Columbia University's Sabin Center for Climate Change Law, most of which are in the U.S . . . Local governments in the U.S. have instead tried to use common-law nuisance claims to force companies to pay the costs of adapting to the effects of climate change. Most of those cases are pending.").

[23] *See* Lisa Friedman, *Democrats Seek $500 Billion in Climate Damages From Big Polluting Companies*, N.Y. TIMES (Aug. 4, 2021), https://www.nytimes.com/2021/08/04/climate/tax-polluting-companies-climate.html ("The draft legislation from Senator Chris Van Hollen of Maryland directs the Treasury Department and the Environmental Protection Agency to identify the companies that released the most greenhouse gases into the atmosphere from 2000 to 2019 and assess a fee based on the amounts they emitted.").

affected by climate risk.[24] For example, reduced demand for oil and gas, the transition to renewable energy, and associated regulations can "shorten the estimated useful lives of productive assets, or change the assumptions used to determine expected future cash flows for impairment testing, resulting in impairments and altering the reported amounts of assets and liabilities."[25] Impairments will be explored in more detail in Part III.

In terms of financial stability, some argue that a "climate bubble" may be forming whereby the market is inadequately incorporating climate risk leading to inflated asset values.[26] While mispricing due to climate risk is evident in the oil and gas industry, assets across the market may similarly be mispriced which, as climate risk legal scholar Professor Madison Condon has argued, results in inefficient allocation of investment capital and may produce significant reductions in economic growth.[27]

A recent survey of finance academics, professionals, public sector regulators, and policy economists found that "[r]espondents are at least 20 times more likely to believe that climate risk is

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[24] DAVIDSON & SCHUWERK, *supra* note 12, at 9 ("Financial reporting is not entirely backwards looking—indeed, many of the numbers in the accounts are based on estimates and assumptions about the future.").

[25] *Id.*

[26] *See, e.g.,* Madison Condon, *Market Myopia's Climate Bubble*, UTAH L. REV. 63, 78 (2022), https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3948128_code1654671.pdf?abstractid=3782675&mirid=1 [perma.cc/9BQT-QFMG] ("An array of financial regulators share the conclusion that financial markets are failing to price climate risks, and this conclusion is supported by the growing number of empirical and model-based studies . . . "); J-F Mercure, et al., *Macroeconomic impact of stranded fossil fuel assets*, 8 NATURE CLIMATE CHANGE 588 (2018), https://www.nature.com/articles/s41558-018-0182-1 ("Our conclusions support the existence of a carbon bubble that, if not deflated early, could lead to a discounted global wealth loss of US $1–4 trillion, a loss comparable to the 2008 financial crisis.").

[27] *See, e.g.,* Condon, *supra*, note 25, at 109–13 (citing Francesco Lamperti, Valentina Bosetti, Andrea Roventini & Massimo Tavoni,*The Public Costs of Climate-Induced Financial Instability*, 9 NATURE CLIMATE CHANGE 829 (2019); Louison Cahen-Fourot, Emanuele Campiglio, Elena Dawkins, Antoine Godin & Eric Kemp-Benedict,Capital *Stranding Cascades: The Impact of Decarbonisation on Productive Asset Utilization*, INST. ECOL. ECON., Paper No.18 (2019) (describing a model of climate change effects on the global banking system can "lead to financial crises amounting to 30% of GDP.").

currently being underestimated by asset markets as opposed to overestimated."[28] In 2016, Mark Carney, former Governor of the Bank of England, warned that "sudden changes in policy, technology and physical risks could prompt a reassessment of asset values as costs and opportunities become apparent."[29] The seriousness of this risk has attracted calls for intervention by U.S. financial regulators[30] and recently received attention from President Biden who directed Treasury Secretary Yellen to "assess climate-related financial risk to the stability of the federal government and the stability of the U.S. financial system."[31] Ensuring climate risk is adequately incorporated into financial markets poses a significant challenge to existing accounting standards and broadly to financial disclosure regulation.

III. Public Company Accounting Standards & Disclosure Framework

Multiple bodies are involved with regulating public company filings. The overarching authority is the Securities and Exchange Commission (SEC) which sets filing requirements primarily under

[28] Johannes Stroebel & Jeffrey Wurgler, *What Do You Think About Climate Finance* (Nat'l Bureau Econ. Rsch., Working Paper No. 29,136, 2021), https://www.nber.org/papers/w29136?utm_campaign=ntwh&utm_medium=email&utm_source=ntwg23 [perma.cc/BYS7-KX8L].

[29] Mark Carney, Gov., Bank of England, Chair, Fin. Stability Bd., Resolving the Climate Paradox, Arthur Burns Memorial Lecture (Sept. 22, 2016), https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/resolving-the-climate-paradox.pdf?la=en&hash=CDFB1640F4635BEC9C08601FF616C842BB975CEC [perma.cc/A5AY-XAUV].

[30] *See, e.g.,* VEENA RAMANI, CERES, ADDRESSING CLIMATE AS A SYSTEMIC RISK (2020) https://www.ceres.org/sites/default/files/reports/2020-06/Financial Regulators FULL FINAL.pdf [perma.cc/7UDM-PZPS] (outlining "more than 50 recommendations for key financial regulators to adopt" in response to the systemic risk of climate change).

[31] Press Release, The White House, Fact Sheet: President Biden Directs Agencies to Analyze and Mitigate the Risk Climate Change Poses to Homeowners and Consumers, Businesses and Workers, and the Financial System and Federal Government Itself (May 20, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/05/20/fact-sheet-president-biden-directs-agencies-to-analyze-and-mitigate-the-risk-climate-change-poses-to-homeowners-and-consumers-businesses-and-workers-and-the-financial-system-and-federal-government/ [perma.cc/5BNM-X7PY].

Regulation S-X[32] and Regulation S-K.[33] The SEC delegated the establishment of accounting standards to the Financial Accounting Standards Board (FASB) which is a private sector not-for-profit organization that establishes financial accounting and reporting standards for public companies embodied in U.S. Generally Accepted Accounting Principles (GAAP).[34]

The organization's mission is "to establish and improve financial accounting and reporting standards to provide useful information to investors and other users of financial reports and educate stakeholders on how to most effectively understand and implement those standards."[35] GAAP standards include general concepts and principles as well as industry-specific rules for financial accounting.[36]

In addition to FASB, there is the PCAOB, which Congress created under the Sarbanes-Oxley Act (SOX) in response to multiple instances of accounting fraud in the early 2000s.[37] The PCAOB is a nonprofit corporation designed to "oversee the audits of public companies in order to protect investors and further the public interest in the preparation of informative, accurate, and independent audit reports."[38] The organization's primary duties include registering public accounting firms, adopting auditing standards, inspecting audits, as well as investigating and discipling firms for violations of laws, rules, or professional standards.[39] Auditing standards include baseline procedures that auditors must follow and, importantly,

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[32] 17 C.F.R. pt. 210.
[33] 17 C.F.R. pt. 229.
[34] *About the FASB*, FIN. ACCT. STANDARDS BD , https://www.fasb.org/facts/ [perma.cc/MA4Q-QNUY] (last visited June 6. 2021) [hereinafter FASB].
[35] *Id.*
[36] *US GAAP: Generally Accepted Accounting Principles*, CFA INSTITUTE, https://www.cfainstitute.org/en/advocacy/issues/gaap#sort=%40pubbrowsedate%20descending [perma.cc/4JSG-P6LS] (last visited Dec. 26, 2021).
[37] RAJ GNANARAJAH, CONG. RSCH. SERV., ACCOUNTING AND AUDITING REGULATORY STRUCTURE: U.S. AND INTERNATIONAL 7 (2017), https://sgp.fas.org/crs/misc/R44894.pdf [perma.cc/WQ69-4C2L] ("[A]s a consequence of financial accounting fraud in the early 2000s, Congress passed the Sarbanes-Oxley Act of 2002. SOX created the Public Company Accounting Oversight Board (PCAOB) . . . ").
[38] *About*, PCAOB, https://pcaobus.org/about [perma.cc/Q4G3-9NJG] (last visited June 6, 2021).
[39] *Id.*

requirements that auditors remain independent.[40] These standards are crucial to ensuring auditors objectively examine and question financial data and assumptions.[41] The SEC oversees the PCAOB including the organization's rules, standards, and budget.[42]

A. Role of Disclosure in Assessing Climate Risk

The existing regulatory framework these organizations have implemented arguably requires climate risk disclosure. Former SEC Chairman Jay Clayton has argued that the existing framework leaves adequate room to incorporate these risks. In particular, the former chairman argued that climate risks should be "disclosure-based and rooted in materiality, including providing investors with insight regarding the issuer's assessment of, and plans for addressing, material risks to its business and operations."[43] Materiality is a crucial concept. In 2018, FASB amended the definition of materiality to an "omission or misstatement… that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item."[44] This definition more closely aligns with the SEC's and Supreme Court's definition of materiality.[45]

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[40] *Auditing Standards*, PCAOB, https://pcaobus.org/oversight/standards/auditing-standards (last visited Feb. 14, 2022) (providing both general and specific PCAOB auditing standards for audits of financial statements for fiscal years ending on or after December 15, 2020.).

[41] *AS 1005: Independence,* PCAOB, https://pcaobus.org/oversight/standards/auditing-standards/details/AS1005 (last visited Feb, 14, 2022) ("[The auditor] must be without bias with respect to the client since otherwise he would lack that impartiality necessary for the dependability of his findings, however excellent his technical proficiency may be.").

[42] GNANARAJAH, *supra* note 36, at 8.

[43] Press Release, Jay Clayton, Chairman, SEC, Statement on Proposed Amendments to Modernize and Enhance Financial Disclosures; Other Ongoing Disclosure Modernization Initiatives; Impact of the Coronavirus; Environmental and Climate-Related Disclosure (Jan. 30, 2020), https://www.sec.gov/news/public-statement/clayton-mda-2020-01-30 [perma.cc/J3AA-Q559].

[44] FIN. ACCT. STANDARDS BD., AMENDMENTS TO STATEMENT OF FINANCIAL ACCOUNTING CONCEPTS NO. 8 at 3 (2018).

[45] *See* Basic Inc. v. Levinson, 485 U.S. 224, 231 (1988) (quoting TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 439 (1976) ("[a]n omitted

However, minimal SEC involvement and requirements regarding climate risk has led to a dispersed disclosure environment with many companies reporting climate risk information in separate unaudited sustainability reports.[46] In 2010, the SEC published guidance about when the impacts of climate change may require disclosure under Regulation S-K and Regulation S-X.[47] The guidance referenced the description of business under Item 101 which requires disclosure of material effects of compliance with different environmental laws.[48]

In addition, the SEC also cited Item 103, requiring disclosure of certain material environmental litigation, Item 503, requiring discussion of the company's most significant risk factors, and Item 303, management's discussion and analysis (MD&A) of financial condition and results of operations, as potential sources of climate risk disclosure.[49]

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fact is material if there is a substantial likelihood that a reasonable shareholder would consider it important in deciding how to vote.")); SEC Staff Accounting Bulletin No. 99 – Materiality, 17 C.F.R. pt. 211 (Aug. 12, 1999), https://www.sec.gov/interps/account/sab99.htm [perma.cc/TZV3-D9TU] ("A matter is 'material' if there is a substantial likelihood that a reasonable person would consider it important.").

