

Sustainable Finance Research Platform

in cooperation with

BMBF project „Climate Reporting as Instrument for CO₂ Reduction (CRed)“

Mandatory climate reporting as an instrument for CO₂ emission reduction

Policy Brief – 2/2019

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The **Sustainable Finance Research Platform** 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.

The implementation of measures to mitigate climate change is a key challenge in this legislative period. As a building block for reducing corporate greenhouse gas emissions, we recommend the introduction of mandatory reporting of direct and indirect greenhouse gas emissions, for example as part of the revision of the “Non-financial Reporting Directive”². In this policy brief, we show that markets are already using climate-relevant information from companies in decision-making processes and risk assessments. The earlier companies engage in the detailed disclosure of their greenhouse gas emissions, the sooner they can develop expertise that can lead to long-term competitive advantages - not least on the international capital market.

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² https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en

Based on current research results, this policy brief shows (a) that business-related non-financial reporting can reduce uncertainties and information asymmetries on the capital market, (b) how regulations relevant to climate protection can affect the development of corporate greenhouse gas emissions, and (c) how reported corporate greenhouse gas emissions and company valuations (market values) are related. Despite political efforts made so far, greenhouse gas emissions in Germany in most sectors have hardly decreased in the last 30 years, so that Germany will not meet its greenhouse gas reduction target for 2020 (BMU 2019)³. In particular, since 2000, after the effects of reunification slowly faded away, emissions have stagnated (UBA 2019).

ESG or carbon disclosure is relevant for or explicitly referred to in a range of recent and current initiatives and developments, such as the EU action plan “Financing Sustainable Growth” and the proposals of the Technical Expert Group (TEG) on Sustainable Finance for the development of a taxonomy for environmentally sustainable economic activities⁴, the EU Green Bond Standard (EU-GBS)⁵, the “Guidelines on Reporting Climate-related Information” of the Task Force on Climate-related Financial Disclosures (TCFD)⁶ and the proposal for a regulation on disclosures relating to sustainable investments and sustainability risks⁷. In this Policy Brief, we focus on the recommendation to introduce mandatory corporate climate reporting and, if necessary, address further developments and initiatives in separate statements.

With respect to company-specific greenhouse gas emissions in particular (and ESG performance in general) and their disclosure, we can distinguish at least three questions of high policy relevance and find answers to them based on available research:

- (1) Does information on ESG performance and on climate-related issues contribute to an improved risk assessment and to the reduction of information asymmetry?
- (2) Does voluntary or mandatory disclosure of greenhouse gas emissions result in increased emission reductions for affected companies?
- (3) Is such information included in the valuation (of the share value) of a company?

1. Capital market relevance of company-related ESG and climate information

Various studies show that company-related information on ESG performance and on climate-relevant topics is relevant to the capital market. Empirical studies, with an international or U.S. focus, show that ESG reporting goes hand in hand with lower equity costs and improved forecasts (Dhaliwal, Li, Tsang & Yang, 2011; Dhaliwal, Radhakrishnan, Tsang & Yang, 2012) and that information on ESG performance is associated with lower information asymmetries (Cho, Lee, Pfeiffer, 2013). It has already been shown for the European market that company-related information on physical climate risks (Schiemann & Sakhel, 2019) and the design of the assurance of ESG reports (Fuhrmann, Ott, Looks & Günther, 2017)

³ Following further “2020 targets” are unlikely to be met: primary energy consumption (target: 20% reduction compared to 2008); final energy productivity (target: increase by 2.1% per year 2008-2050); increasing the share of renewables in transport (target: 10%), Löschel et al 2019.

⁴ https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-taxonomy_en.pdf

⁵ https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-green-bond-standard_en.pdf

⁶ https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190110-sustainable-finance-teg-report-climate-related-disclosures_en.pdf

⁷ <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A52018PC0354>

are related to information asymmetry. Krueger (2015) also shows that, following the introduction of mandatory disclosure of corporate greenhouse gas emissions in the UK, the information asymmetry is lower for affected companies than for comparable companies in other European countries in which such a requirement has not been introduced. Furthermore, the BMBF-funded CARIMA project (Wilkens et al., 2019) illustrates, that market participants are already taking the consequences of the transformation process of the economy into account when valuing shares and thus companies.

