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Carbon Disclosure and Global Decarbonization: The Case of CDP

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CDP was the first organization to provide global data on corporate carbon emissions and is a central actor in the corporate governance of carbon disclosure. Using the politics of decarbonization framework developed by Bernstein and Hoffmann (2016), as well as data from interviews with key individuals at CDP and other relevant institutions, this paper explores three causal mechanisms—norm change, capacity building and coalition building—by which CDP contributes to global decarbonization efforts. Analyzing CDP’s actions through these mechanisms, I find that CDP has played a leading role in normalizing, scaling-up and entrenching the practice of carbon disclosure in the firms with which it interacts and in the broader investment community. This paper concludes by highlighting five lessons from this intervention for other initiatives seeking to influence the practices and behaviour of market actors. For example, the case of CDP highlights the role of framing in scaling-up an intervention, or how an intervention can have unintended positive spillover effects for similar initiatives.

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EXECUTIVE SUMMARY

The corporate disclosure of carbon emissions is a well-established practice for the world's largest firms. This is largely due to the work of CDP, formerly known as the Carbon Disclosure Project. CDP is a UK-based not-for-profit organization that emerged in 2000 in response to the lack of information about corporate carbon disclosure and the lack of action on reducing corporate carbon emissions. CDP seeks to influence the behaviour of firms by leveraging the power of over 800 institutional investors to encourage firms to complete CDP's annual climate change questionnaire. The survey asks firms to measure and disclose carbon emissions, identify risks and opportunities associated with that information as well as the corporate governance systems and strategies in place to manage their emissions. CDP is a longstanding actor in the corporate governance of carbon disclosure, as the first organization to provide global data on corporate carbon emissions. This paper explores CDP's contribution to decarbonization efforts through three causal mechanisms—norm change, capacity building and coalition building. Analyzing CDP's actions through these mechanisms, I find that CDP has played a leading role in normalizing, scaling-up and entrenching the practice of carbon disclosure in the firms with which it interacts and in the broader investment community.

Based on an analysis of these causal mechanisms and their effects, the global trajectory of CDP can be characterized, so far, as *system improving*. While CDP's corporate carbon disclosure program itself is not disrupting global carbon lock-in, CDP has expanded its programming to pressure select firms to set emissions reductions targets, which is an important step towards decarbonization. And while CDP ultimately has a vision to reduce corporate reliance on carbon, structural barriers and counter-cyclical effects have presented significant challenges to this goal. Despite these challenges, over the last fifteen years CDP has gradually cleared important normative ground by framing carbon disclosure as relevant to investors and large global firms. Moreover, CDP has aided initiatives with more transformative decarbonization mandates through its coalition building efforts.

This case yields a number of lessons that may apply to organizations or coalitions that seek to influence the behaviour of market-based actors through voluntary means. First, scaling-up an intervention takes time and an intervention may need to be reframed during this process. CDP, for example, shifted from a focus solely on risk (and, to a lesser extent, opportunity identification) to profitability and return on investment. Second, the process of decarbonization is uneven. The case of CDP highlights variation in terms of the level of investor engagement, how climate change disclosure information is used, and how firms respond to CDP's request for data. Third, there is a need for policy lock-in to neutralize laggards. In the absence of mandatory reporting on corporate carbon emissions, CDP has been able to leverage its investor network to achieve high rates of voluntary participation and gradually increase its reporting requirements. Fourth, an intervention can have unintended positive spillover effects for other similar initiatives. CDP's activities have produced spillover benefits to other initiatives or coalitions—like the Principles for Responsible Investment (PRI) and the Portfolio Decarbonization Coalition (PDC)—by normalizing carbon disclosure and leveraging the support of investors committed to CDP's work. Lastly, CDP must be understood as one actor in a dense network of organizations that are concerned with, and measure, the sustainability impact of corporate investments and behavior.

1. Introduction

The corporate disclosure of carbon emissions is a well-established business practice for approximately 80 percent of the world’s largest corporations on the Global 500 Index.¹ This practice is due to the work of CDP (formerly known as the Carbon Disclosure Project²), a UK-based not-for-profit organization that emerged in 2000 in response to the lack of information about corporate carbon disclosure. CDP seeks to influence the behaviour of firms by leveraging the power of 803 institutional investors³ to encourage firms to complete CDP’s annual climate change questionnaire, which asks firms to (i) measure and disclose carbon emissions, (ii) identify risks and opportunities associated with that information as well as the (iii) corporate governance systems and strategies in place to manage these emissions (CDP 2016, 3). Although CDP has attracted the attention of much scholarship,⁴ studies have yet to examine the contribution of CDP to global decarbonization—the process of moving away from our global carbon dependence and related governance systems that support this dependence. Using the politics of decarbonization framework developed by Bernstein and Hoffmann (2016), as well as data from interviews with key individuals at CDP and other relevant institutions, this paper explores three causal mechanisms—norm change, capacity building and coalition building—by which CDP contributes to global decarbonization efforts. By understanding these causal mechanisms and their effects, we can assess the global

¹ The 2015 report drew on responses from 1,997 companies, “primarily selected by market capitalization through regional stock indexes and listings” which represented 55 percent of “the market capitalization of listed companies globally” (CDP 2015b, 7). As well, 403 of the Global 500 companies took part in CDP’s climate change program in 2013 (CDP 2013b, 41). Notably these numbers are always lower for the S&P, in 2013, 334 companies responded or 67 percent (CDP 2013a, 4).

² The Carbon Disclosure Project underwent rebranding in 2013 and is now referred to as CDP because it expanded to cover water and forests as well as carbon and energy resources.

³ This is the number of institutional investors at the time of writing. For an update see CDP (n.d., Climate Change).

⁴ CDP data is used in over 175 studies published in over 70 peer-reviewed journals (on file with author).

trajectory of the initiative. This paper finds that CDP has played a lead role in normalizing, scaling-up and entrenching the practice of carbon disclosure. While CDP's corporate disclosure itself is not disrupting global carbon lock-in, CDP has expanded its programming to pressure select firms to set emissions reductions targets, which is an important step to this end. CDP has also aided initiatives with more transformative decarbonization mandates through its coalition building efforts.⁵ This paper concludes by highlighting lessons from this intervention for other initiatives seeking to influence the practices and behaviour of market actors.

2. Theoretical Framework

This section outlines Bernstein and Hoffmann's (2016) framework, applied in this paper, to analyze how actors and institutions—and the policies, practices and technologies they create and support—might disrupt the political and economic systems that “lock-in” carbon dependency (Unruh 2000). Carbon lock-in is the result of multiple, interlocking, interdependent systems that exist at multiple levels. Decarbonization, Bernstein and Hoffmann (2016, 3) argue, is a political activity because no matter the location of these systems—in particular markets or sectors, cities, sub-national jurisdictions, or nation-states—institutional and normative processes and structures (political factors) contribute to carbon lock-in, and thus require political action and processes to disrupt.