[46] ROSS, *supra* note 11, at 14–15 ("Because the standards are voluntary, neither the standard-setting bodies nor investors have much leverage to stop companies from cherry-picking which metrics to use, essentially customizing disclosures and thwarting the goal of comparability…And in any event, they are usually unverified, or only weakly verified, with no connection to the audit of the financial statements.").

[47] SEC. EXCH. COMM'N ("SEC"), COMMISSION GUIDANCE REGARDING DISCLOSURE RELATED TO CLIMATE CHANGE 1 (2010), https://www.sec.gov/rules/interp/2010/33-9106.pdf [perma.cc/2Q7K-WB36] ("The Securities and Exchange Commission ('SEC' or 'Commission') is publishing this interpretive release to provide guidance to public companies regarding the Commission's existing disclosure requirements as they apply to climate change matters.").

[48] *Id.*.

[49] *Id.* at 13–15 ("Instruction 5 to Item 103 provides some specific requirements that apply to disclosure of certain environmental litigation…Item 503(c) of Regulation S-K requires a registrant to provide where appropriate, under the heading 'Risk Factors,' a discussion of the most significant factors that make an investment in the registrant speculative or risky…Item 303 of Regulation S-K requires disclosure known as the Management's Discussion and Analysis of Financial Condition and Results of Operations, or MD&A.").

In the case of Item 303, the guidance stated that "registrants must identify and disclose known trends, events, demands, commitments, and uncertainties that are reasonably likely to have a material effect on financial condition or operating performance."[50] However, the SEC noted that MD&A disclosure requirements are significantly dependent on a registrant's materiality determinations.[51] The guidance provided some examples of when impacts of climate change, depending on the company, may become material, including existing or pending legislation or regulation and changes in the business environment like decreased demand for goods that generate greenhouse gas emissions.[52] This 2010 guidance is the latest SEC climate risk guidance and almost exclusively focuses on qualitative information.

While some believe this framework sufficiently incorporates climate risk, others disagree. In a recent speech, current SEC Commissioner Allison Herren Lee argued that environmental, social, and corporate governance (ESG) matters are not required to be disclosed under current securities laws.[53] While disagreeing that disclosure requirements are limited to only material information, she argued that even if information is material, there still must be a specific duty to require disclosure.[54] Citing political spending as example, Commissioner Lee noted that "companies rarely disclose political spending in reports filed with the SEC for the simple reason that there are no explicit SEC rules requiring such disclosure."[55] Some also argue that the existing SEC disclosure framework is not

[50] *Id.* at 16–7.
[51] *Id.* at 18 ("The nature of certain MD&A disclosure requirements places particular importance on a
registrant's materiality determinations.").
[52] *Id.* at 22–25 (introducing examples of when various climate change impacts might be material).
[53] Allison Herren Lee, Commissioner, SEC, Living in a Material World: Myths and Misconceptions about "Materiality", Keynote Address at the 2021 ESG Disclosure Priorities Event (May 24, 2021), https://www.sec.gov/news/speech/lee-living-material-world-052421 [perma.cc/HF9L-DQZC].
[54] *Id* ("There is no general requirement under the securities laws to reveal all material information. Rather, disclosure is only required when a specific duty to disclose exists.)..
[55] *Id.*

suited for the unique features of climate risk.[56] Further, without additional SEC guidance, there is a lack of standardization whereby companies are left to make judgment calls about which climate risks are material.[57]

There are voluntary climate disclosure frameworks that attempt to fill some of these gaps, but they also have weaknesses. Organizations like the Task Force on Climate-related Financial Disclosure and SASB provide guidance on how to assess different ESG risks.[58] These frameworks arguably still don't adequately reflect the true risk climate change poses to companies.[59] Management can choose what to disclose a la carte from the different risks, making comparisons between companies challenging, and the disclosures are often not independently verified.[60] In addition, the disclosed metrics are often qualitative instead of quantitative, obscuring balance sheet effects and thereby reducing the value of disclosure to investors.[61] As

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[56] *See* Hana Vizcarra, *The Uncertainty Principles*, THE ENVTL. F. 24 (2020), http://eelp.law.harvard.edu/wp-content/uploads/Vizcarra_Forum_2020_Nov.pdf [perma.cc/5FQT-BPZQ] ("companies need help determining how to properly disclose risks that are rapidly becoming financially material but are distinct from the types of information they have typically worked into their analyses.");

[57] Vizcarra, *supra* note 55, at 24 ("By failing to provide additional guidance, the SEC leaves corporate managers with a murky view of how they should consider climate-related information and without enlightenment as to how best to navigate differing opinions from investors and advocacy organizations.").

[58] TASK FORCE ON CLIMATE-RELATED FIN. DISCLOSURES, 2020 STATUS REPORT 68 (2020), https://www.fsb.org/wp-content/uploads/P291020-1.pdf; [perma.cc/5V82-Q4WB] SUSTAINABILITY ACCT. STANDARDS BD., SASB CONCEPTUAL FRAMEWORK (2017), https://www.sasb.org/wp-content/uploads/2020/02/SASB_Conceptual-Framework_WATERMARK.pdf [perma.cc/C8PM-Y6HD].

[59] Condon, *supra* note 25, at 107-09 ("Voluntary reporting frameworks however, are an imperfect solution to the problem of inadequate climate risk disclosures.").

[60] *Id*. ("[C]ompanies can pick and choose which reporting frameworks, or categories of risk within those frameworks, they disclose.").

[61] Virginia Harper Ho, *"Comply or Explain" and the Future of Nonfinancial Reporting*, 21 LEWIS & CLARK L. REV. 317, 326 (2017), https://law.lclark.edu/live/files/24227-212article2harperhopdf [perma.cc/BVG2-3QE7]
("Several key features of these voluntary reporting regimes limit their usefulness as the basis of investment analysis. First, current standards

a result, some of the same deficiencies in the existing SEC disclosure framework exist for voluntary frameworks as well.[62]

There are several recent developments to improve climate disclosure. In the U.S., many, including the SEC Investor Advisory Committee, have called for mandatory climate disclosures within SEC financial reports.[63] The committee cited benefits for both investors and issuers from a mandatory standardized disclosure framework that would provide material and comparable climate risk information.[64] The Biden administration has already signaled increased climate regulatory activity by inviting public comment on climate change disclosures.[65] Further, in March 2022, the SEC proposed a rule that would require registered public companies to make certain climate-related disclosures in public filings.[66]

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increasingly encourage quantitative metrics, but voluntary reporting has tended to be heavily qualitative and focused on positive rather than negative indicators.”).

[62] *Id.* (“Several key features of these voluntary reporting regimes limit their usefulness as the basis of investment analysis.”).

[63] Press Release, SEC Investor Advisory Committee, Recommendation of the SEC Investor Advisory Committee Relating to ESG Disclosure (May 21, 2020), https://www.sec.gov/spotlight/investor-advisory-committee-2012/esg-disclosure.pdf [perma.cc/TC3T-BT5T] (“For close to 50 years, the SEC has periodically contemplated whether ESG disclosures are material and should be incorporated into its integrated disclosure regime for SEC registered Issuers. This recommendation asserts that the time has come for the SEC to address this issue.”).

[64] *Id.*.

[65] *See, e.g.*, Press Release, Acting SEC Chair Allison Herren Lee, Public Input Welcomed on Climate Change Disclosures (Mar. 15, 2021), https://www.sec.gov/news/public-statement/lee-climate-change-disclosures#_ftn1 [perma.cc/553H-D8SW] (“I am asking the staff to evaluate our disclosure rules with an eye toward facilitating the disclosure of consistent, comparable, and reliable information on climate change.”); Benjamin D. Stone, *During Biden Administration, SEC Will Require Climate Change Risk And ESG Disclosure*, MONDAQ (Jan. 12, 2021), https://www.mondaq.com/unitedstates/shareholders/1024688/during-biden-administration-sec-will-require-climate-change-risk-and-esg-disclosure (“Public companies will be required to disclose climate risks and greenhouse gas emissions . . .”).

[66] SEC, THE ENHANCEMENT AND STANDARDIZATION OF CLIMATE-RELATED DISCLOSURES FOR INVESTORS (2022),

Internationally, during COP26 in Glasgow, the IFRS Foundation announced the creation of the International Sustainability Standards Board with a mission to develop "a comprehensive global baseline of high-quality sustainability disclosure standards."[67] Also, the European Commission proposed a directive to update sustainability reporting standards in the EU which, among other goals, intends to "chang[e] the status of sustainability information to make it more comparable to that of financial information."[68] A more standardized climate disclosure environment will certainly be a beneficial step.

B. Role of Rules-Based vs. Principles-Based Accounting Standards

While mandatory disclosure is an important step to ensuring climate risks are adequately communicated to investors, management discretion within financial accounting standards may still obscure climate risks. The degree of management discretion permitted depends on whether standards are more rules-based, allowing less discretion, or principles-based, enabling more discretion.[69] While variations exist within individual accounting standards, sets of

https://www.sec.gov/rules/proposed/2022/33-11042.pdf [perma.cc/PM87-4K23].

[67] Press Release, IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements (Nov. 3, 2021), https://www.ifrs.org/news-and-events/news/2021/11/ifrs-foundation-announces-issb-consolidation-with-cdsb-vrf-publication-of-prototypes/ [perma.cc/393G-D8ZZ].

[68] *Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting*, 2-4 COM (2021) 189 final (Apr. 21, 2021), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0189&from=EN [perma.cc/6GST-AXUL].

[69] Dennis Sundvik, *The impact of principles-based vs rules-based accounting standards on reporting quality and earnings management*, 20 J. APPLIED ACCT. RES. 78, 78-79 (2019), https://www-proquest-com.ezproxy.bu.edu/docview/2225008574?pq-origsite=primo&accountid=9676 (describing that principles-based standards allow for more manager discretion and rules-based standards limits manager action regarding earnings).

accounting standards are generally either rules-based or principles-based.[70] Although, as discussed more below, U.S. GAAP has moved toward a more principles-based regime, it is still commonly considered rules-based as a result of it having "many bright-line rules, examples, scope restrictions, exceptions, subsequent precedents, [and] implementation guidance…"[71] On the other hand, IFRS, the other major set of accounting standards, is a principles-based framework that allows for more professional judgment and "the potential of different interpretations for similar transactions."[72]

1. Major Accounting Scandals Prompt Shift to Principles-Based Standards

There is an ongoing debate between advocates of principles and rules-based accounting standards that reached a significant inflection point in the U.S. after the Enron and WorldCom scandals. While both scandals involved fraud, accounting standards played a central role. Enron management, an energy-trading company once with a market value of almost $70 billion, used mark-to-market accounting and special purpose entities to misrepresent its financial condition, largely to achieve compensation targets based on earnings and stock performance.[73] Mark-to-market accounting records the fair value of financial instruments in well-developed markets and with clear closing prices, allowing gains and losses to be immediately recognized.[74] Enron management used mark-to-market accounting for relatively long-term contracts of up to ten years, for which reliable gas prices were non-existent, allowing the company to essentially front load profits based on its own price models.[75]

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[70] *Id*. at 90 (discussing and classifying the sets of accounting standards as either principles-based or rules-based).
[71] *Id.*
[72] *Is IFRS That Different From U.S. GAAP?*, INT'L FIN. REPORTING STANDARDS (June 16, 2008), https://www.ifrs.com/overview/General/differences.html [perma.cc/8BYP-R6US].
[73] *See* Gary Giroux, *What Went Wrong? Accounting Fraud and Lessons from the Recent Scandals*, 75 SOC. RES. 1205, 1208 (2008), https://www.jstor.org/stable/pdf/40972113.pdf?refreqid=excelsior%3A93477983d671c9546b3519574e56df55.
[74] *Id.* at 1213.
[75] *Id*.

