

*Sustainable Finance Research Plattform*  
*Policy Brief – 02/2021*

**Investors Face Challenges with  
Corporate Carbon Emissions Data –  
Call for a Mandatory Disclosure Regulation**

Full study: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3722973](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3722973)

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*The Sustainable Finance Research Plattform is a network of five German research institutions that have been conducting intensive research on sustainable finance for many years. The aim of the platform is to provide scientific support in answering key social, political and private sector questions, to provide established and emerging knowledge and to play an advisory role in the political and public discourse. In this context, the platform also supports the work of the Sustainable Finance Advisory Board of the Federal Government by providing research-based inputs, feedback and a critical evidence-based perspective. In addition, the platform aims at establishing sustainable finance as an important theme in the German research landscape, while ensuring close links with European and international institutions and processes. More information can be found on the project's website [wpsf.de](http://wpsf.de)*

## Summary

In this policy brief, we discuss the importance, availability, and quality of carbon data to investors who wish to mitigate climate change. In the absence of mandatory reporting, about half of all emitting companies self-report their emissions, and for the remaining half, data providers estimate emissions data. In our study, we conclude that estimated carbon data can lead to ineffective investor actions whose purpose was to moderate climate change. Mandatory carbon disclosure, tailored to the requirements of investors, is urgently needed to improve the availability and quality of carbon emissions data. Only then, investors can set effective incentives for companies to reduce their carbon emissions.

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## 1. Importance of carbon data for investors

Strong evidence exists of increasing global temperature levels caused by the rise in greenhouse gas (GHG) emissions (IPCC (2018)). To reduce global warming, about 200 nations signed the Paris Agreement in an ambitious effort to combat climate change (United Nations (2015)). In this context, capital market participants also play an essential role. For example, investors, representing US\$100 trillion assets under management (AUM), are signatories of the Principles for Responsible Investment (PRI), which aim, among other goals, to tackle climate change issues (PRI (2020)). Furthermore, investors who represent about US\$52 trillion in AUM have joined Climate Action 100+, an initiative more directly focused on coping with climate change (Climate Action 100+ (2020)). Investors employ multiple strategies to help mitigate climate change, such as switching investments from brown to green companies and engaging in activist measures. For this purpose, they need widely available and reliable carbon data to guide their investments.

Beyond the important role of protecting the environment and diminishing climate change, investors need emissions-related information for making comprehensive investment decisions. Specifically, climate change has become an investment risk for investors because carbon emissions are increasingly associated with declining businesses, stranded assets (prematurely depreciated assets), and potential future liabilities. Further, with the rapid move to a low-carbon-emission economy, climate-related information becomes a necessary input for investment models as a means to capture declining business activities as well as green growth opportunities. The efficacy of investor activity to incentivize the real economy to reduce carbon emissions vitally depends on the availability and quality of GHG data.

Only about half of emitting companies disclose their emissions voluntarily, therefore data providers attempt to close the emissions data availability gap by estimating carbon emissions for non-reporting companies. Accordingly, the available carbon emissions data sets of some data providers contain a large fraction of estimated carbon emissions (Busch, Johnson and Pioch (2020)). Many investors view estimated emissions as a satisfactory substitute for company-reported emissions, thus revealing an implicit assumption in the status quo that data providers are successfully closing the data availability gap. Kalesnik, Wilkens and Zink (2020) examine this assumption by analyzing the capacity of both, reported and estimated corporate carbon emissions data, to help mitigate climate change. In addition, they analyze forward-looking information provided by the companies in their study. Forward-looking data are important because to successfully incentivize the real economy to reduce emissions, investment decisions

should be based on future emission reductions. Such forward-looking disclosures can inform investors about the projected climate-related risks associated with their investments and the future impact of their investments on the environment.

## 2. Framework for carbon data evaluation

Kalesnik, Wilkens and Zink (2020) develop a framework to evaluate the carbon data available to investors. The framework stipulates five criteria for carbon emissions data that are important for investment strategies designed to combat climate change: 1) high data coverage, 2) comparability among companies, 3) consistency across data providers, 4) predictive power of forward-looking information, and 5) accuracy in reflecting true emissions. Kalesnik, Wilkens and Zink (2020) use these criteria to compare the carbon data available to investors from four major carbon data providers. Beyond information on current and historical emissions, companies increasingly disclose information about future (planned) actions to reduce or increase GHG emissions. Data providers attempt to capture this forward-looking information via carbon scores or ratings. Kalesnik, Wilkens and Zink (2020) examine if these forward-looking carbon data are useful in forecasting companies' future changes in carbon emissions. They also evaluate if estimated emissions by data providers accurately reflect true emissions. If investors use carbon data that lack accuracy, then investment strategies based thereon might be ineffective or even counterproductive, for instance, by misidentifying brown companies as green companies, and vice versa.

## 3. Currently available carbon-data quality insufficient for investors

Three major concerns about the quality of self-reported GHG data by the companies exist. The first is that because investor-friendly reporting is voluntary in most countries, data availability is limited and introduces a potential self-reporting bias. Second, the huge variety of carbon-emission measurement methods and carbon disclosure recommendations and standards inhibits comparability of GHG emissions between companies and poses the threat of companies' greenwashing their activities (i.e., companies report in the way that makes them look best). Third, reported data are not perfectly consistent across data providers. The last concern is also supported in the literature (Busch, Johnson and Pioch (2020)). Despite these drawbacks, the reported data are the best quality information currently available.