The framework posits that interventions can change political dynamics through three causal mechanisms: normalization, capacity building, and coalition building (Bernstein and Hoffmann 2016, 5). Normalization, or norm change, affects the expected or normal

⁵ While CDP has multiple programs with corporations and cities, this paper will focus only on CDP's corporate carbon disclosure and climate change program.

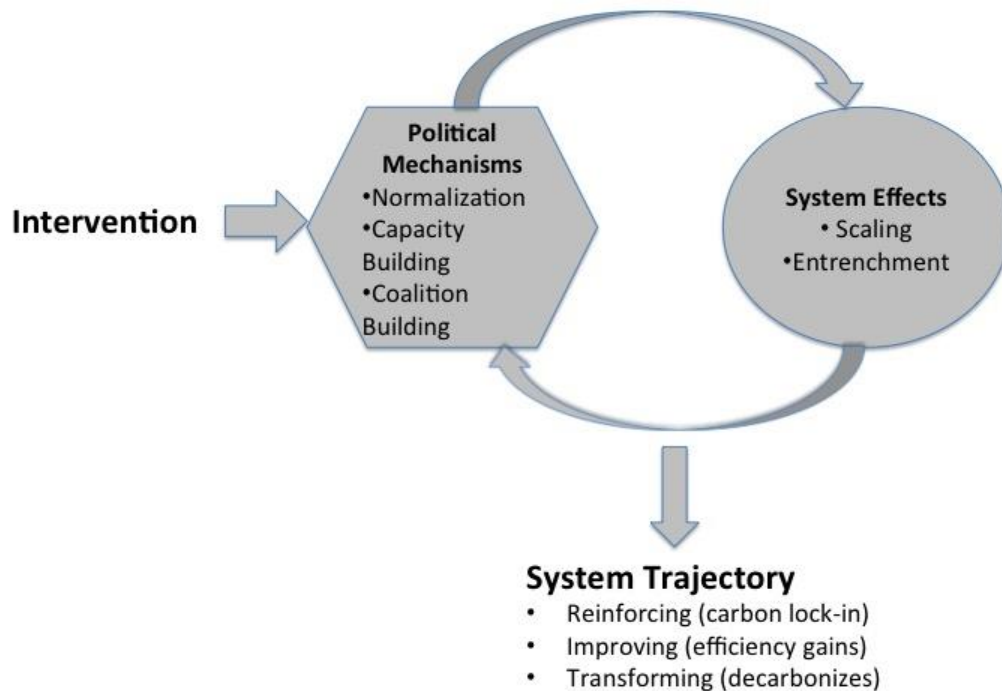
behaviour of actors in the system. Norm change happens through framing or re-framing an initiative to the target audience, or through practices—what practitioners “do” (Adler and Pouliot 2011, 3)—including behavioural, cultural or material dimensions. Capacity building involves altering material, institutional, and cognitive capacities—including through policy learning—to act on decarbonization. Coalition building involves the formation of economic and political coalitions that link winners—those that benefit or see the benefits from participation in the intervention—and neutralize opponents, those whose interests are aligned with the status quo, or those that stand to lose from the intervention. Of course, these three dynamics are not entirely independent from one another and are often mutually reinforcing; for example, an increase in capacity of an organization might contribute to normalization of a particular behaviour.

Interventions can generate these mechanisms. Depending on how they play out, the mechanisms contribute to the potential for the intervention to scale up beyond its initial targets and/or become entrenched in those targets and beyond. Bernstein and Hoffmann (2016, 20-1) identify three types of scaling in their framework. Simple scaling involves growth in the size and scope of the initiative. Self-organized scaling involves adding similar or related interventions, which reduces barriers to further initiatives. Modular scaling, also known as mimetic scaling (DiMaggio and Powell 1983), involves the development of similar initiatives in another context.

Entrenchment also includes several processes. The four identified here are: (i) lock-in, which happens when a specific action (like passing legislation in jurisdictions with a separation of powers) makes the change durable; (ii) self-reinforcing processes, which is when the initiative become costly to reverse; (iii) increasing returns, which is when the

benefits to targets increase over time; and (iv) positive feedback processes, which is when an untargeted population joins the initiative reinforcing choices of the original population (Levin et al. 2012 cited in Bernstein and Hoffmann 2016, 22). Scaling and entrenchment have feedback effects on the political dynamics of the system, where for example, the passing of legislation mandating carbon disclosure would further contribute to normalization (see Figure 1).

Figure 1 - Decarbonization pathways across sub-systems (Bernstein and Hoffmann 2016, 15)



The extent and interaction of scaling and entrenchment can produce three possible trajectories for the system: (i) reinforcing carbon lock-in, (ii) improving the system, and (iii) decarbonizing the system. Reinforcing carbon lock-in is unintentional, and is most

likely the result of a failed initiative. A system-improving trajectory improves the efficiency of carbon use or reduces reliance on carbon, but is still locked-into a carbon dependent system. Decarbonizing the system is a transformational disruption of carbon lock-in where fossil fuels are not just reduced but the entire system shifts away from dependence on fossil fuels.

3. Evolution of CDP

CDP emerged in response to the global threat of climate catastrophe, an issue that CDP's founders saw both business and government incapable of addressing.⁶ CDP had an ambitious vision that initially had “nothing to do with disclosure”: asking investors to encourage corporations to reduce their greenhouse gas (GHG) emissions.⁷ It quickly became apparent that this strategy was not politically feasible, so CDP's leadership pivoted to target the disclosure of emissions.⁸ They designed the program to leverage the authority and influence of institutional investors to influence firms to increase transparency around GHG emissions. The earliest phase of CDP involved identifying a group of investors to support, in writing, its mandate. This task proved challenging since the institutional and normative framework around carbon disclosure was non-existent. Legal & General, a UK financial services company, was the first to sign the letter, and 34 investors followed suit in 2002. The 35 institutional investors first requested data in 2002 (CDP 2013b, 52), and data has since been collected annually across a number of indices and regions. The target of the CDP carbon disclosure survey has always been the largest firms in the world, marked by their position in the Global 500 indices.

⁶ Author's interview with a member of CDP's leadership, 26 July 2016.

⁷ Author's interview with a member of CDP's leadership, 26 July 2016.

⁸ Author's interview with a member of CDP's leadership, 26 July 2016.

The first CDP report identified 15 early movers, including BP, Shell, Dupont, Intel and Mitsubishi. These firms have continued to disclose and received a ‘B’ or higher performance band in 2016 (CDP n.d., Search Results). However, the initial survey responses from contacted companies was mixed. In 2002, CDP contacted all FT500 companies to complete the survey but less than half (44 percent) did so.⁹ The response rates improved until 2009 and have remained fairly constant with 81 percent (405 firms) of Global 500 firms responding in 2012 and 2013 (see Figure 2) (CDP 2010, 7; CDP 2013b, 41; CDP 2012, 4).