Management also used special purpose entities to "keep fresh debt off the books, camouflage existing debt, book earnings, or create operating cash flow."[76]

As a result of these practices becoming public, Enron made several restatements and then declared bankruptcy in December 2001.[77] The company's standing as the largest bankruptcy in U.S. history at the time was quickly surpassed by WorldCom's bankruptcy in July 2002.[78] The telecom company, which had $107 billion in assets as recently as its 2001 10-K, similarly abused accounting standards to misrepresent its financial condition.[79] WorldCom capitalized its "line costs", which were network access right fees, instead of appropriately recording them as operating expenses requiring a $3.8 billion restatement in June 2002 before its July bankruptcy.[80]

These scandals led the SEC to reevaluate principles versus rules-based accounting standards. Some commentators believed the more rules-based nature of U.S. GAAP contributed to the scandals and advocated for a shift toward more principles-based standards.[81] Others have disagreed that the nature of U.S. GAAP was a significant contributing factor to the fraud.[82] SOX required the SEC

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[76] *Id.* at 1216 (citing BETHANY MCLEAN & PETER ELKIND, THE SMARTEST GUYS IN THE ROOM: THE AMAZING RISE AND SCANDALOUS FALL OF ENRON 155 (New York: Penguin Group, 2003).
[77] *Id.* at 1224–25.
[78] *Id.* at 1226.
[79] *Id.* at 1227.
[80] *Id.* at 1228.
[81] *See, e.g.,* James D. Cox, *Reforming the Culture of Financial Reporting: The PCAOB and the Metrics for Accounting Measurements* 81 WASH. U. L. Q. 301 (2003), https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1283&context=law_lawreview [perma.cc/ZU2D-KWX7] ("Sarbanes-Oxley itself reflects the belief that an important contributing factor to the financial maelstrom is that U.S. generally accepted accounting principles (GAAP) have become too rule-oriented."); Sundvik, *supra* note 68, at 78 ("An argument is that transaction structuring played a big role in the scandals and that the rules-based characteristics of the US Generally Accepted Accounting Principles (GAAP) were to blame. Through financial engineering, firms were able to achieve technical compliance while evading the actual intent.").
[82] *See, e.g.,* Cox, *supra* note 80, at 309 ("It should be noted that the principles-rules debate has no natural connection to the clearly fraudulent reporting practices engaged in by Enron, WorldCom, and the other recently

to study and publish a report on the adoption of a principles-based accounting system.[83] The SEC criticized the two "extremes" of rules-based and principles-only accounting standards.[84] The report asserted that rules-based standards, consisting of exceptions and bright-line tests, "can provide a roadmap to avoidance of the accounting objectives inherent in the standards…reward[ing] those willing to engineer their way around the intent of the standards."[85] On the other hand, a principles-only approach "typically provides insufficient guidance to make the standards reliably operational… requir[ing] preparers and auditors to exercise significant judgment in applying overly-broad standards to more specific transactions and events…"[86] These criticisms largely echo those found in the existing academic literature.[87]

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scandalous companies. Much of what has captured our attention was straightforward defiance of GAAP; the accounting and financial scandals were not the product of technical compliance with the metrics for financial reporting that nonetheless presented a false picture of the firm's position or performance.").

[83] *See* U.S. SEC. & EXCH. COMM'N, SEC STUDY PURSUANT TO SECTION 108(D) OF THE SARBANES-OXLEY ACT OF 2002 ON THE ADOPTION BY THE UNITED STATES FINANCIAL SYSTEM OF A PRINCIPLES-BASED ACCOUNTING SYSTEM (2003), https://www.sec.gov/news/studies/principlesbasedstand.htm [perma.cc/B6A4-TT7Y] (discussing the passing of Sarbanes Oxley and its role in improving the "system of financial reporting").

[84] *Id.*

[85] *Id.*

[86] *Id.*

[87] *See, e.g.,* David Herwitz, *Caveat Auditor: Back to First Principles*, 65 BUS. LAW., 95, 104 (2009), https://www.jstor.org/stable/40688579 ("experience confirms that more detail and greater specificity can just as easily lead to more opportunities for escaping an apt but unwanted rule, by simply failing to satisfy one of its many detailed and specific strictures…However, a principle-based system is not a panacea: the generality of broad principles may be highly prized, but it also leads to the need for more judgment in applying the principles, and with that comes added discretion, affording increased opportunity to shop aggressively for a desirable accounting treatment."); Christian Leuz, *Different Approaches to Corporate Regulation: How Jurisdictions Differ and Why* 18 (Eur. Corp. Governance Inst., Working Paper No. 156, 2010), https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID1617994_code512461.pdf?abstractid=1581472&mirid=1 [perma.cc/9GZN-AR8H] ("Rules-based standards tend to be more bright-line and are generally easier to apply, but they likely invite more gaming behavior (e.g., contracting around the rules)

The SEC ultimately recommended "objectives-oriented" standards which would ideally lead to less discretion and more consistency by "clearly establish[ing] the objectives and the accounting model for the class of transactions, providing management and auditors with a framework that is sufficiently detailed for the standards to be operational."[88] FASB, which is responsible for actually establishing accounting standards, largely agreed with the report's conclusions and incorporating them into FASB's principles-based proposal.[89]

After the 2003 SEC report, FASB issued a concepts statement in 2010, which was partially amended in 2018, outlining the objectives of financial reporting and qualitative characteristics of useful financial information.[90] FASB describes the objective of general purpose financial reporting as "to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity."[91]

The statement also notes that, to adequately assess an entity's future cash flows, outside parties like investors "need information about the resources of the entity, claims against the entity, and how efficiently and effectively the entity's management and governing board have discharged their responsibilities to use the entity's resources."[92] FASB proceeds to note that "[e]xamples of such responsibilities include protecting the entity's resources from

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compared to principles-based standards. Principles-based standards in turn give more discretion to firms, which can enable managers to convey private information to the markets in a less costly fashion, but the discretion also allows managers to pursue ulterior reporting motives.").

[88] U.S. SEC. & EXCH. COMM'N, *supra* note 82.

[89] FASB, FASB RESPONSE TO SEC STUDY ON THE ADOPTION OF A PRINCIPLES-BASED ACCOUNTING SYSTEM (2004) https://www.fasb.org/cs/BlobServer?blobkey=id&blobwhere=1175818772506&blobheader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs [perma.cc/VF9H-5EE4] ("The 'objectives-oriented' approach to setting standards described above (and expanded upon in the Study) is similar to the principles-based approach described in the Board's Proposal. After discussing the comments received on its Proposal, the Board agreed that its conceptual framework needs to be improved.").

[90] FIN. ACCT. STANDARDS BD., *supra* note 46, at 1 (discussing the conceptual framework used by the FASB).

[91] *Id.*

[92] *Id.* at 2.

unfavorable effects of economic factors such as price and technological changes. . ."[93] Although this appears broad enough to require management to incorporate stranded assets and transition risk, as illustrated below, actual accounting practice often does not.

Further, when discussing qualitative characteristics of useful financial information, FASB asserts two fundamental characteristics: relevance and faithful representation.[94] While FASB connects relevance with materiality, as defined earlier, faithful representation is defined as "complete, neutral, and free from error."[95] Neutrality intertwines with management discretion, which is reflected in FASB's definition of the term: "A neutral depiction is *without bias* in the selection or presentation of financial information. A neutral depiction is *not slanted, weighted, emphasized, deemphasized, or otherwise manipulated* to increase the probability that financial information will be received favorably or unfavorably by users." (emphasis added). Former SEC Chairman Arthur Levitt once observed that "[t]oo many corporate managers, auditors, and analysts are participants in a game of nods and winks. In the zeal to satisfy consensus earnings estimates and project a smooth earnings path, wishful thinking may be winning the day over faithful representation."[96] The oil and gas industry, facing an existential threat with climate change and the associated energy transition, certainly has an incentive to maximize earnings in the short term. Accounting standards promulgated by FASB should contain adequate safeguards to ensure these characteristics are maintained and the articulated objectives of financial reporting are achieved.

2. *Mixed Evidence of Relationship Between Accounting Standards & Reporting Quality*

Several studies have examined the relationship between different accounting standards, earnings management, and reporting quality with mixed results. One study analyzed whether mandatory adoption of IFRS which, as a principles-based regime affords

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[93] *Id.*
[94] *Id.* at 6, 10.
[95] *Id.* at 18.
[96] Arthur Levitt, Chairman, Sec. & Exch. Comm'n, The "Numbers Game", Address Before NYU Center for Law and Business (Sept. 28, 1998) (transcript available at https://www.sec.gov/news/speech/speecharchive/1998/spch220.txt)

management more discretion, improved accounting quality.[97] In contrast with previous studies, the authors concluded that "accounting quality declined after mandatory IFRS adoption" based on "evidence of a significant increase in income smoothing and accrual aggressiveness as well as a significant decrease in timeliness of loss recognition for firms in IFRS adopting countries relative to benchmark firms…."[98] The authors primarily attributed the change in quality to "changes in managerial discretion or exercise of judgment rather than by changes in properties of accounting naturally resulting from the new standards."[99] Another study found that reduced accounting discretion decreases earnings management and alters investment decisions of "high foresight" or particularly knowledgeable managers.[100]

On the other hand, a more recent study examining accounting standards, reporting quality, and earnings management arrived at the opposite conclusion finding that "principles-based accounting standards are associated with increased reporting quality."[101] The author also found that principles-based standards led to more accrual earnings management while rules-based standards fostered costlier "real earnings management" such as offering discounts or lenient credit to temporarily increase sales.[102] While the relationship between the type of accounting standards and reporting

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[97][perma.cc/E4KY-Q2E4].

Anwer S. Ahmed et al., *Does Mandatory Adoption of IFRS Improve Accounting Quality? Preliminary Evidence*, 30 CONTEMP. ACCT. RES. 1344 (2013), https://onlinelibrary-wiley-com.ezproxy.bu.edu/doi/full/10.1111/j.1911-3846.2012.01193.x. ("We provide evidence on the preliminary effects of mandatory adoption of International Financial Reporting Standards (IFRS) on accounting quality for a relatively broad set of firms from 20 countries that adopted IFRS in 2005 relative to a benchmark group of firms from countries that did not adopt IFRS matched on the strength of legal enforcement, industry, size, book-to-market, and accounting performance.").

[98] *Id.* at 1369.

[99] *Id.*

[100] Hwee-Cheng Tan & Karim Jamal, *Effect of accounting discretion on ability of managers to smooth earnings*, 25 J. ACCT. & PUB. POL'Y 554, 570 (2006), https://www.sciencedirect.com/science/article/pii/S0278425406000676/pdfft?md5=69c1a8346e3023de5e6717c8396fd704&pid=1-s2.0-S0278425406000676-main.pdf.

[101] Sundvik, *supra* note 68, at 89–90.

[102] *Id.* At 81.

quality is disputed, it is clear that, by their flexible nature, principles-based standards create more room for management discretion.

