

# Just Add Water: Alternative Means for Addressing the Economic Risks Posed by Water Scarcity

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“**W**ater promises to be to the 21st century what oil was to the 20th century: the precious commodity that determines the wealth of nations.”<sup>1</sup> Our economy runs on water and water security is emerging as one of the most tangible and fast-growing social, political, and economic challenges faced today.<sup>2</sup> Economic growth, rising global populations, and climate change have led to increasing concerns about water scarcity and the availability of quality water in the future.<sup>3</sup> The United Nations (“U.N.”) forecasted that by 2030, almost half of the world population will live in areas that are threatened by water stress or water scarcity, leaving a great deal of unknown risks and pressures for governments and private industries across the globe.<sup>4</sup> In the United States specifically, water use is increasing every year, leading at least thirty-six states to anticipate local, regional, or statewide water shortages even under no drought conditions.<sup>5</sup> Furthermore, even if water-use efficiency improvements are able to lessen the

demand for water, it is possible that increased population, production, and development needs will offset many efficiency improvements.<sup>6</sup>

Water scarcity poses a serious material risk for business operation and profitability for businesses around the globe due to the interconnectedness of water resources, energy, and food production.<sup>7</sup> It is estimated that if we continue the “current business-as-usual scenario,” water demand may outstrip water supply by 40% by 2030, which would put \$63 trillion of global gross domestic product (“GDP”) at risk by 2050.<sup>8</sup> Companies engaged in electric power generation, food and beverage production, technology, mining, hydraulic fracturing, and other water-intensive industries are particularly vulnerable to risks associated with water scarcity for their main operations and across their extensive supply chains.<sup>9</sup> The recent drought in California provides a clear example of the economic costs associated with the ongoing threat of water scarcity. California has a state GDP of approximately \$2 trillion and supports a major agricultural sector and a world-renowned technology sector, both of which rely on the availability of a vast water supply. A study completed by the University of California, Davis, in conjunction with the California Public Policy Institute found that in 2015 alone, the drought in California cost the state’s farming industry approximately \$2.7 billion and more than 18,000 jobs.<sup>10</sup>

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1. Shawn Tully, *Water, Water Everywhere*, FORBES (May 15, 2000), [http://archive.fortune.com/magazines/fortune/fortune\\_archive/2000/05/15/279789/index.htm](http://archive.fortune.com/magazines/fortune/fortune_archive/2000/05/15/279789/index.htm).
2. *Global Water Initiative*, WORLD ECON. F. (Nov. 15, 2017, 6:22 PM), <https://www.weforum.org/projects/global-water-initiative>.
3. BROOKE BARTON, MURKY WATERS? CORPORATE REPORTING ON WATER RISK, CERES 3 (2010), <http://www.ceres.org/resources/reports/corporate-reporting-on-water-risk-2010>.
4. Press Release, Norges Bank, CDP Launches a Global Water Disclosure Project to Raise Business Awareness of Water-Related Risks (Nov. 19, 2009), <http://www.norges-bank.no/en/Released/Press-releases/2009/Press-release-19-November-2009/>.
5. U.S. ENVTL. PROT. AGENCY, WATERSENSE, EPA-832-F-06-006, WATER SUPPLY IN THE UNITED STATES (2016), [https://www3.epa.gov/watersense/docs/ws\\_supply508.pdf](https://www3.epa.gov/watersense/docs/ws_supply508.pdf).

6. Arjen Y. Hoekstra, *Water Scarcity Challenges to Business*, SCI. AM. (Apr. 25, 2014), <http://www.scientificamerican.com/article/water-scarcity-challenges-to-business/>.
7. Andrew Park et al., *Water Risk Valuation Tool: Integrating Natural Capital Limits Into Financial Analysis of Mining Stocks*, BLOOMBERG 5–6 (Sept. 2015), [https://www.bbhub.io/sustainability/sites/6/2015/09/Bloomberg\\_WRVT\\_09162015\\_WEB.pdf](https://www.bbhub.io/sustainability/sites/6/2015/09/Bloomberg_WRVT_09162015_WEB.pdf).
8. *World’s Biggest Companies Failing on Water Risk Management*, EIRIS (June 13, 2013), <https://www.edie.net/news/4/Worlds-biggest-companies-failing-on-water-risk-management/20117/>; see also MCKINSEY & CO., THE 2030 WATER RES. GROUP, CHARTING OUR WATER FUTURE iv–v, 4–5 (2009).
9. BARTON, *supra* note 3, at 1–3.
10. Sam Sanders, *Drought May Cost California’s Farmers Almost \$3 Billion in 2015*, NAT’L PUB. RADIO (June 3, 2015, 5:46 PM), <http://www.npr.org/sections/thesalt/2015/06/03/411802252/drought-may-cost-californias-farmers-almost-3-billion-in-2015>.

Yet, despite its critical role in the global economy, water continues to be a resource that many companies fail to adequately account for in their risk assessments and is often not considered in corporate financial analyses.<sup>11</sup> Additionally, few environmental regulations target water scarcity specifically, and companies are often not required to disclose information concerning water-related risks.<sup>12</sup> It is therefore becoming increasingly necessary for government entities and corporations themselves to address the risks posed by water scarcity, disclose information about water use, and implement comprehensive plans for responsible water use and conservation.<sup>13</sup> Accessible information about a corporation's anticipated water-related risks and associated costs is imperative for stakeholders, investors, and the general public to make informed investment decisions.<sup>14</sup> Increased consumer awareness and participation, private sector initiatives, governmental regulation, and targeted investments are all needed in order to combat the threats posed by water scarcity.<sup>15</sup>