The number of institutional investors supporting the initiative has grown to 803 with US\$100 trillion in managed assets in 2017 (see Figure 3) (CDP 2017c). The most rapid growth in signatories was between 2003 and 2009. The rate of growth has not recovered since 2010 and 2017 saw the first ever drop in signatories, though minor (24 institutional investors) (CDP 2017c).

⁹ Eight percent responded, 15 percent declined to respond and 29 percent did not reply (CDP 2003, 5).

Figure 2 - Response Rates for Global 500 firms (2003-2013)¹⁰

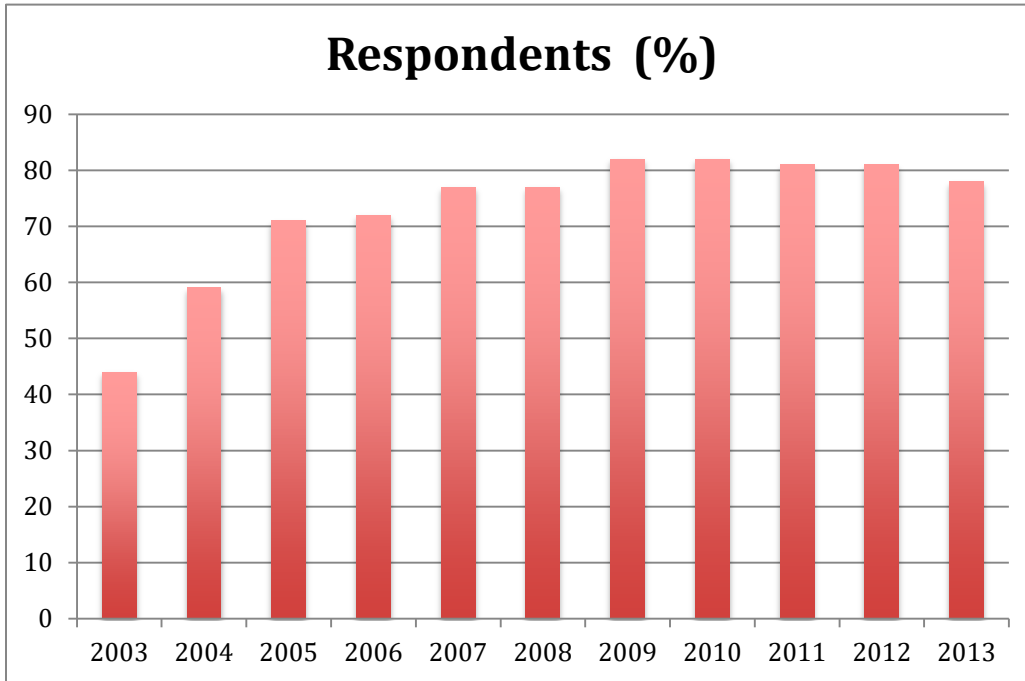
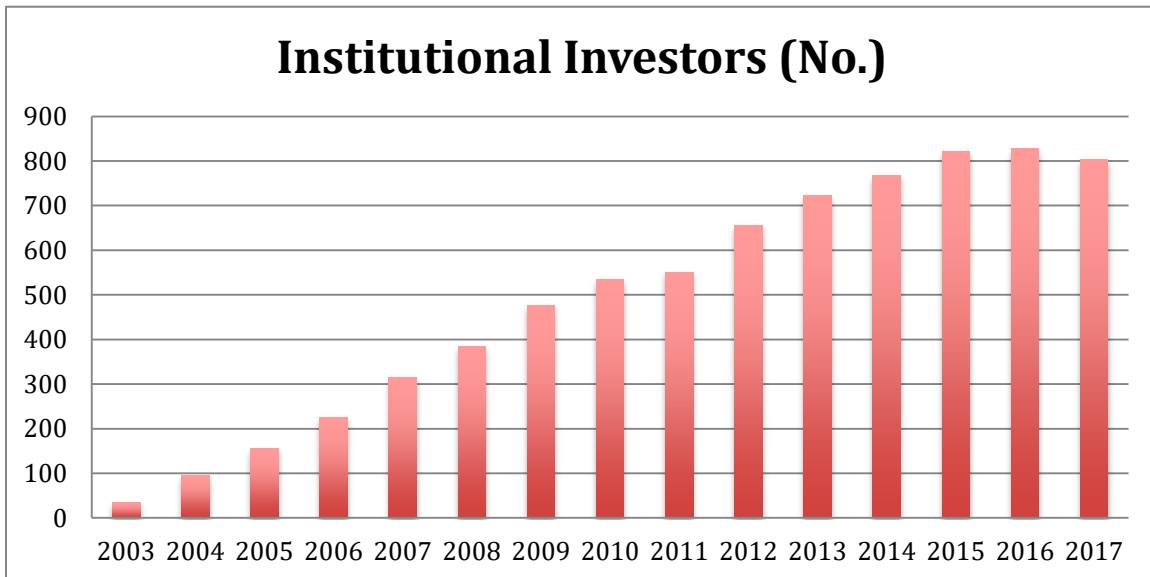


Figure 3: Number of CDP Climate Change Institutional Investors (2003-2017)¹¹



¹⁰ Data collected from annual CDP reports.

¹¹ Data collected from annual CDP reports.

CDP has continuously expanded and revised its climate change survey tool and methodology in light of stakeholder feedback and a drive to increase reporting standards.¹² CDP’s climate change questionnaire now has over 100 questions (CDP 2017a). While changes in reporting present a challenge for comparability, notable changes significantly enhance the quantity and quality of information disclosed. These changes include: the identification of focus areas in 2007 (e.g., GHG accounting, GHG management etc.); the introduction of performance bands in 2010 (CDP 2010, 17); and the forthcoming introduction of questions for high-impact sector activities (CDP 2017b). The survey became increasingly complex and around 2010, CDP started streamlining it to make it more user-friendly.¹³ Since 2016, companies have been given a letter grade based on their score obtained in the highest of four levels—disclosure, awareness, management, and leadership (CDP 2017d, 5).

CDP is premised on the notion that “you cannot manage what you don’t measure”—and that collecting data could help companies to recognize threats and opportunities associated with climate change and inform the investment decisions of signatories.¹⁴ CDP’s theory of change is that by disclosing their emissions, corporations will come to recognize the importance of GHG emissions and accept greater responsibility for managing them, and more broadly, to recognize the role they play in global fossil fuel dependence.¹⁵ CDP hoped that investors could also adjudicate between companies exposed to risks from climate change related events, and those that were able to take advantage of new business opportunities associated with low carbon investing

¹² Author’s interview with a member of CDP’s staff, 24 June 2016.

¹³ Author’s interview with a member of CDP’s staff, 24 June 2016.

¹⁴ Author’s interview with Alan Brown, Chairman of the Board at CDP, 24 June 2016.

¹⁵ Author’s interview with a member of CDP’s leadership, 26 July 2016.

