

Reliable Scope 3 Emissions Disclosures are Key to Addressing Climate-Related Financial Risks

A Plastics Industry Case Study

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Executive Summary:

- The Security and Exchange Commission’s proposal to mandate climate risk disclosures, introduced on March 21, 2022, represents important progress for investors and other market participants, but it fails to mandate a critical metric of climate-related risk: Scope 3 emissions disclosures for large registrants.
- Using the case study of plastic resin producers, we demonstrate in this paper that Scope 3 emissions disclosures are essential to investors and that Scope 1 and 2 emissions disclosures are not sufficient to evaluate material transition risks and opportunities for reducing those risks.
- The plastics industry has high exposure to volatile fossil fuel prices and faces increasing and interconnected policy, litigation and reputational risks related to greenhouse gas (GHG) and other forms of plastic pollution that will drive demand destruction and increased liabilities along the plastics value chain.
- To fulfill its mission of protecting investors and enabling fair, orderly and efficient markets and capital formation, the SEC should mandate Scope 3 GHG emissions disclosures for large registrants with reasonable assurance.
- Giving large registrants broad discretion to decide whether to disclose Scope 3 emissions and failing to require reasonable assurance will not fully address the market inefficiencies caused by the lack of comparable and reliable GHG emissions disclosures, nor fully protect investors from these risks. Claims that data are not available and reasonable assurance is infeasible are belied by the large number of companies already voluntarily disclosing Scope 3 GHG emissions and auditors’ existing approaches to data uncertainty.

The SEC's Rules on Climate-Related Financial Disclosures Fail to Mandate a Critical Metric of Risk – Scope 3 Greenhouse Gas Emissions

On March 21, 2022, the U.S. Securities Exchange Commission (SEC) invited comments on a [proposed rule](#) requiring issuers of securities registered with the agency (“registrants”) to disclose their climate-related financial risks to investors and the public. One of the most important topics during the public comment period will be whether registrants should be required to disclose Scope 3 greenhouse gas (GHG) emissions, i.e., emissions from upstream and downstream activities in the companies’ value chains.¹ Taking a case study approach to this question, this white paper analyzes the Scope 3 emissions-related financial risks faced by companies making one of the most ubiquitous human-made materials on the planet: plastics.

The proposed rule would make a significant number of improvements to reporting on climate risks that investors have been demanding, including valuable guidance on how companies must disclose Scope 1 and 2 emissions and how they integrate climate-related risks and opportunities into their planning. However, a major shortcoming of the proposed rule is that it does not mandate Scope 3 disclosures for all large registrants. Disclosures are required only when Scope 3 emissions are deemed by registrants to be material or when registrants set GHG emissions reduction targets that include Scope 3 emissions. The proposal allows registrants to determine for themselves which emissions are material, and therefore warrant disclosure. This is the approach the SEC adopted in 2010 when it issued its first guidance on climate risk. As discussed below, this approach has allowed many companies to avoid making any substantive, reliable climate disclosures—let alone Scope 3 disclosures—at a time when investors are asking for standardized information on climate risk.

In the past, [the SEC has recognized](#) that certain data are so important to investors and other market participants that they cannot be left to the discretion of registrants; they are thus required as part of standard baseline disclosures. Using the illustrative case study of the plastics industry, we demonstrate below why Scope 3 emissions disclosures meet this threshold. Investors assessing climate-related risks and opportunities need a reliable source of Scope 3 emissions data and should

not be forced to rely on registrants to come to the same conclusion about the materiality of this critical disclosure.

Fortunately, the SEC recognizes in its proposal that undisclosed GHG emissions pose significant problems for investors concerned about climate risk. However, in adopting its approach to Scope 3 emissions disclosures, it may not have evaluated the behavior of carbon-intensive companies in financial markets. [Research shows](#) that a large percentage of companies in carbon-intensive sectors, including in the plastics industry, have been leaving investors in the dark about the extent of their climate-related financial risks and how they are managing those risks. Even if a reasonable investor would consider this information important, it is unlikely these companies will disclose Scope 3 emissions unless they are explicitly mandated to do so.