3. *Climate Risk in the Oil & Gas Industry Likely Requires Rules-Based Approach*

As a result of increased discretion, a principles-based approach creates a risk of management abuse to maintain existing market positions and mislead investors. In 2019, former SEC Commissioner Robert J. Jackson Jr. and current Commissioner Allison Herren Lee raised these concerns when examining proposed changes to Regulation S-K.[103] In particular, the commissioners noted that "[o]ne concern with principles-based disclosure is that it gives company executives discretion over what they tell investors. Another is that it can produce inconsistent information that investors cannot easily compare, making investment analysis—and, thus, capital—more expensive."[104] SEC Commissioner Lee noted in a 2021 speech that, in the disclosure context, "[m]anagement may view matters with an enthusiasm that reflects a belief in the nature and direction of their business. Developments that investors may see as negative and in need of disclosure may be viewed by management as a temporary aberration or even a positive development."[105]

Although these comments were made in the disclosure context, they are just as applicable to management accounting estimates and assumptions related to climate risk. As demonstrated below, the disparate climate disclosure environment in many ways

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[103] Joint Statement of Commissioners Robert J. Jackson, Jr. and Allison Herren Lee on Proposed Changes to Regulation S-K (Aug. 27, 2019) https://www.sec.gov/news/public-statement/statement-jackson-lee-082719 [perma.cc/E37V-D875] (discussing concerns over lacking or inadequate disclosures for ESG initiatives from corporations).

[104] *Id.* (citing Andrew A. Acito, Jeffrey J. Burks & W. Bruce Johnson, *The Materiality of Accounting Errors: Evidence from SEC Comment Letters*, 36 CONTEMP. ACCT. RES. 839, 862 (2019); Robert G. Eccles and Tim Youmans, *Materiality in Corporate Governance: The Statement of Significant Audiences and Materiality* (Harv. Bus. Sch. Working Paper 16-203, 2015)) ("One concern with principles-based disclosure is that it gives company executives discretion over what they tell investors. Another is that it can produce inconsistent information that investors cannot easily compare, making investment analysis—and, thus, capital—more expensive.").

[105] Herren Lee, *supra* note 52.

parallels financial accounting standards in the oil and gas industry, where companies operating under relatively similar conditions arrive at markedly different accounting decisions. Discretion under some existing financial accounting standards allows companies to cherry-pick favorable scenarios and price assumptions and therefore likely requires a more rules-based approach.

C. Management Discretion in U.S. GAAP Obscures Climate Risk

In almost every industry, management makes assumptions and estimates that can significantly influence financial positions presented in public filings. The PCAOB defines an accounting estimate as "a measurement or recognition in the financial statements of (or a decision to not recognize) an account, disclosure, transaction, or event that generally involves subjective assumptions and measurement uncertainty."[106] Fair value measurements of assets are often cited as an example.[107] Taking an even broader perspective, accounting and legal scholars have noted that "the annual financial reports are the statements of the company, representing the accounting decisions and conclusions of those in charge of the company's affairs–in theory the board of directors, but in practice usually the operating management."[108]

Any determination of the appropriate amount of management discretion to permit under accounting standards is a balancing act, but it should adequately recognize management incentives.

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[106] AUDITING STANDARDS OF THE PUBLIC COMPANY ACCOUNTING OVERSIGHT BOARD, AS 2501: Auditing Accounting Estimates, Including Fair Value Measurements §.01 (PUB. CO. ACCOUNTING OVERSIGHT BD. 2020), https://pcaobus.org/oversight/standards/auditing-standards/details/AS2501 [perma.cc/L5EK-Z2TW] ("An accounting estimate is a measurement or recognition in the financial statements of (or a decision to not recognize) an account, disclosure, transaction, or event that generally involves subjective assumptions and measurement uncertainty.").

[107] Fair value often involves more estimation than carrying value, which is based on an original purchasing price adjusted for subsequent depreciation and impairment, and market value, which uses observable asset prices and quotes. *See Fair Value*, CORP. FIN. INST. (last visited Aug. 19, 2021),

[108] Herwitz, *supra* note 86, at 99 (citing Perry E. Wallace, *Accounting, Auditing, and Audit Committees After Enron, et al: Governing Outside the Box Without Stepping off the Edge in the Modern Economy*, 43 WASHBURN L.J. 91, 93 (2003)).

Accounting scholars have noted that management discretion is a double edged sword.[109] Discretion can reduce the cost of reporting regulation and may increase reporting quality by allowing management to "better accommodate the specifics of a certain business transaction in the financial reporting."[110] In addition, some studies find that management may use accounting discretion to the benefit of shareholders.[111]

Analysis of accounting discretion manipulation traditionally focuses on motives for manipulation, like managing earnings to meet short-term compensation, market, and third-party targets,[112] but this can neglect the conditions that enable abuse. Professor Acevedo has noted that the conditions for abuse originate from "a combination of

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[109] Leuz, *supra* note 86, at 15.

[110] Sundvik, *supra* note 68, at 80; *see also* Leuz, *supra* note 86, at 15 ("[D]iscretion makes the application of reporting regulation less costly for firms. Moreover, it allows corporate insiders to convey private information that resides within the firm and to adapt reports so that they better reflect the underlying economic reality.").

[111] *See e.g.,* Bowen et al., *Accounting Discretion, Corporate Governance, and Firm Performance,* 25 CONTEMP. ACCT. RES. 351, 352 (2008), https://faculty.fuqua.duke.edu/~vmohan/bio/files/published%20papers/brvcar.pdf [perma.cc/UZ3N-UEXH] ("Thus, these second stage results do not support the claim that managers, on average, exploit lax governance structures to exercise accounting discretion at the shareholder's expense. In contrast, we find some evidence that discretion due to poor governance is positively associated with future operating cash flows and return on assets (ROA), consistent with shareholders benefiting from earnings management, on average.").

[112] *See e.g.,* Walid Alissa et al., *Firms' use of accounting discretion to influence their credit ratings*, 55 J. ACCT. & ECON. 129, 144 (2013), https://www.sciencedirect.com/science/article/pii/S0165410113000025/pdfft?md5=f09f21bfd4a2f029503284fdaf102b1e&pid=1-s2.0-S0165410113000025-main.pdf (concluding after an analysis of empirical data that "[t]hese results suggest that firms below or above their expected credit ratings may be able to successfully achieve a desired upgrade or downgrade through the use of earnings management."); Tan & Jamal*, supra* note 99, at 554; Christian Leuz et al., *Earnings management and investor protection: an international comparison*, 69 J. FIN. ECON. 505, 506 (2003) https://www.sciencedirect.com/science/article/pii/S0304405X03001211/pdfft?md5=cf885059b832efc148d3d91406d8f594&pid=1-s2.0-S0304405X03001211-main.pdf (finding that management also has incentives to abuse its discretion to "overstate earnings and conceal unfavorable earnings realizations (i.e., losses) that would prompt outsider interference.").

factors that includes a lack of meaningful regulatory guidance by the SEC in establishing accounting standards, the creation of malleable accounting standards by private standard setters, and unregulated management discretion when selecting the accounting standards to be used in preparing financial statements."[113] This combination is unfortunately not rare under U.S. GAAP.

1. Malleability of Proved Reserves in the Oil & Gas Industry

An example in the oil and gas industry is proved reserves, which are a significant asset for companies and for which the valuation depends heavily on management assumptions and estimates. Among the different reserve categories, proved reserves are supposed to represent the highest confidence of recovery.[114] Proved reserves also represent future cash flows and investors rely heavily upon amounts disclosed in public filings to arrive at company valuations.[115]

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[113] *See* Arthur Acevedo, *The Fox and the Ostrich: Is GAAP a Game of Winks and Nods?*, 12 TENN. J. BUS. L. 63, 72 (2010), https://ir.law.utk.edu/cgi/viewcontent.cgi?article=1191&context=transactions [perma.cc/9WS5-XL9G]. Professor Acevedo has also questioned whether private organizations like FASB and PCAOB should be responsible for setting accounting and auditing standards given the risk of capture. *Id*. at 104 ("Expecting a private standard setter to advocate for accounting standards, which are in the public interest, is unrealistic when the private standard setter's members depend on satisfying the needs of their clients.").

[114] *See* 17 C.F.R. § 210.4-10. The three categories of reserves in descending degrees of confidence are: proved, probable, and possible. Proved reserves are associated with at least a 90% probability of actual recovery or a "high degree of confidence" of recovery, probable reserves with at least a 50% probability of recovery or it "is as likely as not that actual remaining quantities recovered will exceed the sum of estimated proved plus probable reserves", and possible reserves have at least a 10% probability of recovery or that quantities recovered have "a low probability of exceeding proved plus probable plus possible reserves."

[115] *How are Oil and Gas Company Balance Sheets Different*, CORP. FIN. INST., https://corporatefinanceinstitute.com/resources/knowledge/finance/oil-and-gas-company-balance-sheets/ [perma.cc/ENQ4-3EMA] (last visited May 27, 2021) ("Since such companies are very dependent on the finite resource they are extracting, assessing the availability and probability it can be extracted at can help give a proxy to the company valuation. For example,

Accounting standards and SEC guidance conflict about incorporation of future conditions upon initial booking of reserves, but impairment analysis requires management to evaluate those conditions. The SEC has requirements to initially book proved reserves under Regulation S-X, incorporated within U.S. GAAP Accounting Standard Codification (ASC) 932, including that the oil and gas quantities "can be estimated with *reasonable certainty* to be *economically producible* . . . under *existing* economic conditions, operating methods, and government regulations . . . ."[116] (emphasis added). If quantitative methods are used, reasonable certainty is "at least a 90 percent probability that the quantities recovered will equal or exceed the estimate."[117] However, for any other method, reasonable certainty means "a *high degree of confidence* that the quantities will be recovered."[118] (emphasis added). Economically producible "means a resource which generates revenue that exceeds, or is *reasonably expected* to exceed, the costs of the operation."[119] (emphasis added).

Within these two definitions alone, the significant degree of management discretion is evident. Terms like "high degree of confidence" and "reasonably expected" leave ample room for overly optimistic management to book reserves which later results in de-bookings of billions of barrels of oil when reserves no longer meet the SEC proved reserve definition.[120]

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when screening companies, one may look at how many proved reserves they own. Reserves can also be made into valuation multiples to compare different companies.").

[116] 17 C.F.R. § 210.4-10 (a)(22) (2022).

[117] *Id*. at (a)(24).

[118] *Id*.

[119] *Id.* at (a)(10).

[120] *See e.g.,* Tom Sanzillo, *ExxonMobil's 2020 financial report: "Re-de-booking" raises questions about actual size of reserves*, INST. FOR ENERGY ECON. & FIN. ANALYSIS (Mar. 2, 2021), https://ieefa.org/ieefa-u-s-exxonmobils-2020-financial-report-a-company-lost-re-de-booking-raises-questions-about-actual-size-of-exxonmobils-reserves/ [perma.cc/5T8J-EJP4] ("At the end of 2019, ExxonMobil claimed 22.4 billion barrels of oil reserves worldwide. Now, it claims just 15.2 billion barrels—a drop of more than 7 billion barrels, including 3 billion barrels in Canada and more than 1 billion in the U.S."); Chip Cummins, et al., *Losing Reserve: At Shell, Strategy and Structure Fueled Troubles*, WALL ST. J. (Mar. 12, 2004), https://www.wsj.com/articles/SB107905259224053451

In addition, the SEC's proved reserve definition only requires consideration of *existing* economic conditions potentially enabling management teams to ignore the effects of the ongoing energy transition away from fossil fuels. In particular, under Regulation S-K, economic conditions use a backward looking twelve month price average and explicitly excludes "escalations based upon future conditions."[121]

However, interpretive SEC guidance mentions that "[e]conomic uncertainties such as the lack of a market (e.g. stranded hydrocarbons)…can also prevent reserves from being classified as proved."[122] Further, in its 2004 proceeding against Shell, the SEC found Shell's assumptions about future conditions were unreasonable and required the company to de-book 4.47 billion barrels, or 23% of proved reserves as of year-end 2002.[123] However, this level of scrutiny is rare. As a result, this guidance and proceeding appear to be anomalies and therefore, for initial booking of reserves, consideration of possible future economic and regulatory conditions such as reduced oil demand due to the energy transition or a cost of carbon is not required by the SEC.