(CDP 2015b). However, CDP was initially met with much resistance by firms, largely due to a lack of understanding about what the organization was trying to do—most people had never heard of Scope 1 emissions, let alone why they mattered.¹⁶ Moreover, there was an absence of corporate governance (i.e., sustainability departments or dedicated staff) to support CDP’s efforts.¹⁷

Given this initial reception, the first CDP report, released in 2003, identified a “significant information deficit for investors” based on the lack of “systemic, portfolio-wide information concerning both the absolute and relative levels of company-specific risk,” which posed concerns for fiduciary relations (CDP 2003, 1). Since then, the quality and quantity of information has improved significantly largely due to CDP’s reporting guidance. For example, reports prior to 2006 did not disaggregate types of risk. In the 2012 CDP Global 500 Report, 83 percent of firms identified regulatory risks and 63 percent identified reputational and consumer behaviour (CDP 2012, 13). While there remain concerns from investors about the quality of emissions data, CDP is largely aware of them.¹⁸

CDP has grown significantly over the last sixteen years, developing new initiatives, expanding the scope of its disclosure, engaging with cities, regions, states and supply chains, and reporting on water and forestry resources. Moreover, CDP has moved emphasis from disclosures to action in support of emissions reduction: in 2011, CDP launched the Carbon Action initiative, which requests carbon reduction commitments from targeted, heavy-emitting industries and firms. The initiative has a simple logic: invite more investors to target more companies to “allocate capital to emissions

¹⁶ Author’s interview with a member of CDP’s staff, 24 June 2016.

¹⁷ Author’s interview with a member of CDP’s staff, 24 June 2016.

¹⁸ Author’s interview with Aldo Bonati, Deputy of Research Department at Etica Sgr, 8 July 2016.

reductions activities” (CDP 2014b, 5). It targets firms specifically from the most intensive industries through the Global 500 index.¹⁹ Firms are asked by investors to make, and publically disclose, emissions reductions targets and to create Return on Investment (ROI)-positive investments in emissions reductions projects (CDP 2015a, 1).

4. Transformative Political Mechanisms

4.1 Capacity Changes

There are several dimensions of capacity building worth highlighting, which pertain both to the intervention itself, and to the actors involved with the initiative. CDP provides reporting guidance to companies but they are expected to have their own internal staffing and expertise to track carbon emissions and climate-related risks. Thus the CDP intervention catalyzes capacity building within reporting firms, but does not directly provide the capacity to do disclosure. CDP regularly releases reporting and scoring guidance documents (e.g., CDP 2016; CDP 2017d), which includes step-by-step instructions to complete the questionnaire, and advises on reporting and scoring changes. CDP also has an analytics tool, “Reporter Services,” that provides insights on reporting and managing climate and water risk and looks at how to integrate carbon, energy and water management into a firm’s business strategy. Externally, the growth of carbon accounting has been significant—as acknowledged in the 2005 CDP report, accounting organizations have begun to release guidance on accounting for carbon assets and liabilities and on disclosure protocols (CDP 2005, 18).

¹⁹ The Global 500 is the index of the largest companies (measured by market capitalization) in the FTSE Global Equity Index Series. Before 2008, CDP used the Financial Times Global 500 index, which also measures 500 largest companies by market capitalization but used a different methodology (CDP 2008, 13).

In terms of CDP's capacity as an organization, CDP has 17 regional offices and 50 staff with operations that span 71 countries and regions (CDP n.d., About Us; Total n.d., CDP). CDP has developed several other programs to collect data on water and forest sustainability, and to work with cities, regions and members of global supply chains. While CDP once relied solely on private donations, its funds are now largely based on membership, fees from data tools, and report sponsorship, with some government funding.²⁰ According to interview data, the largest barrier to increasing capacity is funding.²¹

4.2 Normalization

For firms participating in CDP's corporate carbon disclosure program, disclosure is an expected behaviour. Corporate carbon disclosure is now considered globally an appropriate behavior and CDP certainly played a role. Spurred on by CDP, institutional investors were able to successfully ask firms to disclose non-financial information by framing their requests as a method to reduce risk and improve investment decision-making. As one interviewee said, "we often found the problem can be language: as soon as you say sustainability to an investor, previously they wouldn't be interested but you say risk and they are obviously interested."²²

Carbon disclosure is not a static concept and does not rely on a single fixed frame to garner support. CDP has recently framed carbon disclosure as a way to improve financial performance. According to their 2014 S&P 500 Climate Change Report, companies that have a CDP score in the top quartile have a 67 percent greater Return on

²⁰ Author's interview with a member of CDP's staff, 24 June 2016.

²¹ Author's interview with a member of CDP's leadership, 26 July 2016.

²² Author's interview with a member of CDP's leadership, 26 July 2016.

Equity (ROE) or ratio of net income to shareholder equity²³ than non-responders (peers in the GICS Industry Group) and 18 percent greater ROE than those in the bottom quartile (CDP 2014a, 5). These leaders had 50 percent lower volatility of revenue between 1994 and 2004, and 21 percent stronger dividends to shareholders than their low-scoring peers (CDP 2014a, 5). The shift to an emphasis on profitability ratios began with measuring ROI in the 2012 Carbon Action report. In 2013, the CDP Carbon Action report showed that emissions reductions created, on average, a 33 percent positive return on investment (CDP 2014b, 3). This fits with the broader but non-conclusive literature on the relationship between financial performance and carbon disclosure.²⁴ Importantly, the frame of risk is still highly relevant, and one of the key global conversations pertains to risk and stranded assets as the result of climate change.²⁵

The practice of carbon disclosure has contributed to global consciousness of the risks associated with climate change as well as the opportunities available to those firms that adopt low(er) carbon pathways. However, CDP is not the only actor in this arena. Other actors include: nonprofits that set standards and measure sustainability like the

²³ The ROE is the net income less preferred dividends, divided by average total common equity (three-year average, 2011-2013).

²⁴ Hahn et al. (2015, 92) reviewed 13 studies that looked at the relationship between financial performance and carbon disclosure and reported that most had insignificant findings. He, Tang and Wang (2013, 190) found a negative relationship between the cost of capital and carbon disclosure using Global 500 CDP data, although this trend was weaker for firms with good carbon performance, reflecting the belief that disclosure can reduce the cost of capital. Renner (2011, 138-139) found that how investors reacted to CDP participation varied by region—reactions in Europe were negative, positive in Asian countries and mixed in North America—and by sector. For example, consumer staples had a positive reaction while the energy and materials sectors had a negative reaction. Renner also found that investors punished companies if they did not have an incentive structure to promote “carbon-friendly activity” or if they did not have a board member responsible for climate change. Again, variation in the results can be attributed to periodization, region and the CDP dataset used. And divergent theoretical frames have been used to support different sets of findings.

²⁵ Author’s interview with a member of the UNEP Inquiry into the Design of a Sustainable Finance System, 25 July 2016.