This Note will analyze the inadequacies of traditional governmental regulations in addressing the economic risks posed by water scarcity and suggest alternative means for assessing and managing those risks. Part I provides factual background information about water scarcity and the complexities of corporate water use. Part II discusses the current legal framework for regulating corporate water use. First, Part II discusses water regulation at the federal level under the U.S. Environmental Protection Agency ("EPA") as well as environmental disclosure requirements under the U.S. Securities and Exchange Commission ("SEC"). This Part also provides a brief discussion of foreign countries that have imposed mandatory environmental disclosure requirements in their corporate laws. Lastly, this Part discusses the emergence of private corporate governance in the environmental sphere as an alternative regulatory framework for influencing corporate behavior. Part III provides an analysis of each regulatory framework, positing that current traditional environmental regulation under EPA is not sufficient to address water scarcity and that insufficient SEC disclosure requirements leave a great deal of water-related information unclear or inaccurate. Part III also discusses effects of mandatory corporate disclosure requirements abroad as well as potential legal implications of private corporate governance.

Finally, Part IV suggests a two-part solution for addressing corporate water use and the risks posed by water scarcity. First, this Note argues for an amendment to current SEC regulations to require a separate report detailing information about a company's environmental impact, specifically addressing water use and material water scarcity risks. Mandatory corporate disclosures provide an important catalyst for improving corporate behavior by providing increased information, establishing benchmarks and performance comparisons within industrial sectors, and helping to demonstrate the link between a corporation's activity and the serious business risks posed by water scarcity. The second

part of the solution will focus on the trend of private corporate governance, and how increased information through mandatory corporate disclosures will act to further facilitate a framework of corporate self-regulation.

Private corporate governance may be a system that is better equipped to address water scarcity problems quickly and to react to a growing public interest in what companies are doing to address physical and financial environmental risks. In the face of a difficult and largely polarized political climate, an approach that helps support and facilitate private corporate governance through a nuanced regulatory approach may be the best means for addressing the risks posed by water scarcity. Ultimately, developing an effective solution to water scarcity will require a meaningful collaboration between businesses, policymakers, nongovernmental organizations ("NGOs"), investors, and local communities.<sup>16</sup>

## I. Factual Background

### A. Background Information and Terminology

The following section will identify key terms used when discussing water-related issues and the development of water regulations. Clear terminology is important for assuring accurate measurements of water use, regulatory compliance, and disclosures about water-related concerns. "Water scarcity" can be generally defined as the point when, under prevailing institutional arrangements, the aggregate impact of all water uses interferes with the supply or quality of water to such an extent that demand from all sectors, including the environment, cannot be satisfied.<sup>17</sup> Water scarcity is measured by calculating the ratio of total human water consumption to the available water supply in a given area.<sup>18</sup> Water scarcity often arises in areas experiencing water shortages due to drought or climate-related variability, coupled with societal impacts such as economic development and population growth.<sup>19</sup> "Water stress," on the other hand, is a broader concept and refers to a region's ability, or lack of ability, to meet the human and ecological demand for water.<sup>20</sup> "Water risk" refers to the probability of an entity like a corporation or community experiencing a damaging water-related event.<sup>21</sup> Water risk is experienced differently by various societal and economic sectors, and is also influenced by water-related conditions such as water scarcity, pollution, governance and regulation, infrastructure, and climate change.<sup>22</sup> While these terms often go hand in hand, it is important to differentiate the terminology in order to provide clear information about the water situation in a particular area or for a particular industry.

11. See BARTON, *supra* note 3, at 9, 15.

12. See *id.* at 8.

13. See *id.* at 10.

14. See *id.* at 5.

15. See Hoekstra, *supra* note 6.

16. WILLIAM SARNI, CORPORATE WATER STRATEGIES 16 (Earthscan 2011).

17. U.N. DEP'T OF ECON. & SOC. AFFAIRS, *Water Scarcity*, WATER FOR LIFE DECADE (Nov. 24, 2014), <http://www.un.org/waterforlifedecade/scarcity.shtml>.

18. Peter Schulte, *Defining Water Scarcity, Water Stress, and Water Risk: It's Not Just Semantics*, PAC. INST. (Feb. 4, 2014), <http://pacinst.org/water-definitions/> (arguing for a more harmonized approach to water reporting in order to provide clear and consistent information).

19. *Coping With Water Scarcity: Challenge of the 21st Century*, U.N. WATER 4 (2007), <http://www.unwater.org/wwd07/downloads/documents/escarcity.pdf>.

20. Schulte, *supra* note 18.

21. *Id.*

22. *Id.*

## B. Corporate Water Use and Water Scarcity

In recent years, the business community has become increasingly cognizant of the economic risks posed by climate change; however, the primary focus has largely been centered around renewable energy resources and greenhouse gas (“GHG”) emissions, while neglecting to focus on the implications climate change may have on the availability of quality water specifically.<sup>23</sup> Population growth, economic development, and increased consumer demand for water-intensive goods and products are likely to drive significant increases in agricultural and industrial demand for water.<sup>24</sup> Most major industries rely on water and its continued abundance in order to sustain productivity, however, few companies have plans in place to respond to water scarcity risks.<sup>25</sup> While there are several factors that may influence water scarcity risks in a given region, this Note will focus specifically on the water use by private industries in the United States.<sup>26</sup> Additionally, this Note will focus on the adverse effects of water scarcity and drought, and will not delve into water-related issues associated with floods and water quality.