Scope 3 emissions represent a potentially significant area of material [transition risk](#) for plastics producers, manufacturers and consumer brands that rely heavily on plastics for their products. Current capital allocation trends demonstrate this risk: [many petrochemical companies are increasing investments in plastics](#) production as a decarbonization strategy, fueled by misconceptions about the downstream emissions from plastics manufacturing and disposal (discussed in the case study, below). Without a credible plan to reduce Scope 3 emissions, these companies face the risk that their value will be negatively impacted by the transition to a lower-carbon global economy. External factors, such as policy and legal actions, technology changes, market responses, and reputational considerations all contribute to this risk. From a plastic resin manufacturer perspective, these dynamics can be harmful to the company’s financial condition whether they play out upstream (e.g., through major changes in feedstock input costs) or downstream (e.g., via reputational and policy risk from changing consumer preferences) of the company’s operations. Further, savvy investors will want to know which companies are pursuing available climate-related opportunities – to decarbonize, enhance competitiveness, and identify new business models – throughout the plastics value chain.

By requiring that all large registrants disclose Scope 3 GHG emissions, the SEC will ensure that investors have the relevant information they would consider important

¹ According to the [GHG Protocol](#), a company’s GHG emissions fall into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect

emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions, not included in Scope 2, that occur in the value chain of the reporting company, including both upstream and downstream emissions.

to efficiently and effectively assess climate-related financial risk and make sound decisions. This is squarely within the SEC’s mandate to protect investors and facilitate fair, orderly, and efficient markets and capital formation. Such a requirement will impose minor additional burdens on large registrants given that they are already required under the 2010 guidance to disclose “material” climate risks; evaluating whether their Scope 3 emissions are material already requires such measurement.

The Plastics Industry’s GHG Emissions are Growing Rapidly Despite Concerns from Investors and other Market Participants

Investors and other market participants are increasingly recognizing that reducing GHG emissions is critical for both financial performance and environmental sustainability. For example, the [Climate Action 100+ initiative](#), an investor collaborative representing over half of global assets under management, is working to ensure the world’s largest corporate emitters take action on climate change consistent with Paris Agreement targets. Similarly, the insurance industry is increasingly withdrawing coverage from assets facing physical climate risk and carbon-intensive companies that fail to develop credible transition plans. For example, [Swiss Re recently announced](#) that by 2030 it will do business only with net-zero aligned companies in the oil and gas sector, including petrochemicals companies.

Despite these strong market signals about the need to transition to low-carbon business models, the plastics sector is [projected to triple its greenhouse gas emissions in coming decades](#). Many registrants are embarking on a [new generation of petrochemical plants and other fossil fuel infrastructure](#). To assess this growing transition risk, investors need comparable Scope 3 emissions disclosures.

Scope 1 and 2 Emissions Disclosures are Insufficient to Evaluate Transition Risks

The plastics industry provides a useful case study of why reliable Scope 3 emissions disclosures are critical to evaluating transition risk. For plastics, as with other carbon-intensive sectors with a diverse array of

products and economic actors, [multiple actions throughout the value chain](#) will be needed to decarbonize the sector. These actions are currently proceeding slowly and at an uneven pace. Investors need reliable disclosure of Scope 3 emissions to assess how registrants are addressing these decarbonization challenges relative to competitors.²

A recent study from the Ellen MacArthur Foundation shows that focusing solely on the risks posed by plastics producers’ emissions from their use of heat and electricity, Scope 1 and 2 emissions would address only [55% of the reduction of global greenhouse gas emissions](#) needed to achieve Paris targets. Investors concerned about climate risk recognize that addressing the remaining 45% of the plastic industry’s GHG emissions requires advancing a circular economy, which means seizing opportunities to reduce emissions by [reducing material use, redesigning materials to be less resource intensive, and recapturing “waste” as a resource for new materials and products](#). Without a clear understanding of Scope 3 emissions, investors may miss these cost-effective decarbonization opportunities in the plastics value chain.

In the specific case of plastic resin producers, it is clear that investors need Scope 3 emissions data to evaluate whether these registrants are pursuing available opportunities to reduce emissions-related risks. For example, upstream emissions of methane from the production of plastic feedstocks vary significantly; the emissions intensity of a barrel of oil can vary [as much as 80% depending on where it is produced](#).³ Downstream, the emissions from processing resin varies based on where manufacturing occurs.⁴ The [emissions associated with plastics manufacturing have doubled since 1995](#), as an increasing proportion is occurring where coal-based power generation is prevalent. Contrary to the popular misconception that [plastics act as a form of carbon sequestration](#), research shows that [emissions from end of life treatment of plastics](#)⁵ [can be as significant as those from plastic production](#), particularly if plastics are disposed via waste-to-energy, open burning or incineration of waste, the prevalent disposal strategies in geographies where growth in plastics use is expected. Finally, the degradation of plastic waste in the marine environment [accelerates the release of methane and ethylene, both potent GHGs](#); emerging research also shows that microplastics in the

² Each stage of the plastics value chain is also affected by extreme weather and other climate change impacts. Investors need information on how issuers are managing this physical risk.