Result 1:

Company-related information on ESG performance and on climate-relevant topics contributes to the reduction of information asymmetries and is therefore important for information efficiency and thus the efficient functioning of capital markets.

2. The effect of voluntary and mandatory disclosure on emission reductions

Research results so far show no evidence of an emission-reducing effect of voluntary climate reporting by companies or reporting based on a voluntary self-commitment by companies. Haque & Ntim (2018) cannot find a connection between voluntary environmental reporting according to international standards (e.g. GRI) and efforts to substantially reduce emissions for a firm sample from the UK. Belkhir, Bernard & Abdelgadir (2017) provide similar results for an international sample. On the other hand, new research results show that mandatory disclosure of company-specific greenhouse gas emissions can lead to a significant increase in emission reductions. One example is the preliminary result of the BMBF-funded "CRed" project (see Figure 1).

In its Greenhouse Gas Reporting Program (GHGRP), the American Environmental Protection Agency (EPA) has obliged companies since 2010 to disclose their emissions from carbon-intensive factories within the USA.⁸ A CRed study compared the level of greenhouse gas emissions from 289 U.S. companies affected by this regulation with 400 companies that voluntarily disclose their greenhouse gas emissions.⁹ While there were no significant differences in emission reductions between these two groups of companies prior to the introduction of the GHGRP, greenhouse gas emissions from regulated companies decreased by 36% between 2010 and 2016 compared to a reduction of only 13% of voluntary reporting companies after the introduction of the GHGRP (see Figure 1).

A similar study analysed the impact of regulation on greenhouse gas emissions at the level of individual factories rather than entire companies (Downar, Ernstberger, Rettenbacher, Schwenen & Zaklan, 2019). In the UK, capital market-oriented companies are required to report their total greenhouse gas emissions for fiscal years ending on or after September 30, 2013. Factories of companies affected by the reporting requirement show a reduction in their greenhouse gas emissions that is up to 18% higher than factories not affected by the reporting requirement.

Result 2:

Mandatory company-related disclosure of greenhouse gas emissions leads to significantly greater reductions in emissions by affected companies compared to voluntary disclosure.

⁸ The regulation applies specifically to factories that emit at least 25,000 tonnes of CO₂e per year and excludes some industries, such as agriculture (https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr98_main_02.tpl).

⁹ Among other things, they controlled for economies of scale, leverage and capital expenditures.

