Voluntary Corporate Emission Commitments in a Patchwork Policy Landscape

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October 20, 2025 Extended Abstract

Through 2024, an increasing number of major corporations adopted a voluntary emission commitment. For most of the past decade, impact investors, environmental stakeholders, and more have advocated for corporate net-zero emission targets, especially those on a timetable aligned with emission reductions consistent with the UN Paris Agreement. While there is an emerging literature in finance and accounting exploring such voluntary commitments, the current scholarship does not address the potential relationship between regulatory requirements and voluntary goals. In short, with the patchwork policy landscape characterizing U.S. energy and climate policy, do voluntary emission commitments reflect meaningful incremental emission reductions, or what the firms would have undertaken anyway under their regulatory obligations and available clean energy subsidies?

We will address this question through three contributions. First, we will illustrate conceptually the challenge of identifying emission reductions associated with the benefit a corporation derives from setting and making progress on a voluntary commitment. As the stylized graphical analysis below indicates, the analyst may find it difficult to discern the impact of a carbon price from the benefit a firm derives from adopting a target. As noted in the literature, this value could reflect a green premium for firms with extensive retail facing operations, impact investor preferences, regulatory preemption, worker recruiting, and other benefits to the firm. The analysis proceeds to show how overlapping policies – such as regulatory mandates and subsidies for clean energy – could influence the profit-optimizing firm with an emissions commitment to cut emissions beyond what is required by law. The critical assumption in the graphical analysis – that the firm's emissions are known in the absence of a voluntary goal, regulations, or subsidies – cannot be satisfied when we test the model's implications with data. The selection in voluntary adoption of commitments complicates the construction of a credible, counterfactual baseline emissions for these firms. Before exploring this empirically, however, we address through our second contribution a significant data gap in existing research practice.

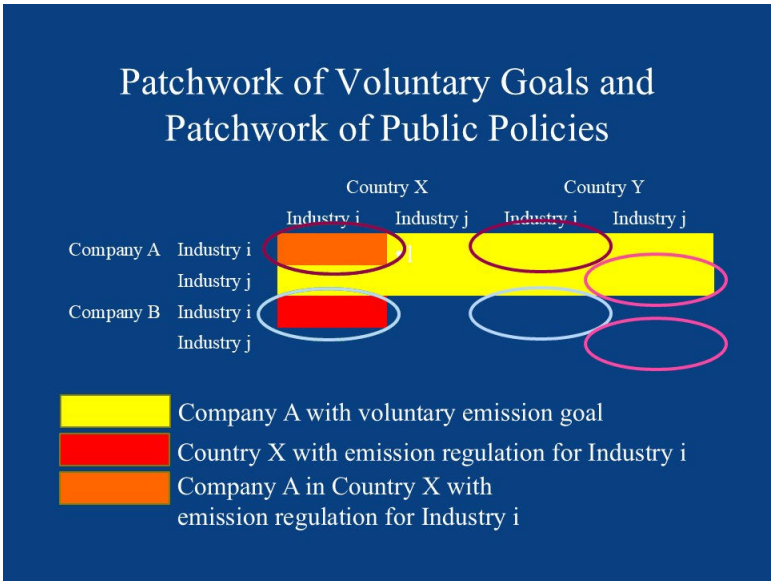
In October 2025, we completed the production and quality review of a comprehensive database of greenhouse gas emission commitments and related energy goals for major U.S. publicly-traded companies. For the 2,986 U.S. firms listed in the Russell 3000 Index as of June 2023, we have reviewed publicly available documents, such as ESG reports, sustainability reports, annual reports, and other information sources published by each firm to source data on their emission commitments. In contrast to other data sources, such as CDP (formally known as the Carbon Disclosure Project) that rely on voluntary completion of questionnaires, we produce our database by review of firms' own primary documents. For these Russell 3000 firms over 2000-2024, we document emission commitments, including base year, scope of coverage, time horizon, and measure of stringency. We account for commitments of various forms – absolute quantity and emission intensity targets, annual incremental targets and longer-term emission goals, subsidiary and geography-specific goals, renewable energy goals, energy efficiency targets, and more. Engaging a team of 25 research assistants over 18 months, we have produced the first comprehensive database of emission commitments issued by major corporations operating in the

United States. To assure completeness of coverage, we have cross-validated our database with a large language model assessment of company announcements of emissions targets in three major business news databases, as well as the CDP and Science-based Targets Initiative (SBTi) public databases of firm commitments. As a part of this research project, we will make available our database for use by researchers and practitioners.