³ This activity falls within GHG Protocol Scope 3, Category 1, Purchased Goods and Services.

⁴ This activity falls within GHG Protocol Scope 3, Category 10, Processing of Sold Products.

⁵ This activity falls within GHG Protocol Scope 3, Category 12, End-of-Life Treatment of Sold Products.

ocean have toxic effects on zooplankton which [may impede the ocean's ability to absorb carbon](#).

For plastic resin producers, each of these sources of Scope 3 emissions represents potentially significant liabilities or opportunities to gain a competitive advantage as policies change to increase accountability for GHG emissions and other plastic pollution along the value chain. Investors need to evaluate which producers are shifting to new sourcing and business lines to adapt to this changing landscape. Given research confirming that the [lowest cost decarbonization options for the plastics sector](#) lie in opportunities to improve materials efficiency and reuse, focusing solely on Scope 1 and 2 emissions makes little business sense.

Plastics Face a Major Transition Risk: Double Exposure to Volatile Fossil Fuel Prices

The plastics industry has an unusual level of vulnerability to fossil fuel prices that amplifies their transition risk. In the chemical plants where plastic resin is produced, oil and gas serve as the feedstock for [99% of plastics products](#). Fossil fuels are also the primary source of energy needed to manufacture plastics, making these plants doubly exposed to volatile fossil fuel prices. Considering both of these uses together, fossil fuels [make up 70% of input costs](#). In fact, the chemicals sector is the [largest industrial consumer of both oil and gas](#), accounting for 14% and 8% of total primary demand for each fuel respectively.

As the [crisis in Ukraine](#) and the [COVID-19 pandemic](#) demonstrate, this heavy reliance on fossil fuels leaves plastic resin producers, as well as downstream companies such as major consumer brands, exposed to enormous price shocks and supply volatility. Disclosure of Scope 3 emissions is critical for investors evaluating a registrant's performance in managing this risk. Non-disclosure of these emissions will lead to continued [mispricing of climate risk, capital destruction and misallocation of capital](#) away from investment opportunities with less exposure to this risk.

Registrants Face the Risks of Policy Action, Voluntary Demand Reduction, Litigation and Reputational Damage Due to the Intertwined Problems of GHG Emissions and Other Pollution

Around the world, policy makers, major corporations, NGOs and the public are paying close attention to plastics. Spurred by a [popular outcry](#) and what U.N. officials call a ["triple planetary crisis of climate change,](#)

[nature loss and pollution.](#)" governments have begun work on the world's first-ever plastics treaty. Marine plastic pollution and GHG emissions are mutually reinforcing: GHG emissions from plastics contribute to [ocean warming, acidification and other long-lasting damage](#) to the marine environment. Plastics themselves persist in the environment for decades, [increasing disease in coral reefs](#), [leaching chemical additives and endocrine disruptors](#) that harm marine life, and [altering the productivity of bacteria and phytoplankton, which generate about half of the planet's oxygen](#). The harmful effects on coastal economies are particularly acute, and include [loss of tourism value from unsightly trash](#) and [impairment of wastewater systems that exacerbate flooding](#).

The array of policy actions already underway to address GHGs and other impacts of plastic pollution pose significant transition risks to registrants in the plastics industry. Given that primary policy solutions are aimed at significantly reducing demand for plastics and increasing accountability for pollution along the value chain, disclosure of Scope 3 emissions provides a useful proxy for investors to assess exposure to these risks. For example, bans on single-use plastics are becoming increasingly prevalent [around the world](#), and extended producer responsibility laws are [gaining momentum in OECD countries](#). As ClientEarth emphasizes in its [report on plastics as a material business risk](#), these regulatory changes "will reduce the demand and increase the costs of many plastic materials and products, thereby changing the economic case for their use."