In addition to historical emissions, Kalesnik, Wilkens and Zink (2020) also analyze data provider–specific carbon ratings and scores, which claim to capture forward-looking information disclosed by companies. To be valuable to investors, these carbon ratings and scores should be able to explain future changes in emissions, but the authors find they have no predictive power.

Finally, Kalesnik, Wilkens and Zink (2020) analyze the accuracy of the estimated carbon data. Conservative estimates suggest that investors are at least 2.4 times less likely to identify the worst 5% of emitters when using estimated carbon emissions data as compared to using reported data. Furthermore, Kalesnik, Wilkens and Zink (2020) show that estimated emissions data are based mainly on industry and size information. Thus, using estimated data may not accurately identify the green companies in brown sectors and impede a thorough evaluation of firms by investors. The study uncovers the misconception that estimated emissions can be equally as useful to investors as are reported emissions. The authors do not interpret these findings as an indicator for data providers doing sloppy estimation work. Instead, likely due to information asymmetry, these estimates are the best estimates data providers can make.

#### 4. Investor-friendly reporting of carbon data urgently needed

The findings of Kalesnik, Wilkens and Zink (2020) suggest that the status quo, in which investor-friendly carbon reporting is often voluntary and data providers estimate the missing data, is inadequate for investors' needs. This reporting inadequacy significantly reduces the impact of investors' actions towards mitigating climate change. The environment is a public good, and the minimum standard should be knowledge of who is polluting it and to what extent.

To date, several mandatory carbon-data disclosure regulations have been introduced. On the international level, the EU ETS requires mandatory audited disclosure of emissions as part of the EU Emissions Trading Scheme (European Commission (2016)). On the country level, the US GHGRP also requires mandatory facility-level disclosures (US EPA (2013)), and on the regional level, similar disclosure requirements exist, such as the California cap-and-trade system (California Air Resources Board (2015)). These carbon disclosure requirements focus on direct carbon emissions at the facility level. A facility-level focus is not necessarily useful for investors, because it applies only to direct carbon emissions, and the attribution of facility-level emissions to a specific company creates a barrier for understanding

company-level carbon performance. These reporting regulations are also limited because they address only facilities in the geographic area to which the regulation applies. For example, EU firms are only required to report direct carbon emissions under the EU ETS for their facilities within the EU and above a certain threshold of annual emissions.

Other disclosure requirements, typically introduced at the national level, address carbon emissions (and in some cases, additional climate-related information) on the company level. In Canada, the COVID-relief package requires large companies that received emergency loans to publish climate-related information consistent with TCFD requirements (Government of Canada (2020)). The Grenell II Act in France includes the planned introduction of a mandatory labeling system, showing a product's life-cycle carbon emissions (IEA (2019)). Also, The Companies Act 2006 in the United Kingdom was amended to add disclosure requirements beginning in 2013 for direct and indirect carbon emissions on the company level (UK Companies Act (2013)). These examples of disclosure regulation show a general tendency towards the introduction of disclosure systems for climate-related information. Many of the implemented regulations, however, lack comparability and are often not tailored to the needs of investors.

We are thus advocating for more **mandatory and investor-focused disclosure regulation** for corporate carbon data in order to increase carbon data availability. In particular, we are calling for the three following provisions:

- I. A strong focus on international harmonization of existing disclosure regulations to increase comparability of emissions information. For instance, the GHG Protocol (WBCSD and WRI (2015)) provides a consistent and reliable framework for the accounting and reporting of GHG emissions and is recommended by the Task Force on climate-related Financial Disclosures (TCFD).
- II. The inclusion of all three scopes of emissions and the inclusion of forward-looking disclosures (e.g., about planned and ongoing emission-reducing investment projects).
- III. The audit of carbon emissions data to avoid greenwashing and to ensure accuracy.

Supporting our claims, research has shown that the introduction of a mandatory climate reporting scheme (e.g., the Greenhouse Gas Reporting Program (GHGRP) in the US) motivates firms to improve their carbon

performance (Bauckloh et al. (2020)). Furthermore, empirical evidence supports the notion that mandatory disclosure standards motivate reductions in corporate carbon emissions (for a more detailed discussion see (Wissenschaftsplattform Sustainable Finance and BMBF-Projekt CRed (2019))).

## 5. Conclusion

The adoption of mandatory reporting requirements that focus on data relevant to capital investment is urgently needed. Data tailored to the requirements of investors can help better inform capital markets about climate-related risks and to facilitate the shift towards greener investments. Mandatory disclosure standards are an important (but not the only) step towards achieving the goals of the Paris Agreement. Until carbon reporting becomes mandatory, investors should encourage companies to voluntarily report their emissions. One way of creating an additional incentive for non-reporting companies to start disclosing their carbon emissions is to utilize the precautionary principle. This principle was adopted in the 1992 Rio Declaration (United Nations (1992)). Applied to companies' carbon performance, the precautionary principle means that the worst possible outcome is always assumed if reliable data are missing. This approach can only complement existing carbon-emission disclosure practices, however, in the absence of mandatory disclosure regulation.

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