Global Reporting Initiative (GRI)²⁶ and The Climate Registry;²⁷ collaborative efforts between businesses and environmental NGOs like the Climate Disclosure Standards Board (whose Secretariat is provided by CDP); hybridized government-industry initiatives like the US EPA Center for Corporate Climate Leadership;²⁸ entities that focus on responsible investment which can take the form of an international organization (i.e., the PRI), a project of a larger organization (i.e., the Investor Network on Climate Risk), or a platform (i.e., the International Investors Group on Climate Change); coalitions of stakeholders that push for the decarbonization of investment portfolios like the Portfolio Decarbonization Coalition;²⁹ and multi-stakeholder dialogue and collaborative research initiatives, facilitated for example through the UNEP Inquiry into the Design of a Sustainable Finance System.

CDP claims responsibility for leading the shift to “climate-conscious investing,” given that the investors involved in CDP represent one third of global investment (CDP 2015b, 13). While this claim is difficult to evaluate, as the first and most comprehensive global aggregator of corporate climate data, CDP can confidently be credited with providing the data and “gateway of sharing information” necessary to lay the foundation on which the turn towards climate-conscious investing has depended.³⁰ And interview

²⁶ The Global Reporting Initiative (GRI) (n.d., About GRI) was launched as a project of two US non-profits in 1997 (the Coalition for Environmentally Responsible Economies [CERES] and the Tellus Institute) and focuses on sustainability performance more broadly including economic, environmental and/or social impacts for all types of organizations.

²⁷ The Climate Registry (n.d., Who We Are), launched in 2007 is based on the California Climate Action Registry (CCAR) created by the State of California in 2001. The Climate Registry is a program of the Climate Action Reserve, which tracks GHG emission reduction projects in North America. The initiative focuses on greenhouse gas accounting and reporting Scopes 1-3 and has about 415 members.

²⁸ The Center for Corporate Climate Leadership (n.d., About the Center for Corporate Climate Leadership) is a program of the US federal Environmental Protection Agency (EPA) launched in 2012. The initiative provides GHG inventory guidance and recognizes leadership in addressing climate change.

²⁹ PDC (n.d., About) is a partnership of UNEP Finance, UNEP and CDP.

³⁰ This interviewee also suggested CDP is not as relevant to companies as it once was (Smith 2016).

data supports CDP's theory of change.³¹ As well, the increase in emissions reductions targets set by firms in recent years is correlated with increased participation in CDP's climate change disclosure program.³²

Norm or practice change is closely linked to both capacity building and entrenchment in the case of CDP. As one interviewee noted, the fact that, "every year you could see it [carbon disclosure] being more and more established as the normal behaviour and the normal accepted standard business," was tied to the increase in sustainability careers in this sector, the increase in board level responsibility for climate change, and the growth in company outputs (for example, through sustainability reports, and corporate social responsibility initiatives).³³

4.3 Coalition Building

While the 800 plus institutional investors involved in CDP's climate change disclosure initiative form a loose coalition by virtue of their common disclosure requests, they are not formally linked. However, the collective nature of this loose coalition might have positive feedback effects, for example, by recruiting more investors to disclose. A group of highly engaged investors—those who typically have oriented themselves around mandates that support environmental, social, and corporate governance (ESG) investments—have been involved as first movers on related initiatives like the PDC. CDP has played an instrumental role in leveraging these relationships.³⁴

³¹ Author's interview with Aldo Bonati, Deputy of Research Department at Etica Sgr, 8 July 2016.

³² In 2012, 82 percent of G500 companies had absolute targets, intensity targets or both. This is an increase from 50 percent of the Global 500 firms who disclosed emissions reduction targets in 2010 (CDP 2012, 11; CDP 2010, 10).

³³ Author's interview with a member of CDP's staff, 24 June 2016.

³⁴ Author's interview with Lisa Petrovic, consultant to the UNEP Finance Initiative and coordinator of the PDC, 18 July 2016.

CDP has also identified loosely related groups of companies that both excel at disclosure, as well as those that have refused to participate. In terms of the former, companies that score within the top 10 percent of firms were formally listed on the Climate Disclosure Leadership Index (CDLI) or the Climate Performance Leadership Index (CPLI). To become part of the CDLI, a firm must make its CDP response public and score within the top 10 percent of the regional sample. The mean scores for the CDLI between 2008 and 2014 increased from 80 to 98.5, indicating that the floor has risen for firm disclosure performance (CDP 2014a, 8). A CPLI company must have attained a score of at least 85 (out of 100) or an ‘A’ level “performance band” based on four criteria: disclosure score, absolute emissions performance, verification of Scope 1 and 2 emissions, and reputation through external sources (CDP 2014a, 36). In 2016, CDP shed the CDLI and CPLI in favour of a single ‘A List’. The designation has several requirements including a score of at least 70 percent on verification of Scope 1 and 2 emissions (CDP 2017d, 10). The ‘A list’ is no longer limited to a percentile the respondents, which creates an opportunity for any company that meets the criteria to become a climate change disclosure leader.

The largest non-responders by market capitalization are listed in CDP’s annual reports. However, while there is little evidence of a formal counter-coalition against CDP, the list of non-responders shows there is an identifiable and consistent group of firms that is not willing to disclose their emissions or participate in CDP’s programs.³⁵ While these firms are shamed in CDP’s report, this group consistently makes up around 20 percent of the Global 500 companies. Notable companies include Amazon.com Inc.,

³⁵ For example, nine of the top 10 non-responders in the 2009 Global 500 Report were not new to the Global 500, “indicating there are a few large corporations that continue to choose not to participate in the CDP initiative” (CDP 2009, 20).

Tesla Motors, Inc., Kinder Morgan Inc., Facebook, and General Dynamics Corporation (CDP 2015b, 89). Also important but less publically shamed, some companies have done very little to mitigate climate emissions themselves or in their supply chains, particularly in agriculture (CDP 2015c). A central finding in the 2013 Global CDP report was that “[b]ig emitters are not doing enough to reduce emissions.”³⁶

5. System Effects

5.1 Scaling

There has been ample evidence of scaling in the case of CDP. Looking first at simple scaling, CDP made a concerted effort to reach out to investors to increase the total number of survey requests sent to companies. CDP sent out 2,100 climate change questionnaire requests in 2006 and 4,700 in 2010, with increases in the regions and countries approached in the mid 2000s (CDP 2006, 6; 2010, 7). The range of activities has also increased, for example with the introduction of the A List. CDP has also increased its scope to collect data about water and forest resources, and to work with cities and regions to disclose information about sources of natural capital. Notably, in 2009, CDP began reporting on supply chain disclosure (using a sample of 50 companies) in response to the lack of supplier awareness about the risks and impacts of their business activities on GHG emissions.