Consideration of changing future conditions is required though for impairment analysis of reserves. For long lived assets, like oil reserves, U.S. GAAP requires companies to test for impairment of the carrying value of the asset, its purchase price less accumulated

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("On Jan. 9, Shell came clean to investors, saying it would slash its reserve holdings by 20%.").

[121] 17 C.F.R. § 210.4-10 (a)(22) (2022).

[122] SEC. & EXCH. COMM'N, EXCERPT FROM CURRENT ISSUES AND RULEMAKING PROJECTS OUTLINE, (November 14, 2000) https://www.sec.gov/divisions/corpfin/guidance/cfoilgasinterps.htm [perma.cc/2YDK-FXPM] (last visited May 27, 2021).

[123] Royal Dutch Petroleum Co., Exchange Act Release No. 50233, 2004 WL 1883964, 10 (Aug. 24, 2004), https://www.sec.gov/litigation/admin/34-50233.pdf [perma.cc/H9BA-4YVB] ("These projections, in turn, depended on a number of assumptions concerning improved economic and operating conditions… Apart from the divergence of these 'assumptions' from the requirement in Rule 4-10 that proved reserves be based on 'existing conditions,' none of these assumptions was reasonable, particularly in light of the fact that SPDC's operations performed well below the projected levels throughout the period.").

depreciation, upon certain trigger events.[124] Under ASC 360-10-35, recoverability of long-lived assets must be tested upon certain events or changes in circumstances including "a significant decrease in market price" or "a significant adverse change in legal factors or the business climate that could affect the value of a long-lived asset."[125] An impairment loss must be recognized "if the carrying amount of a long-lived asset (asset group) is not recoverable and exceeds its fair value."[126] The carrying amount 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 (asset group)."[127] If the carrying amount is not recoverable, the company must recognize an impairment loss in "the amount by which the carrying amount of a long-lived asset (asset group) exceeds its fair value."[128] The company must use reasonable assumptions, considering all available evidence, for future cash flow estimates and those assumptions must be both internally and externally consistent.[129]

It is this requirement that has presented many challenges for oil and gas companies related to climate change. Future cash flow estimates include projections about future costs and demand which should incorporate impacts of the transition to cleaner energy sources and potential regulatory responses like a cost of carbon. A couple of companies in the industry, BP and Total S.A., have reduced

[124] CODIFICATION OF ACCOUNTING STANDARDS AND PROCEDURES, § 360 Property, Plant and Equipment, 10 Overall, 35 Subsequent Measurement (FIN. ACCOUNTING STANDARDS BD. 2020).
[125] *Id*. at 35–21.
[126] *Id*. at 35–17.
[127] *Id.*
[128] *Id.*
[129] *Id.* at 35–30 (stating factors involved in estimating future cash flows to test the recoverability of a long-lived asset); *see also* SEC Staff Accounting Bulletin No. 100, 64 Fed. Reg. 67154 (Dec. 1, 1999) (expressing views towards accounting for long-lived assets). This requirement has significant consequences, particularly for oil and gas companies. *See* Greg Rogers, *Accounting For Climate Change: From Scenario Analysis to Fraud in Three Easy Steps*, RESPONSIBLE INVESTOR (Oct. 25, 2019), https://www.responsible-investor.com/articles/gr-af. ("An absence of good options, however, is not an excuse for oil executives to bury their heads in the sand. Willful blindness to potential ruin is failure to exercise fiduciary duty of care. With a global market cap of close to $2 trillion, the top twenty NYSE-listed oil and gas companies, and their investors, have a lot to lose from inaccurate and misleading reporting.").

long-term oil price assumptions in recognition of the effects of the energy transition and company net-zero commitments, resulting in millions of dollars of asset impairments at both companies.[130] However, these companies are the exception, and failure to make similar changes has generated scrutiny from state governments and investors and led some to call for SEC intervention.[131]

2. *Potential Promise of Accounting Standards-Based Climate Risk Misrepresentation Litigation*

Recent examples of investor scrutiny include some Exxon investors alleging that the company has misrepresented the effects of climate change on its business including inconsistently applying and using different proxy cost of carbon amounts. Referencing multiple SEC and U.S. GAAP requirements, a class of investors in *Ramirez v. Exxon Mobil Corp.*[132] and an investment management company in *Saratoga Advantage Tr. Energy & Basic Materials Portfolio v. Exxon*

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[130] *See* ROSS, *supra* note 11, at 9–10 (citing Press Release, BP, Progressing Strategy Development, BP Revises Long-Term Price Assumptions, Reviews Intangible Assets and, as a Result, Expects Non-Cash Impairments and Write-Offs (June 15, 2020), https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-revises-long-term-price-assumptions.html [perma.cc/35HT-8FD9]; Total S.A., Universal Registration Document 2019 306 (2020), https://www.total.com/sites/g/files/nytnzq111/files/atoms/files/2019_total_universal_registration_document.pdf, [perma.cc/XA2Q-T3H7]; Press Release, Total S.A., Short Term Price Revision And Climate Ambition: Total Announces Exceptional 8 B$ Asset Impairments Including 7 B$ In Canadian Oil Sands (July 29, 2020), https://www.total.com/media/news/short-term-price-revision-and-climate-ambition-total-announces-exceptional-8-b-asset [perma.cc/T3V4-LL5F]).

[131] *Id.* at 9 ("The SEC should signal that the impacts of the climate crisis and the associated energy transition should be reflected in companies' disclosure and accounting. . . . Ideally, the SEC file reviewers should train their sights on enforcing the transparency of significant assumptions that companies use to make the estimates called for in accounting.").

[132] Complaint, Ramirez v. Exxon Mobil Corp., 334 F. Supp. 3d 832 (N.D. Tex. 2018) [hereinafter Ramirez Complaint] (alleging claims under sections 10(b) and 20(a) of the Securities Exchange Act of 1934).

Mobil Corp[133] alleged that that Exxon committed securities fraud by making materially false and misleading statements going back to 2014. While it is still ongoing, the *Ramirez* case in particular represents the potential promise of using existing accounting standards and SEC requirements to hold companies accountable for estimates incorporating climate risk. The question remains though whether the existing standards have enough teeth to prevent abuse and provide investors with reliable and standardized financial data.

In both cases, a significant portion of the complaints alleged that Exxon inflated the value of some its reserves in 2015 and 2016 by failing to timely de-book its Kearl Operations reserves that no longer qualified as proved reserves due to a low price environment,[134] in violation of ASC 275, ASC 932, and Item 303,[135] and by failing to timely impair Rocky Mountain dry gas reserves despite peer companies operating in the same region doing so in violation of ASC 360-10-35.[136]

Although these allegations were not directly related to climate change, others were. The *Ramirez* plaintiffs asserted that while Exxon had represented in its public filings that a proxy cost of carbon was used across its business units and in all investment

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[133] Complaint, Saratoga Advantage Tr. Energy & Basic Materials Portfolio v. Exxon Mobil Corp., No. 3:19-cv-16380 (D. N.J. Aug. 6, 2019) [hereinafter Saratoga Complaint].

[134] *Id.* at 63 ("As each month in 2016 progressed, the likelihood of de-booking Kearl's proved reserves became more and more a certainty, but Defendants continued to conceal this fact from investors."); Ramirez Complaint, *supra* note 131, at 61-63 ("As a result, by no later than the beginning of February 2016, it was apparent to Defendants that the Kearl Operation bitumen reserves would no longer satisfy the SEC definition for proved reserves at year-end 2016 . . . ").

[135] *See* FASB, *infra* note 182 for discussion of ASC 275; *see* SEC, *supra* note 48 for discussion of Item 103, *see also* notes 115-118 for discussion of ASC 932.

[136] Saratoga Complaint, *supra* note 132, at 31 ("Persistently low gas prices and Exxon's proxy cost of carbon should have caused the Company to recognize an impairment for its Rocky Mountain gas operations at the end of fiscal 2015.); Ramirez Complaint, *supra* note 131, at 65 ("Because low gas prices and other significant factors at year-end 2015 indicated that the future net cash flows associated with the Rocky Mountain dry gas operations were no longer expected to exceed the capitalized costs over the life of the assets, Exxon was required to take an asset impairment.").

decisions,[137] Exxon did not apply a proxy cost of greenhouse gases (GHG) to multiple projects or to impairment testing.[138] The plaintiffs in both cases also alleged that Exxon used a substantially lower cost of carbon for internal planning and budgeting ($40/ton) than externally disclosed ($60/ton and $80/ton), meaning that more GHG intensive projects appeared to be cash flow justified.[139] Exxon also represented in 2014 that, even considering its proxy cost of carbon, "we are confident that none of our hydrocarbon reserves are now or will become 'stranded.'"[140] As noted earlier, accounting standards and SEC guidance require the company to use reasonable assumptions, considering all available evidence, for future cash flow estimates and those assumptions must be both internally and externally consistent.[141]

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[137] Ramirez Complaint, *supra* note 131, at 40–43 ('Exxon purports to "rigorously consider the risk of climate change in our planning bases and investments," and has repeatedly represented to investors that a "proxy-cost" of carbon is included in all of its investment decisions, internal reserve estimates and impairment decisions.').

[138] *Id.* at 43 ("Indeed, contrary to Defendant Tillerson's statement to investors, "everything" *did not* get tested against Exxon's purported carbon proxy cost.").

[139] *Id.* at 44 ("Specifically, the Olseke Affirmation states: "Exon publicly stated in the MTR Report and its *Outlook for Energy* reports that for projects in developed countries [including Canada and the U.S.], it applied proxy costs that reached $60/ton of GHGs by 2030 and $80/ton by 2040. In fact, *the proxy cost figures used for Exxon's internal planning and budgeting reached only $40/ton by 2030*."); Saratoga Complaint, *supra* note 132 at 35 ("The statements in the E&C Report were materially misleading because they failed to disclose that: (i) Exxon's internal policies used proxy costs of carbon that were significantly lower than those identified in public statements; (ii) proxy costs were not considered when evaluating certain projects, including the Canadian Bitumen Operations since as early as fall 2015; (iii) proxy costs were not used in asset impairment tests of reserve assets until at least 2016; and (iv) as a result of the foregoing, the Individual Defendants did not adequately evaluate the potential impact of climate change-related risks on the value of Exxon's assets and its long-term business prospects.").

[140] Ramirez Complaint, *supra* note 131, at 87.