### I. Addressing Water-Related Business Risk

Industries account for a significant amount of water use in the United States both in their immediate operations and across their vast, often transnational supply chains.<sup>27</sup> The impacts of corporate water use on an area’s water supply, ecosystems, and communities vary greatly depending on geography, water availability, and the type and size of a particular industry.<sup>28</sup> A corporation’s effect on an area’s water supply depends on several indicators, including the sources of water, the amount withdrawn from various sources, the amount of water that can be recycled or discharged, the climate of the region, and the time of year that water is withdrawn or discharged into surrounding water bodies.<sup>29</sup>

One framework for analyzing water-related business risks identifies three different types of risk that should be accounted for: physical risk, reputational risk, and regulatory risk.<sup>30</sup> Physical risks occur when a lack of water impacts business activities directly, for example when a decline or disruption in water supply undermines industrial operations, affects production capacity, irrigation capabilities, or mate-

23. JASON MORRISON ET AL., WATER SCARCITY & CLIMATE CHANGE: GROWING RISKS FOR BUSINESSES & INVESTORS, CERES 3 (2009), <http://www.ceres.org/resources/reports/water-scarcity-climate-change-risks-for-investors-2009> (finding that “54% of 2,000 global companies are exposed to water risks, but only 0.22% have adequate management systems, policies and reporting mechanisms in place to tackle the risks”); see also SARINI, *supra* note 16, at 1 (“[C]limate change and energy have gained increased recognition over recent years, it is the competition for water that poses a significant risk (and opportunity) to business and civil society”).

24. MORRISON ET AL., *supra* note 23, at 4.

25. *Id.* at 1, 3.

26. See *id.* (listing factors that may influence water scarcity).

27. *Id.* at 4–5.

28. See DERK KUIPER ET AL., WATER FOOTPRINT AND CORPORATE WATER ACCOUNTING FOR RESOURCE EFFICIENCY 7 (United Nations Environment Programme, 2009).

29. BARTON, *supra* note 3, at 20.

30. MORRISON ET AL., *supra* note 23, at 11.

rial processing.<sup>31</sup> The totality of physical risks facing a particular industry or corporation may be difficult to identify because traditional water use estimates often fail to address water risks embedded in the supply chain.<sup>32</sup> Reputational risks may occur when declines in water availability lead to increased competition and tension between companies, government, and local populations. Such tensions may affect a business’s access to water as well as their reputation among consumers, especially if the business is operating in a water-stressed region. Litigation from local communities, NGOs, and environmental groups may also pose risks to a company’s reputation and profitability. Finally, regulatory risks occur when local governments and state policymakers are required to reallocate water supplies, increase water prices, impose restrictions on water use, or impose heightened technology requirements. It is important for companies to incorporate the expectation of increased governmental regulation in their investment decisions and strategic planning in order for stakeholders to have complete understanding of a company’s health and financial value.<sup>33</sup>

### 2. Uncertainties Relating to Water Scarcity Risk

An important problem in adequately addressing water scarcity arises from the inherent difficulty in measuring the risk it poses. There is a high degree of uncertainty in determining the nature of the risk, the level of impact certain risks may pose, and how best to mitigate the risk without compromising economic prosperity.<sup>34</sup> Because of uncertainty, corporations often must make choices about how much weight they will put in addressing future water-related risks in their business plans.<sup>35</sup> The economic risks and opportunities associated with water resources are often unclear due to a lack of industry transparency and incomplete or inaccurate data.<sup>36</sup>

Even in the face of uncertainties, inaction may be highly problematic from both an environmental and an economic standpoint. Water scarcity is likely to bring about higher costs of production through rising water prices and impaired business activities, increased costs in terms of regulatory compliance as governmental regulations react to water scarcity issues, litigation costs as citizens groups and NGOs respond to increasing water concerns, and reputational risks as corporations and local communities compete for limited water resources.<sup>37</sup>

31. *Id.*

32. *Id.*

33. See CLIMATE RISK DISCLOSURE BY THE S&P 500, CERES 9 (2007) [hereinafter CLIMATE RISK DISCLOSURE], [https://www.cdp.net/CDPResults/CDP4\\_S\\_and\\_P500\\_Report.pdf](https://www.cdp.net/CDPResults/CDP4_S_and_P500_Report.pdf).

34. Blair Warner, *Placing Al Gore on the Board: Accounting for Environmental Risk in the Corporate Governance Model*, 29 NOTRE DAME J.L. ETHICS & PUB. POL’Y 329, 330 (2015).

35. *Id.*

36. MCKINSEY & CO., *supra* note 8, at 4.

37. BARTON, *supra* note 3, at 17.

### C. Tools for Measuring Corporate Water Use

The ways in which an industry interacts with the water supply is often highly localized,<sup>38</sup> however, companies are often not required to publicly disclose from where their water is sourced or how much is used, even if the company is operating in a drought-ridden region.<sup>39</sup> Evaluating water use and proneness to water risk can be difficult; however some organizations have begun developing frameworks for assessing water use and water risk.

A corporation's water use may be assessed using "Water Footprinting," a methodology developed by the Water Footprint Network ("WFN").<sup>40</sup> Water Footprinting is a process for determining "the total volume of freshwater used to produce the goods and services produced by that business."<sup>41</sup> A company's water footprint includes water use from immediate operations as well as those embedded in the company's supply chain.<sup>42</sup> Water Footprinting allows companies to determine where and when water is used in their business operations and account for water-intensive practices.<sup>43</sup> Through the footprinting framework, a corporation can assess localized water use by region or facility, and develop a standard that can be used to compare water use among industry peers.<sup>44</sup>

Private actors, including NGOs, are increasingly playing a regulatory and enforcement role by creating assessment standards, requesting and disclosing data, and overseeing compliance by corporate actors.<sup>45</sup> The Global Reporting Initiative ("GRI") is a multistakeholder coalition that assists companies and organizations "measure, understand, and communicate their economic, environmental, social and governance performance, and then set goals, and manage change more effectively."<sup>46</sup> The GRI's water reporting framework includes five water-related indicators: total water withdrawal by source, water sources significantly affected by withdrawal of water, percentage and total volume of water recycled and reused, total water discharge by quality and destination, and identity, size, protected status, and biodiversity value of water bodies and related habitats affected by an organization's discharge of water and runoff.<sup>47</sup> Organizations including the Carbon Disclosure Project<sup>48</sup> ("CDP") and the United Nations CEO