There is some evidence of direct, self-organized scaling. Most directly, CDP encourages companies to set their own emissions reductions targets, an initiative that has

³⁶ As cited in the System Outcomes section, “[t]otal scope 1 and 2 emissions from the Global 500 have fallen steadily from 4.2 billion metric tons CO₂e in 2009 to 3.6 billion metric tons CO₂e in 2013. However, scope 1 and 2 emissions from the 50 largest emitters, which emitted 73% of the total emissions in 2013, have increased 1.65% since 2009” (CDP 2013b, 8-9).

seen success.³⁷ A related development is the move towards carbon pricing—in 2015, around 9,000 companies had a price on carbon emissions or committed to doing so by 2017 (CDP n.d., Commit to putting a price on carbon). However, only 79 companies have committed to putting a price on carbon with We Mean Business which has the added requirement that the price is “high enough to materially affect investment decisions to drive down GHG emissions” and benchmark against other companies (We Mean Business n.d., Carbon pricing).

In terms of modular scaling and diffusion, voluntary and obligatory carbon disclosure systems have developed at the regional and national levels. This is an example of isomorphic scaling—these initiatives appear to have emerged independently because of similar conditions, pressures or incentives. There is evidence that in countries where CDP operated, national systems have emerged with mandatory measures. For example, in 2010 the US EPA and Securities and Exchange Commission (SEC) required firms that emit 25,000 metric tons of CO₂e to disclose (EPA 2013, 1).³⁸ In 2014, the EU amended legislation to include the Non-Financial Reporting Directive that includes disclosing environmental risks (EUR-Lex. 2014), and several Member States have their own policies.³⁹ In Canada, the Voluntary Challenge and Registry (VCR) operated between 1995 and 2004 and was replaced by the Greenhouse Gas Emissions Reporting Program (GHGRP) in 2004 for facilities that emit 50,000 tonnes or more of GHGs in CO₂e annually (Government of Canada 2016). Australia legislated the 2007 National

³⁷ In 2012, 82 percent of G500 companies had absolute targets, intensity targets or both (CDP 2012, 11).

³⁸ However, the SEC has recently been criticized for lax enforcement (see CERES 2015).

³⁹ For example, Spain requires firms to include environmental disclosures in their financial statements; since 2006 in the UK, “stock-listed” companies must report GHG emissions in 2006; and France introduced the Grenelle II law in 2012 that requires companies to publicly report Scope 1 and 2 emissions and passed additional investing reporting legislation in 2015 (see GOV.UK 2006; CDP 2015b, 34).

Greenhouse and Energy Reporting Act (the NGER Act), which mandates that large firms must disclose Scope 1 and 2 emissions (Federal Register of Legislation 2007).

Whether these similar models emerged independently due to similar drivers or because of the success of CDP is not determined here. Still, the growing normalization of carbon disclosure, as well as the growth of ESG investments and the emergence of governmental regulatory frameworks have mutually reinforcing effects on the system.

A less direct form of modular scaling has been the development of initiatives that rely on institutional investor support. CDP has often played a central role in developing these initiatives. For example, the Portfolio Decarbonization Coalition (PDC) is a partnership between the United Nations Environment Program (UNEP), UNEP Finance Initiative, and CDP. The PDC supports the Principles for Responsible Investment (PRI) Montreal Pledge and targets asset owners and managers to commit to disclosure assets under management (AUM) that are or will be decarbonized which will also be publically disclosed. At the time of writing, the PDC (2017, 10) has commitments from nearly thirty investors who have over US\$3 trillion in AUM. CDP played a key role in identifying and reaching out to these investors.⁴⁰

CDP has also supported the work of the Principles for Responsible Investment (PRI)—an organization developed in 2005 that encourages investors and asset managers to make investments that take into consideration environmental, social and governance factors. Although it is unclear whether the existence of CDP influenced the birth of PRI, there has been some cross-pollination of staff between CDP and PRI, and CDP has

⁴⁰ Author's interview with Lisa Petrovic, consultant to the UNEP Finance Initiative and coordinator of the PDC, 18 July 2016.

provided information on non-responding companies based on the CDP survey instrument, which are then targeted by PRI.⁴¹

The Science Based Targets initiative, launched in 2014, is the result of a partnership of several organizations including CDP (as well as the UN Global Compact, World Resources Institute and World Wildlife Fund). This initiative asks companies to set emissions reductions targets based on the global 2°C temperature target. The Science Based Target initiative is one of four projects in a broader partnership called Caring for Climate between UN (UNEP, the Global Compact and the UNFCCC) and strategic partners (including CDP)—the other initiatives are Business Leadership Criteria on Carbon Pricing, Responsible Corporate Engagement in Climate Policy, and Climate Change Adaptation and Resilience. This is not the first UN based initiative CDP has supported. In 2014, CDP was a partner in the UN Climate Summit’s 1-in-100 Initiative, a coalition designed to develop and implement climate risk metrics in the financial sector.⁴² Another output of the Climate Summit was the Cities Climate Finance Leadership Alliance, which brought together 40 organizations, including CDP, to catalyze low-carbon investment in cities (Cities Climate Finance Leadership Alliance n.d., About).

Finally, CDP was involved in the creation of We Mean Business, which comprises seven not-for-profit organizations⁴³ that pool their resources and work towards common goals⁴⁴ i.e., encouraging companies to adopt reduction targets, put a price on

⁴¹ Author’s interview with a member of CDP’s staff, 24 June 2016.

⁴² The current status of the project is unclear. Action Statement available at <http://www.un.org/climatechange/summit/action-areas/resilience-1-in-100-initiative/>.

⁴³ The partners are: BSR, CDP, Ceres, the B team, The Climate Group, The Prince of Wales’s Corporate Leaders Group (CLG), and the World Business Council for Sustainable Development (WBCSD).

⁴⁴ The commitments for action are: “responsible corporate engagement in climate policy,” “report climate change information in mainstream reports as a fiduciary duty,” “remove commodity-driven deforestation from all supply chains by 2020,” “reduce short-lived climate pollutant emissions,” “commit to improve energy productivity,” and “improve water security” (We Mean Business n.d., Take Action).

carbon, or commit to 100 percent renewable power. This initiatives supports and feeds into the targets of other initiatives, like Science Based Targets.⁴⁵ We Mean Business involved high-level strategic coordination in the run up to the UN Framework Convention on Climate Change’s 2015 Paris Climate Conference, also known as COP21. We Mean Business worked with CDP to provide a platform—Commit to Action—for companies to commit to a number of initiatives including putting a price on carbon, mainstreaming climate reporting, improving energy productivity or committing to responsible engagement in climate policy (We Mean Business n.d., Take Action).

In short, there appears to be a great deal of momentum behind CDP and carbon disclosure, particularly through relationships with the PDC and the non-profits involved in We Mean Business, bolstered after the Paris Agreement. The dynamics identified above suggest it is reasonable to expect that CDP will continue to scale up; this trajectory is also supported by interview data.⁴⁶ While it is difficult to determine whether CDP is riding a wave of climate conscious investment and global corporate decarbonization, or catalyzing the wave itself, as the first global repository of corporate climate change information, CDP helped form the requisite base on which other interventions could develop.