Similarly, investors in large-scale corporate buyers of plastics are increasingly pressuring these companies to reduce usage. For example, [59% of independent Tyson Foods shareholders](#) recently voted in favor of a proposal calling on the company to reduce its use of plastic packaging in light of regulatory risks and its competitors' efforts to reduce plastic use. Further, many large-scale retailers are adopting corporate policies to reduce plastics demand. For example, [Walmart U.S.](#) has committed to achieving 100% recyclable, reusable or industrially compostable packaging for its private brand by 2025, and [Evian](#) has pledged to make all of its plastic bottles from 100% recycled polyethylene terephthalate (PET) by 2025.

The plastics industry faces extraordinary litigation and reputational risks due to the [public health problems](#), biodiversity loss and other damage caused by its GHGs and other pollution. Investors need Scope 3 emissions disclosures because these data serve as a useful metric

of whether registrants are effectively addressing these interconnected risks throughout the value chain.

Disclosure with Reasonable Assurance is Needed to Ensure Reliability and Comparability

As noted above, the SEC's proposed rule enables large registrants to self-determine whether Scope 3 emissions are material. Even if the registrant concludes that Scope 3 emissions are material, the rule allows them to evade a key responsibility they have with respect to disclosing Scope 1 and 2 emissions disclosures: to secure reasonable assurance from independent verifiers regarding the reliability of those disclosures and to file an attestation of the results with the SEC. (Registrants are granted a generous phase-in period, with reasonable assurance not required for Scope 1 and 2 emissions until 2027 or 2028, depending on company size.)

This lack of mandated reasonable assurance for Scope 3 emissions disclosures will perpetuate the existing market inefficiencies caused by the lack of comparable, reliable data on climate-related risks. Furthermore, by excluding Scope 3 emissions from a reasonable assurance regime, the SEC will make it difficult if not impossible for auditors to validate the registrant's determination regarding the materiality of Scope 3 emissions, thus reducing the reliability of audits.

Despite the growing number of pledges by major companies to address climate risk, many registrants have been opaque about their assessment and management of this risk. In the previously-cited [September 2021 study](#) of 107 carbon-intensive companies, Carbon Tracker found that over 70% ignored material climate issues in their 2020 financial statements while 80% of their auditors ignored them.

This opacity about climate risk is particularly problematic for Scope 3 emissions disclosures. In its [February 2022 report](#) on the climate disclosures of 25 major global companies, the New Climate Institute (NCI) found that companies were not disclosing Scope 3 emissions with transparency and integrity despite the fact that such emissions accounted for 87% of total emissions of the companies studied.

Emissions disclosures affect investor behavior in a number of ways. A [November 2021 study](#) using the Carbon Disclosure Project database of Scope 1 and 2

emissions found that disclosure significantly reduces the cost of capital as reflected in the stock returns required by investors. Moreover, the absence of Scope 3 disclosures creates uncertainty about the risks posed by such emissions. According to the study's authors, disclosure of Scope 1 emissions has a "spillover effect on investors' perceptions of the risk they face with respect to the firm's exposure to indirect (Scope 3) emission risk, but this spillover reflects the imprecise nature of investors' learning process."

These data strongly suggest that Scope 3 emissions are material to investors and that the lack of mandatory and assured Scope 3 emissions disclosures represents a significant risk. To address this obstacle to the efficient functioning of capital markets, the SEC should craft a rule that requires mandatory disclosure of Scope 3 GHG emissions, with reasonable assurance of these disclosures by independent verifiers.

Registrants Should Not be Allowed to Decide for Themselves What Emissions Data Will be Shared with Auditors

As a sector ill-prepared for the energy transition, many firms in the plastics industry have significant incentives to minimize disclosure of GHG emissions and other sources of transition risk. As noted previously, reliance on a firm's own materiality assessment for mandating disclosure of Scope 3 emissions is a recipe for continued lack of transparency. Similarly, proposals to allow registrants to avoid securing the "reasonable assurance" of the reliability of Scope 3 emissions and to instead obtain a "limited assurance" should therefore be rejected. The SEC should take the same approach to limited assurance for Scope 3 disclosures as it takes for Scope 1 and 2 disclosures, a quick phase-in period toward a reasonable assurance.⁶

Although the Public Company Audit Oversight Board (PCAOB) does not authorize limited assurance in annual audits of financial statements, it allows for a variation of limited assurance in quarterly or interim reviews. PCAOB's standard for interim reviews highlights why this approach is inappropriate to address the demonstrated failures by (and lack of incentives of) registrants to voluntarily disclose all GHG emissions: it allows registrants to decide what evidence will be shared with auditors when negotiating the engagement.⁷

⁶ The SEC proposes that registrants be allowed to rely on independent verifiers rather than PCAOB-registered auditors for reviewing emissions disclosures.