Water Mandate<sup>49</sup> ("the Mandate") have also launched programs that assist businesses and investors to understand the risks and opportunities associated with water scarcity and other water-related issues.<sup>50</sup> The CDP calls on companies to report on water use, potential exposure to water scarcity, and changing water availability through a questionnaire system, which CDP then releases to the public.<sup>51</sup> The Mandate assists its business endorsers in identifying and reducing business risk by sharing best water stewardship practices, developing research tools and transparency guidelines, and facilitating a collective action approach to address water-related risks.<sup>52</sup>

The increase in third-party involvement indicates a growing interest in corporate reporting on water use and the economic risks water scarcity may pose for businesses. The projects discussed above are important for providing guidance to companies in accounting for water use and developing strategies for mitigating risks, and may also provide helpful frameworks for future regulations.<sup>53</sup>

## II. Legal Background

Water regulation in the United States is a complicated and multifaceted area with the potential for involvement by multiple regulatory agencies at the federal, state and local levels, as well as involvement by private entities.<sup>54</sup> The remaining sections of this Note will focus on the regulation of corporate actors, specifically discussing overarching sources of federal regulation through EPA and the SEC, as well as the developing trend of corporate self-regulation through a system of private corporate governance. It is important to note that corporations are also subject to the state and local rules in effect in their place of operation. Some states and regions impose stricter rules and standards regarding corporate water use and accounting, but this Note will not delve into individual state regulations.

### A. Traditional Environmental Regulation

#### 1. Overview of Traditional Forms of Federal Water Regulation

The dominant strategy of federal environmental law has historically been one of "command and control," or traditional regulation.<sup>55</sup> Within a traditional regulatory system, federal agencies develop a set of rules, a system for inspecting and monitoring rule compliance, and impose penalties against entities that fail to comply with the established rules.<sup>56</sup> Tradi-

38. *Id.* at 17–20.

39. See Julia Lurie, *Bottled Water Comes From the Most Drought-Ridden Places in the Country*, MOTHER JONES (Aug. 11, 2014, 6:00 AM), <http://www.motherjones.com/environment/2014/08/bottled-water-california-drought> (reporting that Nestle is not required to disclose information about water use by their bottling plants operating in drought-ridden regions of south-eastern areas of California).

40. BARTON, *supra* note 3, at 21.

41. *Id.*

42. *Id.* at 20.

43. *What Is a Water Footprint*, WATER FOOTPRINT NETWORK, <http://waterfootprint.org/en/water-footprint/what-is-water-footprint/> (last visited Mar. 10, 2017).

44. MORRISON ET AL., *supra* note 23, at 19.

45. Warner, *supra* note 34, at 331.

46. *About Sustainability Reporting*, GLOBAL REPORTING INITIATIVE [hereinafter GLOBAL REPORTING INITIATIVE], <https://www.globalreporting.org/information/sustainability-reporting/Pages/default.aspx> (last visited Mar. 9, 2017).

47. BARTON, *supra* note 3, at 20; see also GLOBAL REPORTING INITIATIVE, *supra* note 46.

48. Press Release, *supra* note 4.

49. *Transparency-Disclosure Policy*, CEO WATER MANDATE 1 (2015), [http://ceowatermandate.org/files/Transparency\\_Policy.pdf](http://ceowatermandate.org/files/Transparency_Policy.pdf) (last visited Mar. 25, 2017).

50. Press Release, *supra* note 4.

51. *Id.*

52. *Mission & Governance*, CEO WATER MANDATE (2015), <http://ceowatermandate.org/what-we-do/mission-governance/>.

53. GLOBAL REPORTING INITIATIVE, *supra* note 46, at 4.

54. ADAM REIMER, U.S. WATER POLICY: TRENDS AND FUTURE DISCLOSURES 28 (Nat'l Agric. & Rural Dev. Policy Ctr. 2012).

55. Daniel J. Fiorino, *Rethinking Environmental Regulation: Perspectives on Law and Governance*, 23 HARV. ENVTL. L. REV. 441, 447 (1999).

56. *Id.*

tional governmental regulation usually involves positive law, which includes traditional models of law such as statutes, regulations, and court decisions that interpret the development and enforcement of statutes and regulations.<sup>57</sup> Government officials at the federal and state levels are responsible for developing, implementing and enforcing environmental regulations, and corporations and other private actors must alter their behaviors in order to respond to regulations and technology requirements.<sup>58</sup>

In the early part of the 20th century, water supply, allocation, and sanitation were largely the responsibility of local governments with regulations implemented at the state level and little to no involvement from the federal government.<sup>59</sup> Starting in the mid-twentieth century however, mounting concerns about pollution and water quality led to an expansion of federal authority over water quality standards and enforcement.<sup>60</sup> The establishment of EPA in 1970 ushered in more comprehensive federal regulations for water supply, sanitation, and pollution controls. Congress authorized EPA to write regulations and impose mandatory requirements on individuals, state and local governments, businesses, and organizations.<sup>61</sup> EPA is responsible for enforcing federal laws concerning safe drinking water, managing pollution levels, protecting watersheds and fresh water sources, and providing guidance and support for municipal water treatment plants.<sup>62</sup>