[141] FIN. ACCOUNTING STANDARDS BD., *supra* note 123 ("An impairment loss shall be recognized only if the carrying amount of a long-lived asset (asset group) is not recoverable and exceeds its fair value."); *see also* SEC Staff Accounting Bulletin No. 100, *supra* note 128 ("that standard indicates that estimates of expected future cash flows should be the best estimate based on

In *Ramirez*, the court found that "[a] reasonable investor would likely find it significant that ExxonMobil allegedly applied a lower proxy cost of carbon than it publicly disclosed."[142] The court also denied Exxon's motion to dismiss, citing case law from the Fifth Circuit that "alleged accounting violations are sufficient to plead material misstatements."[143]

While these cases demonstrate a potential path for accountability for alleged misrepresentations in management estimates and assumptions, the only case with a final judgment so far sided with Exxon. The court in the *People of the State of New York v. Exxon Mobil Corp.* case found that Exxon had not made any material misrepresentations or omissions in any of its public disclosures during the period alleged[144] based on a dropped SEC investigation into Exxon's 10-Ks[145] and no witnesses claiming to have been misled by the alleged misrepresentations.[146] In particular, the court found that "[n]o reasonable investor during the period from 2013 to 2016 would make investment decisions based on speculative assumptions of costs that may be incurred 20+ or 30+ years in the future with respect to unidentified future projects."[147] The court also disagreed that GHG assumptions could affect Exxon's financial statements finding that "[t]he internal economic models used to evaluate future projects, and the GHG assumptions incorporated in those models, do

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reasonable and supportable assumptions and projections . . . The staff believes that cash flow projections used in the impairment analysis must be both internally consistent with the company's other projections and externally consistent with financial statement and other public disclosures.").

[142] Ramirez v. Exxon Mobil Corp., 334 F. Supp. 3d 832, 846 (N.D. Tex. 2018).

[143] *Id.* at 848 (citing Barrie v. Intervoice–Brite, Inc., 397 F.3d 249, 257-58 (5th Cir. 2005)).

[144] People of the State of New York v. Exxon Mobil Corp., No. 452044/2018, 2019 WL 6795771, 1 (Sup. Ct. N.Y. Dec. 10, 2019).

[145] *Id.* at 10 ("Previously, the SEC investigated the propriety of ExxonMobil's Form 10-K filings, and it is undisputed that the SEC subsequently dropped that investigation without requiring ExxonMobil to restate or amend any of ExxonMobil's financial disclosure.").

[146] *Id.* at 11 ("Significantly, while ExxonMobil's Corporate Citizenship were offered in evidence at trial, the Office of the Attorney General did not call any witness who claimed to have been misled by the information contained in these documents.").

[147] *Id.* at 20.

not impact ExxonMobil's financial statements and other corporate books and records."[148] The veracity of the last statement is particularly dubious considering GHG cost and demand assumptions used in net present value calculations for reserve valuation purposes certainly would affect the amount and category of assets (i.e. proved, unproved) disclosed in Exxon's financial statements.

It remains to be seen whether the ruling and supporting rationale in the older *People of the State of New York* case will prevail in ongoing cases like *Ramirez* and *Saratoga*. In one of the most recent ongoing cases alleging climate change driven investor misrepresentation, *Commonwealth of Massachusetts v. Exxon Mobil Corp.*, the Massachusetts Superior Court denied Exxon's motion to dismiss citing similar reasoning as in *Ramirez*.[149] While examining investor misrepresentation under Massachusetts state law, the court also signaled that Exxon's misrepresentation could be material: "[t]he Commonwealth has sufficiently alleged that Massachusetts investors would not have purchased or retained Exxon's stocks but for its misrepresentations and omissions concerning the risk of climate change to its business."[150] This decision demonstrates the ongoing debate regarding climate risk and materiality.

IV. Auditor Evaluation of Management Discretion

In addition to courts, auditors have a role in assessing materiality and management discretion more broadly. With adequate auditing standards, auditors also can importantly serve a preventive function by challenging dubious management assumptions and estimates. Similar to accounting standards, major accounting scandals like Enron prompted a reassessment of auditing firm independence and standards. Many commentators acknowledged that one of the major contributing factors to the scandals was auditors "either being all too reluctant to challenge

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[148] *Id.* at 15.
[149] Commonwealth of Massachusetts v. Exxon Mobil Corp., 1984CV03333 1, 19 (Mass. Super. Ct. 2019) (order denying motion to dismiss) ("The Commonwealth has specifically alleged that Exxon made statements to investors that climate change risks pose no meaningful threat to Exxon's business model, its assets, or the value of its securities despite Exxon's 'longstanding scientific understanding of the potentially 'catastrophic' nature of these risks. This is enough to survive a motion to dismiss.").
[150] *Id.* at 11.

doubtful management accounting choices, or worse yet, having made objection, withdrawing it in response to management pressure."[151] This reluctance to challenge management appears to be true for climate risk as well, with one report finding that "80% of auditors provided no indication of whether or how they had considered material climate-related matters…"[152]

SOX attempted to address some of the pressure points by having auditors report to the audit committee instead of management[153] and barring auditors from providing certain non-audit services to clients.[154] The effectiveness of barring non-audit services is questionable. While replacing an audit firm requires SEC disclosure, a company that reduces or eliminates its firm's permissible non-audit services can avoid disclosure.[155] Depending on the magnitude of the non-audit service revenue, this can put the firm in the same compromising position. Further, the classification of what constitutes a prohibited non-audit service is crucial and accounting firm abuse of that classification has resulted in several SOX violations, leading some to call for firms to split audit and non-audit services to truly assure independence.[156]

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[151] Herwitz, *supra* note 86, at 96–97.
[152] DAVIDSON & SCHUWERK, *supra* note 12, at 43.
[153] Cox, *supra* note 80, at 307 (citing 15 U.S.C.A. § 78j-1 (2020)) ("A key provision of the Act anchors the accountant's relationship in the audit committee and not in management.").
[154] *Id.* at 317 (citing 15 U.S.C.A. § 78j-1(g) (2020)). ("Sarbanes-Oxley bars accountants from providing certain nonaudit services to their clients and mandates preapproval by the audit committee for those nonaudit services not barred that are to be performed for the client.")
[155] *Id.* at 313 ("Management, unhappy with the auditor's 'second guessing' management's artful use of accounting principles, could, of course, threaten to terminate the relationship. Under the current regulatory regime, this threat can easily be stared down by the auditor; to replace the accountant requires a prompt public disclosure on SEC Form 8-K, raises eyebrows within the investment community, and likely invites inquiry from the SEC. On the other hand, reducing or eliminating the amount of nonaudit services provided by the auditor is not required to be disclosed on Form 8-K.").
[156] Steven Mintz, *Now Is the Time to Operationally Split Audit and Nonaudit Services,* CPA J. (Dec. 2020), https://www.cpajournal.com/2020/12/01/now-is-the-time-to-operationally-split-audit-and-nonaudit-services/ [perma.cc/DP6E-6FRE] ("[A]udit firms have misrepresented nonaudit services as part of the audit services to get around the rules that prohibit certain nonaudit services for audit clients… Several settlements between the SEC and PCAOB and large accounting

In addition to firm independence, auditing standards governing management estimates are also crucial to ensuring climate risk is adequately incorporated. FASB, in its response to the SEC's 2004 principles-based accounting standard study, found that auditors preferred detailed rules to reduce the need for professional judgment particularly "in areas involving accounting estimates, uncertainties, and inherent subjectivity."[157] Given the potential balance sheet impacts of some management estimates, the PCAOB requires auditors to perform procedures on accounting estimates.[158] When there is a risk of material misstatement of accounting estimates in significant accounts and disclosures, under Auditing Standard (AS) 2501, auditors must design targeted procedures to address that risk.[159] This includes "evaluating whether the accounting estimates are in conformity with the applicable financial reporting framework and reasonable in the circumstances, as well as evaluating potential management bias in accounting estimates and its effect on the financial statements."[160] When evaluating the reasonableness of significant assumptions, auditors should incorporate a number of factors including relevant industry, regulatory and economic conditions, the company's business risks, and changes in conditions that may affect the company.[161]

Further, industry specific accounts, like proved reserves, often trigger additional verification requirements. AS 2705 requires auditors to perform additional procedures on required supplementary information.[162] PCAOB interpretation of AS 2705 identifies proved

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firms illustrate what happens when audit firms have provided nonaudit services to audit clients in violation of independence. In these cases, the firms represented that they were independent in audit reports when they were not, in violation of SEC Rule 2-02(b) of Regulation S-X and PCAOB Rule 3525.").

[157] FIN. ACCT. STANDARDS BD., *supra* note 88, at 7.

[158] PUB. CO. ACCOUNTING OVERSIGHT BD, *supra* note 105, at §.05 ("This includes applying substantive procedures to accounting estimates in significant accounts and disclosures.").

[159] *Id.* ("The Auditor's Responses to the Risks of Material Misstatement, requires the auditor to design and implement appropriate responses that address risks of material misstatement.").

[160] *Id*.

[161] *Id.* at §16. (explaining the auditor should evaluate the reasonableness of the significant assumptions used by the company to develop the estimate).

[162] AUDITING STANDARDS OF THE PUB. CO. ACCOUNT. OVERSIGHT BOARD, AS 2705: Required Supplementary Information §.07 (PUB. CO. ACCOUNTING

reserves as particularly complex and imprecise and requires auditors to inquire of management regarding its estimates including about "subsequent events, important economic factors, or significant uncertainties affecting particular components of the reserve quantity information…"[163] Further, proved reserves are often considered a critical audit matter (CAM) given that they "relate[] to accounts or disclosures that are material to the financial statements . . . [and] . . . involved especially challenging, subjective, or complex auditor judgment."[164] The auditor must communicate identification of a matter as a critical audit matter to the audit committee and describe how it was addressed in the audit.[165]

A. Updating Auditing Standards to Account for Climate Risk

While auditors have identified accounts involving management discretion as critical audit matters, the accompanying descriptions are often lacking, especially relative to European counterparts. In 2020, auditors identified Exxon's estimation of oil of proved oil and natural gas reserves and impairment of those reserves as critical audit matters given "the significant judgment by management" and "high degree of auditor judgment."[166] The

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OVERSIGHT BD. 2021), https://pcaobus.org/oversight/standards/auditing-standards/details/AS2705 [perma.cc/Z5MG-Z7Q3] (explaining the supplementary information for auditors).

[163] PUB. CO. ACCOUNT. OVERSIGHT BD., AI 19: REQUIRED SUPPLEMENTARY INFORMATION: AUDITING INTERPRETATIONS OF AS 2705 (2020), https://pcaobus.org/oversight/standards/auditing-interpretations/details/AI19 [perma.cc/Q3T3-F9HL].

[164] AUDITING STANDARDS OF THE PUB. CO. ACCOUNT. OVERSIGHT BOARD, AS 3101: THE AUDITOR'S REP. ON AN AUDIT OF FINANCIAL STATEMENTS WHEN THE AUDITOR EXPRESSES AN UNQUALIFIED OPINION §.11 (PUB. CO. ACCOUNT. OVERSIGHT BD. 2021), https://pcaobus.org/oversight/standards/auditing-standards/details/AS3101 [perma.cc/BM98-6ZZV].

[165] *Id*.