⁷ According to [PCAOB AS 4105](#): "[An interim] review consists principally of performing analytical procedures and making inquiries of persons responsible for financial and accounting matters, and does not contemplate (a) tests of accounting records

Limited assurance audits, by definition, entail a greater risk than reasonable assurance audits that the issuer's Scope 3 disclosures will be inaccurate, incomplete or misleading. Unlike in a reasonable assurance audit, in which the burden is on the issuer and auditor to design the audit in a way that enables the auditor to affirmatively state that the disclosures are fair, the auditor in a limited assurance audit is not empowered to request information from the issuer that it deems necessary to make such an affirmative finding. Instead, in a limited assurance audit, the issuer can unilaterally define what information will be shared with the auditor, resulting in a mere statement from the auditor that nothing has come to its attention suggesting that management's assertion is inaccurate.

Some have argued that requiring reasonable assurance is not feasible for Scope 3 emissions disclosures due to the lack of standardized data sets. However, disclosure of Scope 3 emissions is no different than any other disclosures required to be audited or verified by the SEC. Insofar as there is data uncertainty, independent verifiers can take the same approach to current and projected GHG emissions that auditors take in evaluating management assertions about financial statements. When reviewing financial statements, auditors offer an opinion on the issuer's conformity with relevant standards and describe the range of uncertainties based on relevant inputs, data gaps and assumptions. Just as auditors test the five dimensions of management assertions about financial statements,⁸ independent verifiers can test them in a review of GHG emissions disclosures.

Any claim that independent verifiers will lack the data they need for providing reasonable assurance is belied by the fact that many companies are already disclosing

Scope 3 emissions, and many more are preparing to do so:

- According to ESG ratings firm [MSCI](#), as of March 2020, 18% of large and mid-cap companies had reported Scope 3 emissions.
- [Roughly 100 companies](#) with targets approved by the Science Based Targets initiative (SBTi) are disclosing Scope 3 emissions.⁹
- In January 2022, the European Banking Authority issued [new requirements](#) for financial institutions to disclose, among other things, "information on financed greenhouse gas (GHG) emissions, that is, Scope 1, 2 and 3 emissions of an institution's counterparties financed by the institution."
- The Partnership for Carbon Accounting Financials (PCAF) [requires](#) its participating financial institutions to report Scope 3 emissions (i.e., financed emissions). PCAF currently has [222 participating institutions](#), including major banks and asset managers such as Bank of America and Blackrock.

The financial industry will soon have all the data it needs to provide the reasonable assurance that investors need and expect. In the meantime, registrants are bearing the unnecessary costs of determining how to disclose emissions in an era of policy uncertainty. The SEC has an enormous opportunity to reduce costs to both registrants and investors through a mandatory Scope 3 disclosure framework with reasonable assurance.

through inspection, observation, or confirmation; (b) tests of controls to evaluate their effectiveness; (c) obtaining corroborating evidence in response to inquiries; or (d) performing certain other procedures ordinarily performed in an audit. A review may bring to the accountant's attention significant matters affecting the interim financial information, but it does not provide assurance that the accountant will become aware of all significant matters that would be identified in an audit."

⁸ The five dimensions are: existence/occurrence, accuracy/valuation, completeness, rights and obligations, and presentation and disclosure (understandability).

⁹ SBTi requires Scope 3 disclosures from any participating company with [over 40%](#) of its total emissions coming from Scope 3. [Over 90%](#) of companies with validated targets meet this threshold.

Conclusion




In summary, the SEC should facilitate fair, orderly and efficient capital markets, promote capital formation and protect investors from undisclosed transition risk by mandating annual disclosures of Scope 3 emissions with reasonable assurance for large registrants.

Members of the public are encouraged to let the SEC know they want this comprehensive form of climate risk disclosure; the deadline for comments is May 20, 2022.

Contact

For more information, please contact: Aarthi Ananthanarayanan, Senior Fellow, Climate and Plastics Initiative, aarthi@oceanconservancy.org. John Kostyack co-authored this white paper. Many thanks to Alex Martin (Americans for Financial Reform Education Fund) and Yevgeny Shrago (Public Citizen) who contributed to this white paper.

CONTACT US

-  +1 800-519-1541
-  memberservices@oceanconservancy.org
-  oceanconservancy.org

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