## 2. Traditional Regulation of Water Use and Water Quality

EPA develops regulations and compliance guidelines on a sector-by-sector basis, resulting in most business sectors being affected by several environmental statutes and regulations.<sup>63</sup> EPA also has the ability to delegate regulatory enforcement and implementation authority to individual state agencies and local municipalities.<sup>64</sup> Federal acts such as the Clean Water Act (“CWA”) and the Safe Drinking Water Act (“SDWA”) provide baseline controls such as ambient water quality standards, technology requirements, and permitting requirements.<sup>65</sup> The CWA specifically establishes water pollution control programs and water quality standards that indicate the amount of allowable contaminants in surface waters.<sup>66</sup> Federal regulatory standards often act as a

floor below which states cannot go, but states may also enact requirements that are stricter than the standards required at the federal level.<sup>67</sup>

In 2012, EPA released the *National Water Program 2012 Strategy: Response to Climate Change* (“Water Strategy”), which described the long-term goals for managing sustainable water resources in response to climate change.<sup>68</sup> In the Water Strategy, EPA set a total of nineteen distinct goals relating to climate change, which could be achieved through various national water programs and research products.<sup>69</sup> The Water Strategy goals include the development of water infrastructure, increased water quality standards, wetland and watershed maintenance, and the incorporation of climate change risks into existing EPA regulations and agencies.<sup>70</sup> The Water Strategy also developed an assessment tool to track implementation progress, which scores each action through seven developmental phases.<sup>71</sup> The most recent assessment occurred in 2014.<sup>72</sup> EPA’s Office of Water (“OW”) annually releases National Water Program Guidance, which details EPA’s priorities and implementation strategies.<sup>73</sup> In the Fiscal Year 2016-2017 Guidance, EPA expressed the goal of expanding its efforts to adapt federal water programs in response to climate change concerns.<sup>74</sup>

Other EPA programs include the Climate Resilience Evaluation and Awareness Tool (“CREAT”), which is a water assessment tool that allows water utilities to assess the potential impacts of climate change.<sup>75</sup> CREAT assists utilities in addressing climate change by identifying region-specific threats, assets that could be affected, and various adaptive measures that a utility can implement.<sup>76</sup> EPA contributes to the development of sustainable water infrastructure by pursuing the Sustainable Infrastructure Program, which focuses on institutionalizing sustainable practices and wastewater utilities.<sup>77</sup> EPA also sponsors the federal program WaterSense, which promotes water efficiency through labeling on consumer products and appliances.<sup>78</sup> WaterSense is a voluntary program that allows companies to seek a separate certification for their products.<sup>79</sup> Finally, EPA recently

57. Michael P. Vandenberg, *Private Environmental Governance*, 99 CORNELL L. REV. 117, 134 (2014).

58. *Id.* at 131, 134–35.

59. REIMER, *supra* note 54, at 2.

60. *Id.*

61. *Laws & Regulations*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/laws-regulations/regulations> (last visited Mar. 25, 2017).

62. *Regulatory Information by Topic: Water*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/regulatory-information-topic/regulatory-information-topic-water> (last visited Mar. 25, 2017).

63. See generally *Laws & Regulations*, *supra* note 61.

64. *E.g.*, 33 U.S.C. § 1342(b) (2011) (EPA can delegate to the states the authority to oversee and enforce NPDES program).

65. See, *e.g.*, *Massachusetts v. EPA*, 549 U.S. 497 (2007); *Rocky Mountain Farmers Union v. Goldstone*, 843 F. Supp. 2d 1042 (E.D. Cal. 2011) (upholding the California Low Carbon Fuel Standard, which imposed a more stringent tailpipe emission standard than that required by EPA).

66. See *Summary of the Clean Water Act*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-clean-water-act> (last visited Apr. 17, 2017).

67. See, *e.g.*, *Goldstone*, 843 F. Supp. 2d at 1060; see also ENVTL. LAW INST., STATE CONSTRAINTS: STATE-IMPOSED LIMITATIONS ON THE AUTHORITY TO REGULATE WATERS BEYOND THE SCOPE OF THE FEDERAL CLEAN WATER ACT 1 (2013).

68. U.S. ENVTL. PROT. AGENCY, OFFICE OF WATER, 2014 HIGHLIGHTS OF PROGRESS: RESPONSES TO CLIMATE CHANGE BY THE NATIONAL WATER PROGRAM 1 (2015) [hereinafter *The Water Strategy*].

69. *Id.* at 16.

70. *Id.* at 3–4.

71. *Id.* at 2.

72. *Id.*

73. U.S. ENVTL. PROT. AGENCY, OFFICE OF WATER, EPA 420-R-15-008, FY2016-17 NATIONAL WATER PROGRAM GUIDANCE 3 (2015) [hereinafter *WATER PROGRAM GUIDANCE*], [https://www.epa.gov/sites/production/files/2015-04/documents/2016-2017\\_nwpg\\_final.pdf](https://www.epa.gov/sites/production/files/2015-04/documents/2016-2017_nwpg_final.pdf).

74. *Id.* at 23.

75. See U.S. ENVTL. PROT. AGENCY, *Assess Water Utility Climate Risks With the Climate Evaluation and Awareness Tool 6* (May 2016), [https://www.epa.gov/sites/production/files/2016-05/documents/creat\\_3\\_0\\_methodology\\_guide\\_may\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-05/documents/creat_3_0_methodology_guide_may_2016.pdf).

76. *Id.*

77. See *WATER PROGRAM GUIDANCE*, *supra* note 73, at 12.

78. See *What Is WaterSense?*, U.S. ENVTL. PROT. AGENCY, [https://www3.epa.gov/watersense/about\\_us/what\\_is\\_ws.html](https://www3.epa.gov/watersense/about_us/what_is_ws.html) (last updated Jan. 26, 2017).