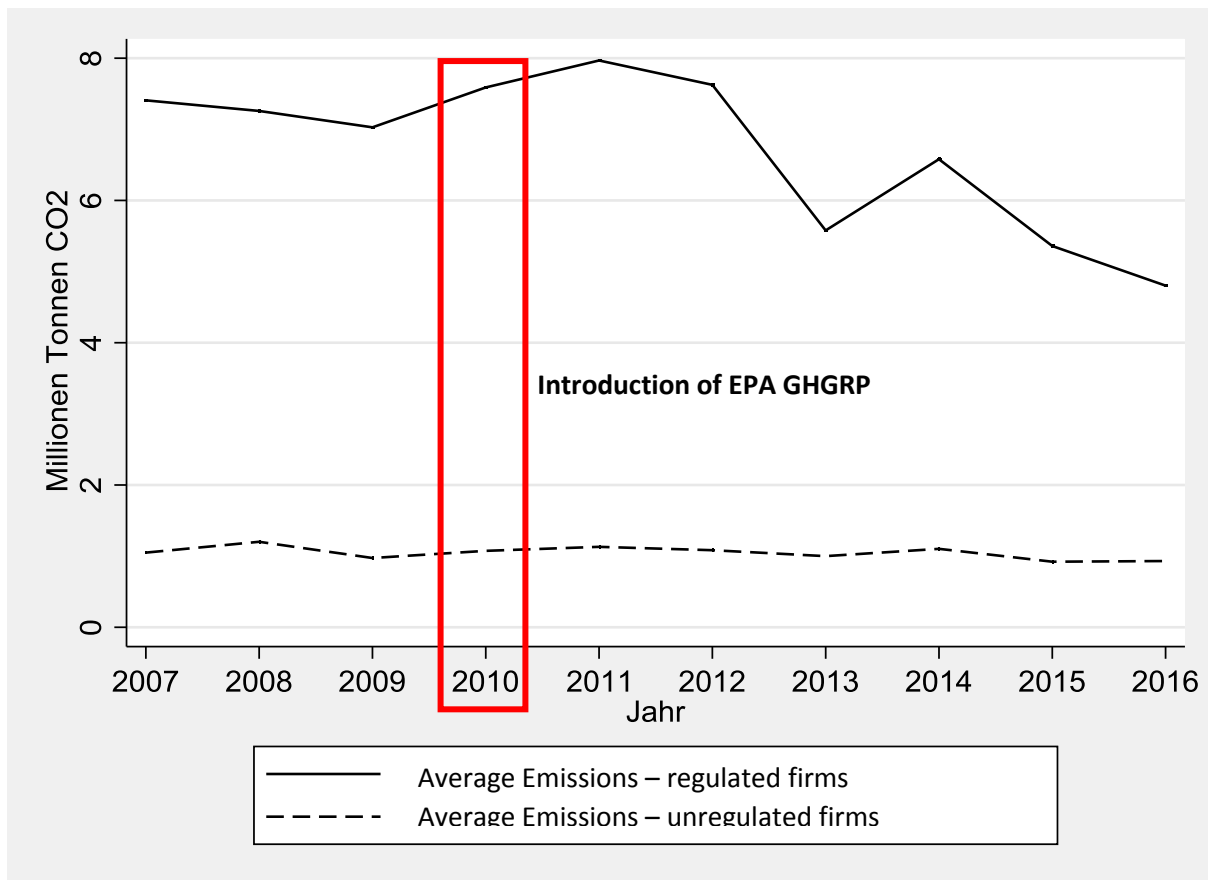


Figure 1: Average greenhouse gas emissions from regulated and unregulated companies before and after the introduction of mandatory CO2 reporting.

3. Link between greenhouse gas emissions and firm value

The current state of research on greenhouse gas emissions and firm value also shows that companies that reduce their emissions in many cases also benefit financially or at least do not suffer any disadvantage because the market is already pricing in at least part of the risks arising in the context of climate change. Various academic studies have calculated a loss in corporate value of US\$ 79-212 per tonne of greenhouse gas emissions (Matsumura, Prakash & Vera-Muñoz, 2014; Griffin, Lont & Sun, 2017). For the European region, Clarkson, Li, Pinnuck & Richardson (2015) show a negative effect of emissions on the company value if these exceed the allowance allocations under the EU ETS. Preliminary results from Juergens & Hessenius (2019) confirm the negative correlation between emissions and firm value for EU companies and also point to a combined effect of CO₂ pricing (under the EU ETS) and emissions on the market value of companies. Thus, there are already disadvantages on the capital market today due to increased emissions of CO₂ and other greenhouse gases.

Result 3:

Company-related greenhouse gas emissions are included in the company valuation, whereby companies with particularly high emissions have lower market values.

Summary:

The introduction of mandatory greenhouse gas reporting can therefore not only create an incentive for companies to reduce emissions and thus contribute to compliance with the Paris Agreement. Mandatory disclosure would also provide capital markets with important risk assessment information, reducing information asymmetries and encouraging the redirection of capital flows in a more climate-friendly direction. With this measure, Germany would make an important and market-compliant contribution to meeting the climate targets. In order to achieve comparability of the disclosed data, a harmonised regulation at EU level would be preferable to a national approach. The obvious starting point for this is the “Non-financial reporting directive”¹⁰, which is due for revision.

The work of the Sustainable Finance Research Platform is supported by:



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¹⁰ https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en

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