[166] ExxonMobil Corp., Annual Report (From 10-K) 63 (Feb. 24, 2021), https://corporate.exxonmobil.com/-/media/Global/Files/investor-relations/annual-meeting-materials/annual-report-summaries/2020-Annual-Report.pdf [perma.cc/MQ58-D72P] (determining what the principal considerations for performing procedures relating to the impact of proved oil and natural gas reserves on upstream PP&E, in a critical audit matter are).

auditor's description of these critical audit matters and its procedures however is general and typically repeats boilerplate PCAOB language.[167] This is unfortunately not uncommon. In a 2020 speech, PCAOB board member J. Robert Brown Jr. stated that "[o]nly three of the approximately 2,400 or so audit reports with CAMS [critical audit matters] appear to have included a meaningful discussion of the impact of climate change on the financial statements."[168]

However, this is in stark contrast to a recent National Grid UK audit report which explicitly identifies the effects of climate change on property, plant, and equipment as a critical audit matter and has a detailed description of the risk and procedures.[169] The auditors specifically describe how transition risk may affect National Grid's assets especially given the company's net zero targets:

> As the continued use of natural gas as a primary energy source beyond 2050 appears to be in conflict with net zero targets and the impact of shortening the useful lives of the gas assets to 2050 has a material impact on annual depreciation, we identified a 'higher' risk related to the financial statement impact of those commitments, specifically pinpointed to management's judgement in determining the useful lives of gas assets in the context of the net zero commitments.[170]

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[167] *Id.* at 63–64 (outlining generally the critical audit matter considerations).
[168] J. Robert Brown, Jr., Board Member, Pub. Co. Acct. Oversight Bd., Remarks at the Harvard Law School Forum on Corporate Governance: Revealing ESG in Critical Audit Matters (Nov. 19, 2020), https://corpgov.law.harvard.edu/2020/11/19/revealing-esg-in-critical-audit-matters/ [perma.cc/6U7F-AYR5].
[169] *See* ROSS, *supra* note 11, at 19 (citing National Grid plc, Annual Report (Form 20-F) (June 25, 2020)), https://www.nationalgrid.com/document/138746/download) [perma.cc/4HDR-SMM2] (stating that some audit reports discuss "climate related matters," such as "the role of climate strategy in shortening an asset's useful life . . .").
[170] National Grid plc, Annual Report (Form 20-F) 273 (June 25, 2020). The auditors also present a detailed list of how they challenged management's judgment including "performing an assessment of the likelihood of occurrence of alternative scenarios for achieving net zero targets." *Id* at 274.

As a short-term solution, the PCAOB could require auditors to provide more thorough and detailed descriptions of climate risk and associated audit procedures. As suggested by Samantha Ross, the PCAOB should "issue audit guidance and, as needed, amend PCAOB audit standards to explicitly address, and provide examples related to, auditing climate impacts on financial statements."[171] Accounting and legal scholar Professor David Herwitz has also suggested that for each significant accounting treatment "the auditor's report should disclose any alternative treatment the auditor is aware of that would either produce a more full, fair, or meaningful presentation, or would have been chosen if the auditor was making the final decision, and the reasons for the choice actually made."[172] While the exact content of PCAOB climate risk guidance is debatable, recommendations by Samantha Ross and Professor Herwitz provide a strong foundation to better inform both investors and audit committees of the climate risks companies are facing.

V. Oil & Gas Accounting Standards Recommendations

In addition to auditing standards, the accounting standards and cases explored above demonstrate the inadequacy of some of the current U.S. GAAP standards in the oil and gas industry.[173] Accounting standards need to balance the uncertainty associated with making predictions about the future with enabling management to be willfully blind to future unfavorable economic conditions. Some oil and gas companies have been more transparent about how climate change affects their business, which demonstrates the promise of existing standards.[174] However, these companies are the exception and, while a significant amount of litigation and this Note focuses on Exxon, it is only one of several oil and gas companies allegedly attempting to mislead about climate risk to maintain existing market positions.[175] To combat this risk, the SEC should reaffirm some of its

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[171] ROSS, *supra* note 11, at 22.
[172] Herwitz, *supra* note 86, at 104.
[173] *See, e.g.*, *supra* note 143.
[174] *See, e.g.*, *supra* note 129 and accompanying text (describing recent changes to oil price assumptions by BP and Total S.A. which stemmed from recognition of the effects of the energy transition and company net-zero commitments resulting in millions of dollars of asset impairments at both companies).
[175] *See, e.g.*, Chris McGreal, *Big oil and gas kept a dirty secret for decades. Now they may pay the price*, GUARDIAN (June 30, 2021),

previous guidance as well as use its oversight authority to require FASB to provide more climate risk guidance and either modify existing accounting standards or directly incorporate other sustainability-based accounting standards.

A. SEC & FASB Clarifications to Existing Accounting Standards

The SEC and FASB could make a couple minor changes that would reduce management discretion and ensure more consistent incorporation of climate risk into asset values in the oil and gas industry. First, the SEC should reaffirm its 2001 interpretative guidance that "[e]conomic uncertainties such as the lack of a market (e.g. stranded hydrocarbons) . . . can also prevent reserves from being classified as proved."[176] Throughout its enforcement efforts, the SEC should incorporate this guidance and closely scrutinize oil company assumptions of future conditions, as it did in its 2004 Shell proceeding.[177] This should also include "ensuring consistency between company narrative reporting and the financial statements."[178] Beyond the SEC, FASB should modify existing standards to require analysis of future economic conditions not only for impairment analysis under ASC 360-10-3, but also for the initial booking of reserves under ASC 932.

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https://www.theguardian.com/environment/2021/jun/30/climate-crimes-oil-and-gas-environment [perma.cc/VQG9-8QTE] ("An unprecedented wave of lawsuits, filed by cities and states across the US, aim to hold the oil and gas industry to account for the environmental devastation caused by fossil fuels – and covering up what they knew along the way."); *State Suits Against Oil Companies,* STATE ENERGY & ENV'T IMPACT CTR. N.Y.U. SCH. L., https://www.law.nyu.edu/centers/state-impact/issues/climate-action/suits-against-oil-companies [perma.cc/T3FD-42UQ] (last visited Aug. 20, 2021) (summarizing current state suits against the oil industry).

[176] *See* SEC, *supra* note 121.

[177] *See In re* Royal Dutch Petroleum Co., *supra* note 122, at 10 ("Apart from the divergence of these 'assumptions' from the requirement in Rule 4-10 that proved reserves be based on 'existing conditions,' none of these assumptions was reasonable, particularly in light of the fact that SPDC's operations performed well below the projected levels throughout the period.").

[178] DAVIDSON & SCHUWERK, *supra* note 12, at 46.

FASB should also provide more specific and detailed climate risk guidance. In March 2021, FASB attempted to provide some clarity by publishing an educational paper examining the intersection of ESG and accounting standards, but it largely reinforced management discretion.[179] The paper described how "an entity may consider the effects of certain material ESG matters" including that "an entity may consider certain ESG matters as an input to an accounting analysis."[180] FASB provided an example that "a material decline in demand during the reporting period may be a consideration when estimating future cash flows used in a long-lived asset or goodwill impairment analysis."[181] The consistent use of "may" and focus on demand declines "during the reporting period" instead of potential future declines involved with transition risk demonstrates that management still retains significant control.

The closest FASB comes to addressing transition risk is its discussion of Topic 275, involving risk and uncertainties, and Topic 360 about property, plant, and equipment, but even that is lacking.[182] FASB described that under Topic 275, "[t]he guidance also requires disclosure of significant estimates that may be particularly sensitive to change . . . . The guidance encourages (does not require) disclosure of the factors that cause the estimate to be sensitive to change . . . ."[183] Its discussion about Topic of 360 simply reinforced that "[e]nvironmental matters could give rise to impairment indicators; for example, a material decline in market demand for products or a change in regulation that adversely affects an

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[179] FIN. ACCT. STANDARDS BD., FASB STAFF EDUCATIONAL PAPER: INTERSECTION OF ENVIRONMENTAL, SOCIAL, AND GOVERNANCE MATTERS WITH FINANCIAL ACCOUNTING STANDARDS 1 (2021), https://www.fasb.org/jsp/FASB/Document_C/DocumentPage&cid=1176176379917 [perma.cc/R57J-FDUH] ("The FASB staff developed this educational paper to provide investors and other interested parties with an overview of the intersection of ESG matters with financial accounting standards.").

[180] *Id.* at 3.

[181] *Id.*

[182] *Id.* at 4, 6.

[183] *Id.* at 4.

entity could indicate that a manufacturing plant may be impaired."[184] These descriptions arguably strengthen management discretion, don't explicitly acknowledge climate risk, and still mostly focus on limited qualitative disclosures.

In 2020, the International Accounting Standards Board (IASB), the IFRS standard-setting board, and the IFRS Foundation, which oversees IASB, also published materials examining how climate-related matters may be incorporated in current IFRS. These materials provide some more useful insights while reducing management discretion. The most significant illustration is IAS 36 regarding impairment of assets. The materials stated that when estimating the recoverable amount of assets, "[a] company is *required* to base cash flow projections on *reasonable and supportable assumptions* that represent management's best estimate of the range of *future conditions*."[185] (emphasis added). The materials go on to state that "[t]his *requires* companies to consider whether climate-related matters affect those reasonable and supportable assumptions."[186] (emphasis added). The obligatory language and specific reference to future conditions significantly depart from FASB's materials.

Under the "Sources of estimation uncertainty and significant judgements" section of IAS 1, the materials similarly state that "disclosure of assumptions about climate-related matters may be required, for example when those matters create uncertainties that affect assumptions used to develop estimates, such as estimates of future cash flows when testing an asset for impairment…"[187] However, the IFRS also states that the disclosure *must* be presented "in a manner

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[184] *Id.* at 6.

[185] IFRS FOUND., EFFECTS OF CLIMATE-RELATED MATTERS ON FINANCIAL STATEMENTS 4 (2020), https://www.ifrs.org/content/dam/ifrs/supporting-implementation/documents/effects-of-climate-related-matters-on-financial-statements.pdf [perma.cc/4MJS-YBKM].

[186] *Id.*

[187] *Id.* at 2.

that helps investors understand the judgments that management makes about the future" and cited specific examples like "the nature of the assumptions or the sensitivity of carrying amounts to the methods, assumptions and estimates underlying their calculation, including the reasons for the sensitivity."[188] While discussing property, plant and equipment IFRS standards, the materials described how climate-related matters may effect residual values and useful life of assets specifically referencing "obsolescence, legal restrictions, or inaccessibility of the assets."[189] Although not explicitly, these references encompass transition and physical risk and IFRS standards require companies to disclose "the nature and amount of any change in estimated residual values or expected useful lives."[190]

Overall, the IFRS materials reduce management discretion by providing specific requirements that recognize the potentially significant financial impacts of climate risk. There is also empirical evidence that IFRS' stricter framework has been beneficial, with a 2021 Carbon Tracker Initiative report finding that "[m]ore companies (41%) that reported under IFRS demonstrated consideration of climate matters than those using US GAAP (5%).[191] In other words, nearly all US GAAP companies were assessed as being of 'significant concern' versus 59% of those applying IFRS."[192] As a result, the IFRS approach may serve as a model for FASB.

B. Incorporation of Sustainability-Based Accounting Standards

While many believe that existing financial accounting standards can effectively accommodate climate risk with some

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[188] *Id.*
[189] *Id.* at 3.
[190] *Id.*
[191] DAVIDSON & SCHUWERK, *supra* note 12, at 20.
[192] *Id.* The report also found that "[c]ompanies using IFRS appeared to be more consistent across their reporting with respect to climate matters than those applying US GAAP." *Id.* at 25.

additional SEC guidance and enforcement,[193] that alone may not be enough. As mentioned throughout this Note, climate change and the accompanying transition presents an existential threat to many companies, particularly in the oil and gas industry, so the incentive for abuse of existing management discretion is high. Proposals by SASB provide some insight into how accounting standards could be modified to reduce management discretion to ensure that climate risks are more accurately and reliably reflected in financial statements.[194]

In 2017, SASB, a non-profit sustainability standards organization, published its voluntary conceptual framework for sustainability accounting which outlined the framework's key principles.[195] The organization's standards process aims to "produce standards for information that is reasonably likely to be material; decision-useful for companies and their investors; and cost-effective for corporate issuers."[196] SASB uses the same materiality definition as the SEC,[197] and intends its standards to be "evidence-based, market-informed, [and] industry-specific."[198] Industry-specific means that SASB standards are set at the industry level where companies "are likely to have similar sustainability risk and opportunities."[199] While some current accounting standards are industry-specific, setting all standards at the industry level is a departure from the traditional standards process,[200] but likely more accurately reflects the unique nature of climate risk.