79. *Id.*

sought applications from universities and organizations like the California Public Policy Institute to investigate how drought exacerbated by climate change may impact surface and groundwater quantity and availability.<sup>80</sup> Research grants may be awarded for the purpose of developing systems-based strategies for improving the nation's ability to plan and respond to water scarcity problems.<sup>81</sup>

In terms of reporting, EPA expressed the goal of increasing public accessibility and understandability of water quality data by simplifying and automating a water quality reporting process, thereby reducing bureaucratic burdens.<sup>82</sup> Currently, states, local entities, and the parties subject to permitting requirements under the CWA operate under a slow and burdensome system of water quality assessment and reporting across the various EPA programs.<sup>83</sup>

## B. Environmental Regulation in Securities Law

An additional, and perhaps less obvious, source of environmental regulation comes from corporate reporting requirements to the SEC, which provide information to shareholders and the general public about a company's profitability and any material risks that may affect the company's operations and future success.

### I. Corporate Reporting Through the Securities & Exchange Commission

Risks that may materially affect a company are disclosed in a publicly traded company's financial statements, which are filed with the SEC.<sup>84</sup> Financial filings remain the primary source of information for investors and other company stakeholders.<sup>85</sup> The Securities Act of 1933 ("Securities Act") requires companies to register important financial and other significant information prior to offering securities to the public.<sup>86</sup> The Securities Exchange Act of 1934 ("Exchange Act") provides the SEC with broad authority over all aspects of the securities industry, including conduct in the market, disciplinary powers, and required reporting of information by companies with publicly traded securities.<sup>87</sup> The SEC developed an integrated disclosure system for registered companies, which is provided in Regulation S-K.<sup>88</sup> Regulation S-K provides nonfinancial disclosure requirements and guidelines

for annual reports ("Form 10-K"),<sup>89</sup> quarterly reports ("Form 10-Q")<sup>90</sup>, and reports for specific events that may be important to shareholders ("Form 8-K").<sup>91</sup>

SEC disclosure requirements are triggered when the information is deemed "material."<sup>92</sup> "Information is material if 'there is a substantial likelihood that a reasonable shareholder (or investor) would consider [the information] important in deciding how to vote,' or in making an investment decision."<sup>93</sup> "The materiality standard is difficult to apply because there is no generally accepted formula," especially when the issues involve future uncertainties, such as the effects of climate change and other environmental risks.<sup>94</sup>

## 2. Environmental Reporting Requirements

Environmental reporting requirements are provided in three relevant sections of Regulation S-K; Items 101, 103, and 303.<sup>95</sup> In 1973, the SEC amended the line item requirements in Regulation S-K to generally require companies to consider environmental impacts of their activities in order to comply with the National Environmental Policy Act ("NEPA").<sup>96</sup>

Item 101 of Regulation S-K requires registered companies to describe the general development of the business during the past five years.<sup>97</sup> Specifically, Item 101 requires disclosures to be made "as to the material effects that compliance with Federal, State, and local provisions . . . regulating the discharge of materials into the environment . . . [and] any material estimated capital expenditures for environmental control facilities."<sup>98</sup> Here, a company may be required to provide information about the financial and competitive effects of complying with environmental regulations in the area of company operation to the extent that the effects of the regulation are considered material.<sup>99</sup>

Item 103 requires companies to describe "any material pending legal proceedings, other than ordinary routine litigation incidental to the business, to which the registrant or any of its subsidiaries is a party or of which any of their property is the subject."<sup>100</sup> Legal proceedings that arise under any federal, state, or local regulation concerning discharge of materials into the environment, or for the purpose of protecting the environment "shall not be deemed ordinary routine litigation

80. *National Priorities: Systems-Based Strategies to Improve the Nation's Ability to Plan and Respond to Water Scarcity and Drought Due to Climate Change*, U.S. ENVTL. PROT. AGENCY, [http://cfpub.epa.gov/ncer/abstracts/new/index.cfm/fuseaction/display.rfatext/rfa\\_id/589#Synopsis](http://cfpub.epa.gov/ncer/abstracts/new/index.cfm/fuseaction/display.rfatext/rfa_id/589#Synopsis) (last updated Mar. 9, 2017).

81. *Id.*

82. WATER PROGRAM GUIDANCE, *supra* note 73, at 17.

83. *Id.*

84. *See Fact Answers: The Laws That Govern the Securities Industry*, U.S. SEC. & EXCH. COMM'N, <https://www.sec.gov/about/laws.shtml#secact1933> (last updated Oct. 1, 2013).

85. *See id.*

86. *Fact Answers, supra* note 84.

87. *Id.* This note will focus specifically on publicly traded companies, which are subject to federal SEC regulations, and will not analyze the conduct of private companies that are not subject to federal financial regulations.

88. *See generally* 17 C.F.R. § 229.1 (2011).

89. *Id.* § 249.310 (SEC Form 10-K specifies the information a company must disclose in its annual reports).

90. *Id.* § 249.308A.

91. *Id.* § 249.308.

92. Marlene Martin, *Can Shareholders "Bring the Sun" to Climate Change Disclosure?*, 14 WYO. L. REV. 289, 299 (2014).

93. *Id.* (quoting *TSC Indus., Inc. v. Northway*, 426 U.S. 438, 449 (1976)).

94. *Id.*

95. Rick E. Hansen, *Climate Change Disclosure by SEC Registrants: Revising the SEC's 2010 Interpretive Release*, 6 BROOK. J. CORP. FIN. & COM. L. 487, 492 (2012).

96. Betty Moy Huber, *Will the SEC's Current Disclosure Reform Initiate Result in Stricter Environmental and Sustainability Disclosure Requirements*, ENVTL. DISCLOSURE COMM. NEWSL. (Am. Bar Assoc.), Apr. 2014, at 1, 3 ("NEPA generally requires federal agencies to consider the environmental impacts of their decisions that could significantly affect the environment.").

97. 17 C.F.R. § 229.101(a)(1) (2011).

98. *Id.* § 229.101(c)(xii).