5.2 Entrenchment

Although there have been some pockets of national legislation for mandatory carbon disclosure, there is an absence of legislative lock-in on a global scale. Companies identified the lack of regulatory certainty as a key challenge in 2010 (CDP 2010)—the effects of the collapsed talks at the UN Climate Change Conference in Copenhagen (as

⁴⁵ For example companies that commit to the Science Based Target program will count towards the We Mean Business campaign.

⁴⁶ Author’s interview with a member of CDP’s staff, 24 June 2016.

well as the 2009-2010 financial crisis) were reflected in a slowing of growth in both the number of institutional investors and participating firms. According to an interview with a member of CDP's leadership, the absence of global policy around carbon disclosure is the most significant barrier to its entrenchment.⁴⁷ Moreover, the threat of legislation in the country where a firm is headquartered or operates in has been found to be significantly associated with carbon disclosure and appears to be a necessary condition to 'lock-in' the practice of carbon disclosure (Brouhle and Harrington 2009, 360; Choi, Lee and Psaros 2013, 58).

Despite the absence of global legislative lock in, response rates for CDP's corporate climate change disclosure program have increased over the last 14 years. The increase is because the initiative has strong self-reinforcing dynamics as well as increasing returns that influence the disclosing firms themselves—the targets of the CDP intervention. Studies that examined S&P 500 data have found that “previous disclosures represent the most significant variable in determining subsequent disclosures” (Stanny 2008, 145; Stanny and Ely 2008, 338). These findings suggest that disclosure behaviour becomes routinized and self-reinforcing.

Disclosing often requires a change in the structure of corporate governance, namely delegating responsibility for climate change activities (Kolk, Levy and Pinkse 2008, 725). In 2017, 98 percent of companies had board level or senior management responsibility for climate change—an increase from 80 percent in 2010 (CDP 2017; CDP 2015b, 6). It is reasonable to expect that companies that have undertaken these reforms are more likely to continue disclosing. And, financial incentives matter—particularly at

⁴⁷ Author's interview with a member of CDP's leadership, 26 July 2016.

the board level—for encouraging action on climate change: between 2012 and 2013, 85 percent of firms that provided monetary incentives reported emissions reduction in the past year, roughly a 20 percent increase over companies that did not provide such incentives (CDP 2013b, 8). This trend is increasing; the number of firms that provide financial incentives increased to 89 percent in 2013 compared to 49 percent in 2010 (CDP 2010, 25).

Repeated disclosure could also be due to increasing returns on investment, or at least the perception of positive impact on financial performance. If we assume a modest or significant relationship between carbon disclosure and financial performance, as some studies have found (e.g., Hahn et al. 2015, 92), we can perhaps explain the growth in institutional investors or links to increasing efforts to disclose because of these profit incentives. The link between carbon reduction and financial performance is also supported in the literature—although not universally—and could provide an incentive to reduce carbon-intensive activities (e.g., Gallego-Álvarez et al. 2015, 149; Lee et al. 2015, 1).

6. System Outcomes

CDP’s corporate carbon disclosure program is on a system-improving trajectory because CDP primarily encourages disclosure rather than decarbonization directly. Although CDP has recently encouraged action on emission reduction targets, it is still early days for this work. However, a number of empirical studies have found a positive relationship between carbon disclosure and carbon performance.⁴⁸ But looking at the

⁴⁸ Luo and Tang (2014) found a “significant positive association between carbon disclosure and [carbon] performance” for CDLI participants. Dawkins and Fraas (2011) however found a positive relationship between environmental performance and carbon disclosure. Renner (2011) also found that there was a positive relationship between environmental performance and financial performance, although there were

bigger picture, Scope 1 and 2 emissions have not changed significantly 2009-2013. During this same period the “fifty largest emitters have increased their emissions (by 1.65 percent) with the top five emitters in each sector increasing their emissions by approximately 2.3 percent since 2009” (CDP 2013b, 8-9). Moreover, of the eighty percent of Global 500 firms that disclosed emissions reductions targets, the majority are not science based, and thus cannot help keep global temperature rise below 2°C (Caring for Climate 2015, 1).

Recall that the ultimate mission of CDP—influencing financial decisions to decarbonize—is still largely mismatched with global corporate incentives. While CDP has helped changed the incentive structure for a large set of companies to disclose, some companies feel that the information they are disclosing is commercially sensitive and could affect their competitiveness.⁴⁹ There is much more work to be done in order for companies to change their business practices in light of their contributions to global carbon emissions, and for investors to understand the materiality of these emissions. There is still a general perception that investors do not care about nonfinancial metrics, largely because most major institutional investors have little awareness of, or experience with, environmental disclosure (Gilbert 2016).⁵⁰ Given the lack of policy incentives to decarbonize, as one interviewee notes, “a lot of companies really don’t have a clue how

some exceptions. In 2013 using data from the S&P 500, He et al (2013, 190) however found an inverse relationship between carbon disclosure and carbon performance where “poor performers” (firms with greater emissions) are more likely to disclose in order to change public perception although the empirical studies in this line of theorizing have been mixed. In general, the findings in disclosure literature are challenging to corroborate since data is gathered from different periods, regions and indices within CDP.

⁴⁹ Author’s interview with Timothy P. Dunn, Founder, Managing Member and Chief Investment Officer at Terra Alpha Investments LLC, 6 July 2016.

⁵⁰ Author’s interview with Timothy P. Dunn, Founder, Managing Member and Chief Investment Officer at Terra Alpha Investments LLC, 6 July 2016.

to [decarbonize].”⁵¹ However, positive global trends include the recognition of disclosure by regulators through the Task Force on Climate-related Financial Disclosure, as well as the ratification of the Paris Agreement by the large majority of signatories.

While CDP itself might not be on a more transformational trajectory, specific programs and coalitions to which it is a member appear to have more transformational potential. Carbon Action has a mandate of reducing carbon emissions in high-emitting sectors. Of the 1,308 targeted companies, emissions reductions are achieved largely through energy efficiency processes and product design, although there is some evidence of behavioural change (CDP 2015a, 1).⁵² However, only 40 percent (or 552) of the targeted companies responded in 2015 (CDP 2015a, 1). Given that it took 10 years for the CDP response rate of the Global 500 to go from 44 percent to 81 percent (see Figure 3), this slow uptake is somewhat to be expected. While growing institutional awareness of the risks of climate change might mean a speedier uptake, there are a variety of factors that affect this practice.

Another potential area for more ambitious action is partnerships with actors in coalitions with decarbonization mandates, largely developed in the lead up to COP21. For example, CDP is a partner to the PDC, which is premised on the idea of withdrawing capital from carbon-intensive companies and projects and reinvesting in those that are carbon efficient. Another example is We Mean Business (n.d., Take Action), which has the tag line: “inviting hundreds of companies and investors to create a low-carbon revolution.” This mandate is actualized through a number of goals that include adopting emissions reduction targets and putting a price on carbon. At the time of writing, over

⁵¹ Author’s interview with a member of CDP’s staff, 24 June 2016.

⁵² It should be noted that the biggest portion of total emissions-reduction projects is classified as “other” which is not disaggregated.