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[193] *Id.* at 46. (suggesting that several factors recommended by the SEC, if implemented and considered, could effectively accommodate climate risk).
[194] SUSTAINABILITY ACCT. STANDARDS BD., SASB CONCEPTUAL FRAMEWORK (2017) (explaining that the SASB proposals purpose is to produce standardized information that is material, useful, and cost-effective and thus reduce risks).
[195] *See id.* (illustrating that the purpose of the core objectives of SASB are to produce standard information that is material, useful, and cost-effective).
[196] *Id.* at 9.
[197] *Id.* ("SASB applies the definition of "materiality" established under the U.S. securities laws.").
[198] *Id.* at 12.
[199] *Id.* at 16.
[200] *Id.* ("[T]raditional classifications systems (e.g., SIC, GICS, and BICS)… categorizes sectors and industries in accordance with a fundamental view of their business models, their resource intensity and sustainability impacts, and their sustainability innovation potential.").

SASB standards for reserve valuation in the oil and gas industry provide an example of how more rigorous accounting standards might provide investors with more valuable information regarding exposure to climate risk.[201] While the standards still require compliance with the §210.4-10 definition of proved reserves, companies would be required to perform a sensitivity analysis of hydrocarbon reserve levels based on price trajectory scenarios published by the International Energy Agency.[202] The scenarios would include a current scenario with no policy changes, a new policy scenario assuming broad policy commitments and plans announced by countries, and a sustainable development scenario assuming an energy pathway consistent with limiting the global temperature below 2°C.[203] Oil and gas companies could not cherry-pick favorable scenarios and assumptions.[204] Overall, scenario analysis is a method favored by several organizations beyond SASB, some of which have also provided guidance about best practices.[205]

In addition, companies would be required to discuss how the price and demand projections incorporated in these scenarios affect capital expenditure strategy.[206] They would also have to disclose the

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[201] See generally SUSTAINABILITY ACCT. STANDARDS BD., OIL & GAS – EXPLORATION & PRODUCTION (2018). ("SASB standards are intended for use in communications to investors regarding sustainability issues that are likely to impact corporate ability to create value over the long term.").
[202] *Id*. at 37
[203] *Id.*
[204] *Id*. ("The entity shall analyze the sensitivity of its current proven and probable reserves using the price trajectories published by the international Energy Agency (IEA)…").
[205] *See, e.g.,* TASK FORCE ON CLIMATE-RELATED FIN. DISCLOSURES, THE USE OF SCENARIO ANALYSIS IN DISCLOSURE OF CLIMATE-RELATED RISKS AND OPPORTUNITIES, at 1 (2017), https://assets.bbhub.io/company/sites/60/2021/03/FINAL-TCFD-Technical-Supplement-062917.pdf [perma.cc/T4XA-QKG2] ("Scenario analysis is a well-established method for developing input to strategic plans in order to enhance plan flexibility or resiliency to a range of future states."); GLOB. REPORTING INIT., GRI 11: OIL AND GAS SECTOR 2021, at 17 (2021) ("Scenario analysis is well suited to explore the risks that transitioning to a low-carbon economy poses to oil and gas organizations because it allows them to consider alternative forms of future states simultaneously.").
[206] SUSTAINABILITY ACCT. STANDARDS BD., *supra* note 200, at 40 ("The entity shall discuss how projections for price and demand for hydrocarbon products and the path of climate regulation influence the entity's capital expenditure (CAPEX) strategy.").

total amount invested in and sales generated from renewable energy sources.[207] The level of analysis embodied in SASB standards would provide the quantitative and qualitative information necessary for investors to identify potential stranded assets, understand the company's preparedness for the energy transition, and evaluate its general exposure to climate risk.

VI. Conclusion

Climate risk, and transition risk in particular, remains inadequately incorporated in public financial statements in the oil and gas industry. However, some may argue that existing shareholder and legal mechanisms will ensure the accuracy of climate risk data, management estimates, and assumptions, making modifications to accounting standards unwarranted. May 2021 was undoubtedly a peak for climate activism in the oil and gas industry. In particular, May 26th was a banner day.[208] A Dutch court "ordered Shell to ensure its net carbon emissions were 45 percent lower in 2030 than in 2019. . . "[209] While Shell will appeal the decision, it could provide a roadmap for similar suits against fossil fuel companies.[210] On the same day, Engine No. 1, a relatively small and unknown hedge fund, managed to eventually secure three board seats at Exxon after waging a campaign critical of the company's response to climate change.[211] Engine No. 1, possessing only .02% of Exxon shares, convinced large institutional investors like BlackRock to vote for its

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[207] *Id.*

[208] Derek Brower & Anjli Raval, *Climate activists hail breakthrough victories over Exxon and Shell*, FIN. TIMES (May 26, 2021), https://www.ft.com/content/fa9946b9-371b-46ff-b127-05849a1de2da ("Big Oil has suffered a climate backlash after a court ordered Royal Dutch Shell to aggressively slash carbon emissions and ExxonMobil shareholders backed an activist investor that said the supermajor faced 'existential risk' because of its focus on fossil fuels.").

[209] Anjli Raval, *Dutch court orders Shell to accelerate emissions cuts*, FIN. TIMES (May 26, 2021), https://www.ft.com/content/340501e2-e0cd-4ea5-b388-9af0d9a74ce2.

[210] *Id.* ("The ruling could set a precedent for similar cases against the world's biggest corporate polluters, which may now face similar lawsuits.").

[211] Matt Phillips, *Exxon's Board Defeat Signals the Rise of Social-Good Activists,* N.Y. TIMES (June 9, 2021), https://www.nytimes.com/2021/06/09/business/exxon-mobil-engine-no1-activist.html?smid=tw-nytimes&smtyp=cur.

board candidates largely by emphasizing Exxon's unpreparedness for the energy transition.[212] 61% of Chevron shareholders also voted for a proposal to reduce the company's Scope 3 emissions which are generated by consumer energy usage.[213] These shareholder activities represent a movement of investors engaging with companies and governments to more aggressively address climate change.[214]

However, shareholder proposals and legal remedies may not be dependable mechanisms to incorporate climate risk. First, shareholder proposals are often non-binding, leaving companies with discretion on whether and how to implement the proposal.[215] In

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[212] ENGINE NO. 1, REENERGIZE EXXONMOBIL: INVESTOR PRESENTATION 6 (2021), https://assets.contentstack.io/v3/assets/bltc7c628ccc85453af/blt3dbbabebb3dbed9d/611e6bf1e8898d66a7c9495c/Investor-Presentation-May-2021-v2_(1).pdf [perma.cc/EC49-L8Q8] ("A refusal to accept that fossil fuel demand may decline in decades to come has led to a failure to take even initial steps towards evolution, and to obfuscating rather than addressing long-term business risk.").

[213] Shariq Khan, *Chevron investors back proposal for more emissions cuts*, REUTERS (May 26, 2021), https://www.reuters.com/business/energy/chevron-shareholders-approve-proposal-cut-customer-emissions-2021-05-26/.

[214] A number of investor coalitions have been formed to address private sector climate commitments including Climate Action 100+ which involves 575 investors with over $54 trillion in managed assets. *See How We Work*, CLIMATE ACTION 100+ (last visited June 12, 2021), https://www.climateaction100.org/approach/how-we-work/ [perma.cc/MAC4-ZWXX] ("investors commit to engaging with at least one of 167 focus companies that are strategically important to the net-zero emissions transition and to seek commitments on the initiative's key asks…"). There are also investor coalitions focused on engaging with governments to meet emission targets. *See, e.g.,* Jasper Jolly, *Leading investors urge governments to end support for fossil fuels*, THE GUARDIAN (June 10, 2021), https://www.theguardian.com/business/2021/jun/10/investors-governments-end-support-fossil-fuels-assets-net-zero-targets ("Investors controlling $41tn (£29tn) in assets have called for governments around the world to end support for fossil fuels and set targets for rapid reductions in carbon emissions to limit the damage from global heating.").

[215] Stanford Lewis, Shareholder Rights Group, *Analysis and Recommendations on Shareholder Proposal Decision-Making under the SEC No-Action Process*, HARV. L. SCH. F. ON CORP. GOVERNANCE (July 26, 2018), https://corpgov.law.harvard.edu/2018/07/26/analysis-and-recommendations-on-shareholder-proposal-decision-making-under-the-sec-no-action-process/

addition, the May 2021 shareholder proposal season was a historical anomaly for climate proposals.[216] Ceres tracks climate shareholder proposals and found that "[i]nvestors filed at least 140 climate-related shareholder proposals at U.S. companies during the 2020 proxy season…"[217] Out of those 140 climate-related proposals, "[s]ix proposals won majority votes in favor compared to only one that garnered a majority of shareholder approval in 2019."[218] While a number of cases are still pending, the *People of the State of New York v. Exxon Mobil Corp*. case demonstrated the difficulty of litigating climate risk in the securities context, and the replicability of the *Shell* case remains uncertain with the appeal.[219] As a result, there is significant uncertainty about whether lawsuits or shareholder proposals can sufficiently influence companies to incorporate climate risk.

While some companies have been more forthcoming, others have used management discretion embodied in accounting standards to obfuscate and ignore business risks posed by the ongoing energy transition. Lax auditing standards have allowed management assumptions and estimates to go largely unchallenged. However, there are strong incentives for oil and gas management teams to use overly optimistic assumptions and estimates to preserve current business positions. The Fourth Circuit once defined a "reasonable investor" as "neither an ostrich, hiding her head in the sand from relevant information, nor a child, unable to understand the facts and risks of investing."[220] This could also define a reasonable management team in relation to business risks; a reasonable

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[perma.cc/7VGN-JHHD] (discussing how shareholder proposals are typically non-binding which offers flexibility investors with diverse goals and objectives).

[216] Rob Berridge, *How climate proposals fared during the 2020 proxy season*, GREENBIZ (Sep. 14, 2020), https://www.greenbiz.com/article/how-climate-proposals-fared-during-2020-proxy-season (noting how shareholder proposals garnered record levels of support in 2020).

[217] *Id.*

[218] *Id*.

[219] *See* People of the State of New York v. Exxon Mobil Corp., No. 452044/2018, 2019 WL 6795771, 9-10 (Sup. Ct. N.Y. Dec. 10, 2019); Faucon, et al., *supra* note 21.

[220] Greenhouse v. MCG Cap. Corp., 392 F.3d 650, 656 (4th Cir. 2004) (citing Hillson Partners L.P. v. Adage, Inc., 42 F.3d 204, 213 (4th Cir.1994)).

management team should not hide from, nor ignore, pertinent business risks. To prevent management teams from using their discretion to hide their heads in the sand regarding climate risk, the PCAOB should modify auditing and accounting standards, leveraging insights from the IFRS Foundation and SASB to reduce management discretion related to climate risk and ensure more accurate financial statements.