99. Hansen, *supra* note 95, at 493.

100. 17 C.F.R. § 229.103.

incidental to the business.”<sup>101</sup> However, a legal proceeding is only considered material if the damages, monetary sanctions, or capital expenditures exceed 10% of the current assets of the company in question, or if a governmental authority is a party to the proceedings and the monetary sanctions exceed \$100,000.<sup>102</sup>

Finally, Item 303 requires companies to provide an analysis of the company’s financial condition and the results of operations, including projections about future performance.<sup>103</sup> Specifically, Item 303 requires disclosure of “any known trends or any known demands, commitments, events or uncertainties that will result in or that are reasonably likely to result in the registrant’s liquidity increasing or decreasing in any material way.”<sup>104</sup> If any material deficiency is identified, the company must also indicate a course of action in order to remedy the deficiency.<sup>105</sup> A registered company must also include any known material trends concerning the registrant’s capital resources, any unusual events, transactions, or significant economic changes that materially affect the amount of reported income, and “any known trends or uncertainties that have had or the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations.”<sup>106</sup>

In January 2010, the SEC approved a new interpretive release (“Interpretive Release”), which provided guidance to companies subject to federal securities regulations regarding a company’s disclosure obligations.<sup>107</sup> The Interpretive Release included the risks, opportunities, and potential impacts of climate change and “changes in the availability or quality of water” in the listed information that companies should disclose in an annual report.<sup>108</sup> The Interpretive Release calls on companies to disclose risks such as decreased production capacity as a result of drought or significant physical impacts that may affect the companies’ operations and financial results.<sup>109</sup> The Interpretive Release resulted from pressure from shareholders to provide information about the financial risks associated with complying with environmental regulations and the possible reduction in production capacity or other economic fallout associated with environmental risks.<sup>110</sup> The SEC emphasized, however, that the Interpretive Release did not impose new disclosure requirements.<sup>111</sup>

Most recently, in February 2014, the SEC issued a draft of a Strategic Plan, which set out the SEC’s mission, values, and strategic goals for fiscal years 2014 through 2018.<sup>112</sup> The report announced the SEC’s intention to review operational and risk management disclosures relevant to environmental and sustainability issues.<sup>113</sup> Report leaders, however, expressed concern about a comprehensive review of disclosure requirements being derailed due to resource constraints and competing priorities.<sup>114</sup>

### 3. Environmental Reporting Requirements Outside of the United States

Regulations mandating the disclosure of environmental, social, and governance data are becoming increasingly common in countries outside of the United States.<sup>115</sup> Several European countries and Australia utilize environmental reporting as a policy tool for promoting sustainable development and addressing environmental concerns in general.<sup>116</sup> France, Norway, and Australia provide examples of countries that have implemented mandatory corporate reporting of performance and compliance with environmental regulations specifically.<sup>117</sup> Reporting requirements in these countries are separate from environmental legislation and are instead integrated into the states’ corporation laws, which are enforced by financial agencies rather than environmental agencies.<sup>118</sup> Unlike conventional regulatory approaches to public policy goals such as environmental sustainability, corporate environmental reporting mandates the provision of information to interested actors who are likely to utilize the information to promote more desirable behaviors.<sup>119</sup> A key question is whether mandatory corporate disclosures and reporting requirements have a positive effect on a corporation’s environmental behavior.<sup>120</sup>

In 1998, Norway passed Section 3.3 of the Norwegian Accounting Act, which requires Director Reports to include “[i]nformation concerning current activities including inputs and products that may cause a not insignificant impact on the external environment.”<sup>121</sup> The regulation also requires the disclosure of “the actual and potential environmental impacts of particular activities . . . and the [specification of] efforts initiated to eliminate or reduce negative environmen-

101. *Id.* § 229.103(5).

102. *Id.* § 229.103(5)(A)-(C).

103. *Id.* § 229.303(a)(1)-(5).

104. *Id.* § 229.303(a)(1).

105. 17 C.F.R. § 229.303(a)(1) (2011).

106. *Id.* § 229.303(a)(3)(ii).

107. Hansen, *supra* note 95, at 487; *see also* COMM’N GUIDANCE REGARDING DISCLOSURE RELATED TO CLIMATE CHANGE, U.S. SEC. & EXCH. COMM’N (2010) [hereinafter COMM’N GUIDANCE], <https://www.sec.gov/rules/interp/2010/33-9106.pdf>.

108. *See* COMM’N GUIDANCE, *supra* note 107, at 6.

109. BARTON, *supra* note 3, at 7–8.

110. *See* COMM’N GUIDANCE, *supra* note 107, at 7; *see also* BARTON, *supra* note 3, at 22.

111. FISCAL YEARS 2014–2018: DRAFT FOR COMMENT, U.S. SEC. & EXCH. COMM’N 6 (2014) [hereinafter SEC DRAFT STRATEGIC PLAN], <https://www.sec.gov/about/sec-strategic-plan-2014-2018-draft.pdf>.

112. *Id.* at 1.

113. *Id.* at 37; *see also* Huber, *supra* note 96, at 3.

114. Huber, *supra* note 96, at 3.

115. Ioannis Ioannou & George Serafeim, *The Consequences of Mandatory Corporate Sustainability Reporting: Evidence From Four Countries*, 5–6, 12 (Harv. Bus. Sch., Working Paper No. 11-100, 2014) (analyzing the effects of mandatory corporate disclosures in China, South Africa, Denmark, and Malaysia).

116. Douglas A. Kysar, *Sustainable Development and Private Global Governance*, 83 TEX. L. REV. 2109, 2158 (2005).

117. KAREN BUBNA-LITIC, COMPLIANCE AND ENFORCEMENT IN ENVIRONMENTAL LAW 641, 641–43 (LeRoy C. Paddock et al. eds., 2011).