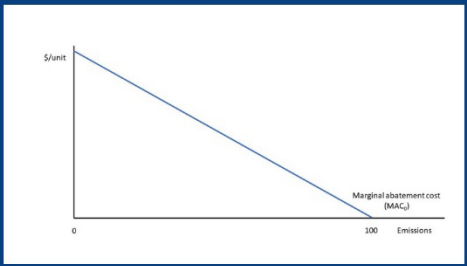
The research community in economics, finance, and accounting has primarily relied on CDP as its source of firm emission commitments. To be fair to CDP, its use case is not scholarly research, but to inform investors and leverage transparency as a means to encourage greater voluntary adoption of emission commitments by firms. In our initial assessment, the incremental information value of our database is considerable. Of the nearly 1,000 Russell 3000 firms with emission commitments catalogued in our database as of 2022, CDP published emission commitments on slightly more than 40 percent. This highlights a potential risk in the existing literature that employs statistical models that effectively compare outcomes between companies identified by CDP with commitments to companies that CDP does not identify as having commitments.

Our database is constructed to enable matching to an array of relevant datasets, including firm-level financial and emissions data (e.g., S&P Global TruCost), as well as firm-identified facility-level data (e.g., EPA GHGRP, EPA power plant CEMS, EIA power plant datasets). This enables firm and facility-level matching to relevant state and federal regulatory policies. For example, we have already mapped all power plants to their parent companies listed in the Russell 3000 Index, and mapped relevant state-level power sector regulations to these power plants.

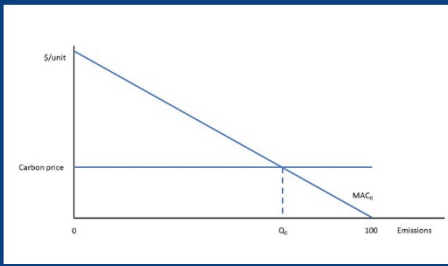
Our third contribution will employ our database matched with other datasets to explore key mechanisms that characterize firm emission outcomes under voluntary goals and a policy patchwork. Consider this graphical representation of two companies – one with a voluntary goal (A) and one without (B); operating in two industries (i and j); and operating in two countries (X and Y). Suppose that country X imposes an emission regulation on industry i. Does company A undertake more abatement in industry i in country X because of the regulation? Does it undertake less abatement in industry j in country X and in country Y as a result? Does company B shift from country X to Y? Does B acquire assets from A in industry j as well as in country Y, but not in industry I in country X due to the regulation? The color coded circles identify potential comparisons (statistically over a large sample, not just in this stylized pair-wise comparison). Comparisons across and within firms could reveal the potential interplay of voluntary emissions commitments and public policies. (And more generally, when accounting for clean energy subsidies as well.)



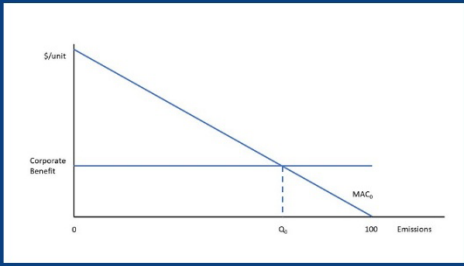
Illustrating the Incremental Impact of Voluntary Emission Goals



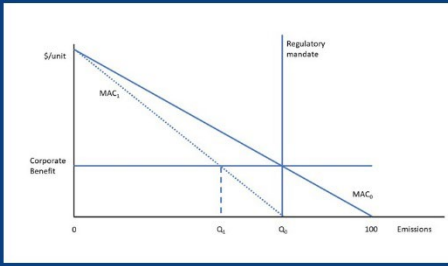
Impact of Carbon Price



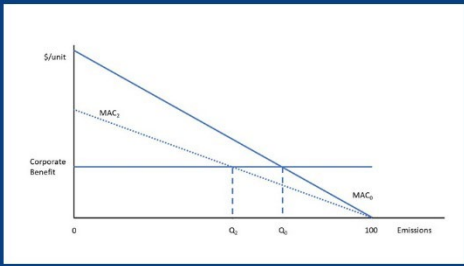
Impact of Voluntary Corporate Goal



Impact of Regulatory Mandate and Voluntary Goal



Impact of Subsidies and Voluntary Corporate Goal



Impact of Subsidies, Regulations, and Corporate Voluntary Goal