300 companies have committed to setting a science-based emissions reduction target, though only a small fraction of them have completed the technical process and been approved (see for example Science Based Targets 2016).⁵³ In short, We Mean Business and more action-oriented projects like Carbon Action would never have been possible without first getting companies to measure and disclose carbon-related information.

7. Conclusion: lessons learned

This case yields a number of lessons that may apply to organizations or coalitions who seek to influence the behaviour of market-based actors through voluntary means. First, scaling-up takes time, particularly when the normative and institutional groundwork has not already been laid. It took CDP over fifteen years to increase its institutional investor base to its current size, and it has taken a series of incremental moves to expand the regional scope and number of corporate entities reached. CDP had a bold vision of reducing corporate carbon emissions and is only now beginning to realize this through the Carbon Action program. As well, scaling-up is not a permanent trajectory and can be disrupted by external shocks. In the case of the 2009-2010 financial crisis the growth in institutional investors slowed and the response rate of the Global 500 countries dipped (See Figures 2 and 3). Framing can go some way towards scaling-up an intervention. As framing is an iterative process, a frame may need to be shifted or expanded in order to continue scaling-up an intervention. For example, CDP has expanded the carbon disclosure frame on risk, to emphasize profitability and ROI.

Second, the process of decarbonization is uneven. There are a multitude of factors that affect the uptake of the practice of disclosure including the size of the firm, the

⁵³ As of June 2016, 160 companies committed to a science based target but only 15 had been through the technical process and have been approved (author's interview with a member of CDP's staff, 24 June 2016).

industry to which it belongs (and how carbon dependent it is) and whether there is a threat of regulation.⁵⁴ So too, there is variation in how investors use this data, for example, whether it is considered material, and to what extent it affects investment decisions.⁵⁵ While CDP (2015b, 1) boasts that their institutional investors represent US\$95 trillion in assets, the amount of assets being managed in line with ESG data is unknown, and is likely only a fraction of this amount.⁵⁶ And there is variation in how investors use CDP's data. However, the history of CDP illustrates that an initiative may only need a few bold leaders to pioneer action.⁵⁷ CDP continues to leverage the most engaged investors to support new initiatives like the PDC. A critical mass of firms is also needed to adopt the practice. In the case of CDP, firms who refuse to participate represent a fairly sticky group, evidenced by the steady rate of non-disclosures.

Third, there is a need for policy lock-in to neutralize laggards.⁵⁸ The advantages of a global mandatory reporting system are widely supported by CDP as well as by the broader civil society network precisely because it would level the playing field, help guarantee action, and prevent carbon leakage. However, the benefit of not having mandatory reporting means not making standards at the level of the lowest common denominator.⁵⁹ CDP has been gradually able to increase its reporting requirements over time, while increasing the number of participants, a balance that might not be maintained in a mandatory setting.

⁵⁴ Other studies have looked at whether there is threat of audit, or whether the company is facing economic pressure to disclose; another group of studies find disclosure characteristics related to the size, sector and/or visibility of the firm important in predicting repeated disclosures (Evans et al. 2006; Luo and Tang 2014, 93).

⁵⁵ Author's interview with Alan Brown, Chairman of the Board at CDP, 24 June 2016.

⁵⁶ Author's interview with Timothy P. Dunn, Founder, Managing Member and Chief Investment Officer at Terra Alpha Investments LLC, 6 July 2016.

⁵⁷ Author's interview with a member of CDP's staff, 24 June 2016.

⁵⁸ Author's interview with Alan Brown, Chairman of the Board at CDP, 24 June 2016.

⁵⁹ Author's interview with a member of CDP's staff, 24 June 2016.

Fourth, an intervention can have unintended positive spillover effects for other similar initiatives. CDP is not just a database or a hub of information. CDP has played an important role in normalizing the practice of carbon disclosure, and this has spillover effects for other decarbonization interventions. CDP has supported other coalitions and projects in unique ways, for example, identifying and targeting non-responders—in the case of PRI—and leveraging relationships with investors to garner support for other interventions, as in the case of the PDC. CDP’s scoring methodology and expertise have been used to develop methodologies for GHG emissions reductions targets such as the Science Based Targets initiative and the related Sectoral Decarbonisation Approach. The take-away is that an intervention might have positive effects for related interventions not foreseeable at the intervention’s birth.

Lastly, CDP must be understood as one actor in a cluster of think tanks, public, private and hybridized, national and international organizations whose mandates involve ESG reporting, social responsible investing, carbon disclosure, emissions reductions targets and carbon pricing. CDP has been one of the main drivers in this “constellation of global leadership and expertise in sustainable finance” in a “very well informed and well-mobilized group” of civil society actors.⁶⁰ Networks and coalitions are important elements in decarbonization because actors can pool their resources—financial, expertise or networks—to accomplish more ambitious goals. International climate initiatives have developed in anticipation of multilateral climate change negotiations, or following a successful international summit (e.g., after the UN Climate Summit or COP21).

Understanding who is interacting with whom, and the density of these relationships,

⁶⁰ Author’s interview with a member of the UNEP Inquiry into the Design of a Sustainable Finance System, 25 July 2016.

requires network analysis. Importantly, geography matters and London (UK)—where CDP is headquartered—has a unique dynamic between civil society, market and policy actors that have been brought together in semi-institutionalized multi-stakeholder dialogues.⁶¹

In sum, CDP has played an important and lead role in normalizing the practice of carbon disclosure. While the literature has found strong correlations to disclosure and activities like emissions reductions, corporate governance etc., causation has not been clear. It is clear however that without first disclosing emissions, setting reduction targets or an internal price on carbon would not be feasible. And it is reasonable to suggest that firms might assign responsibility to carbon disclosure, in response to investor requests to complete CDP's questionnaire, which could lead to the management of carbon emissions. While disclosing climate change information is a pre-condition of emissions reductions, it remains unclear what other blend of incentives and constraints (aside from legislation) are necessary for firms to set emissions reductions targets; however, as in the case of the Carbon Action initiative, and as with CDP's corporate engagement strategy more broadly, using the weight of institutional investors to encourage firms to take action is an effective option in the absence of regulation.

There are several countercyclical trends and barriers to the widespread adoption of carbon disclosure and emissions reduction targets, including the lack of awareness on the part of investors about the risks and opportunities associated with carbon emissions and reductions, the incentive structure of corporations to significantly change their behaviour (to re-consider their fossil fuel dependence), and the lack of global corporate

⁶¹ Author's interview with a member of the UNEP Inquiry into the Design of a Sustainable Finance System, 25 July 2016.

regulation on carbon emissions. Despite these barriers, CDP has cleared important normative and institutional ground to the widespread adoption of carbon disclosure practices. While CDP is not a transformative actor in the effort to break out of current global carbon lock-in, CDP—through its Carbon Action program and partnership in coalitions—is a driver in the move from generating information to taking action towards reducing the amount of carbon in the economy.

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