118. *Id.* at 643; *see also* MARY LOU EGAN ET AL., FRANCE’S NOUVELLES REGULATION ECONOMIQUES: USING GOVERNMENT MANDATES FOR CORPORATE REPORTING TO PROMOTE ENVIRONMENTALLY SUSTAINABLE ECONOMIC DEVELOPMENT 10 (2003).

119. Kysar, *supra* note 116, at 2159.

120. Ioannou & Serafeim, *supra* note 115, at 19.

121. BUBNA-LITIC, *supra* note 117, at 643.

tal impacts.”<sup>122</sup> In 2001, France passed Article 116 of the Law in New Economic Regulation, which similarly requires companies to report information about the social and environmental impacts of their activities in their annual financial reports, including water use and natural resource use, emissions of GHGs, energy consumption, and the efforts the company has taken to reduce environmental risks.<sup>123</sup>

In Australia, Section 299(1)(f) of the Company Law Review Act of 1998 provides that “the Director’s Report for a financial year must: (f) if the entity’s operations are subject to any particular and significant environmental regulation . . . details of the entity’s performance in relation to environmental regulation.”<sup>124</sup> Guidelines provided by the Australian Securities and Investment Commission (“ASIC”) state that the requirements do not relate specifically to financial disclosures, but to performance with regard to environmental regulations.<sup>125</sup> Additionally, the information reported cannot be reduced or eliminated because it has already been provided to an environmental regulation authority.<sup>126</sup>

### C. Private Corporate Governance in the Environmental Regulatory Framework

The previous sections discussed traditional governmental regulation, however it is important to analyze the future of environmental regulation in the context of private governance and its collaboration with traditional regulatory frameworks. The past few decades have seen a dramatic shift from “government to governance,” in the environmental regulatory framework.<sup>127</sup> The concept of “governance” includes all “processes and institutions, both formal and informal that guide and restrain the collective activities of a group.”<sup>128</sup> Governance includes a number of diverse actors, both public and private, that contribute to the formation, development and oversight of the regulatory framework.<sup>129</sup>

In the past, the primary environmental pressures on businesses included the need to comply with legislation, regulations, and to account for litigation costs.<sup>130</sup> Private corporate governance represents a new model of legal and extralegal influences on the environmentally significant behavior of corporations and households.<sup>131</sup>

Private environmental governance occurs when the private sector assumes a regulatory role by developing its own codes and standards for addressing environmental risks that exceed the standards required by law.<sup>132</sup> Through private

environmental governance, corporations develop and impose voluntary codes of conduct and standards, which are often accompanied by the development of nongovernmental product standards, labeling, and marketing schemes.<sup>133</sup> These actions are often considered to fall under the umbrella of “corporate social responsibility” (“CSR”).<sup>134</sup> CSR behavior may stem from the organizational values of a company’s senior management, but more often CSR behavior develops from underlying economic drivers that have changed drastically in recent years.<sup>135</sup> Such economic drivers include: company reputation, customer demand, pressure from investors and stakeholders, supply-chain requirements, lower operational risks and costs, liability concerns, community demands, and the enhanced ability to plan operations, anticipate risks, and possibly shape future regulations.<sup>136</sup>

Private corporate governance in the environmental sphere may come in several different forms. Environmental governance may include a combination of government standards and voluntary standards, less formal standards adopted by companies or trade organizations, standards developed by third-party certification companies or organizations, or industry codes of conduct.<sup>137</sup> Voluntary corporate governance may require and result in substantive action or simply call for the disclosure of certain information to the public or to company stakeholders.<sup>138</sup>

The growing trend of private environmental governance and regulatory involvement by nongovernmental actors reflects a shift in the modern conception of environmental regulation.<sup>139</sup> Instead of relying solely on government officials and agency experts, other parties are becoming involved and increased public involvement is beginning to shape the environmental regulatory structure.<sup>140</sup>

## III. Legal Analysis

Regulatory organizations and state environmental organizations are becoming increasingly cognizant of the fact that traditional approaches to environmental regulation are alone not sufficient to achieve the outcomes necessary to solve our nation’s critical environmental problems.<sup>141</sup> Water is a critical resource that is not only necessary for the prosperity of future generations, but also one upon which virtually every industry relies.<sup>142</sup> However, water is a resource that is often taken for

122. *Id.*

123. *Id.* at 644; see also EGAN ET AL., *supra* note 118 at 12.

124. BUBNA-LITIC, *supra* note 117, at 642.

125. *Id.* at 642.

126. *Id.*

127. Sol Picciotto, *Networks in International Economic Integration: Fragmented States and the Dilemmas of Neo-Liberalism*, 17 Nw. J. INT’L L. & BUS. 1024, 1018 (1996–1997); see also Kysar, *supra* note 116, at 2154.

128. GOVERNANCE IN A GLOBALIZING WORLD 1, 12 (Joseph D. Nye & John D. Donahue eds., 2000).

129. Kysar, *supra* note 116, at 2154.

130. *Id.*

131. Vandenbergh, *supra* note 57, at 133.

132. ENVTL. LAW INST., *Is Private Governance Changing the Practice of Corporate Environmental Law? (2015 Corporate Forum)* (Oct. 20, 2015) [hereinafter ENVTL.

LAW INST.], <http://www.eli.org/events/private-governance-changing-practice-corporate-environmental-law-2015-corporate-forum-0>; see also ENVTL. LAW INST., NEXT GENERATION IN ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT 121, 126 (LeRoy C. Paddock & Jessica A. Wentz eds., 2014) [hereinafter NEXT GENERATION].

133. ENVTL. LAW INST., *supra* note 132.

134. NEXT GENERATION, *supra* note 132, at 126.

135. *Id.*

136. *Id.* at 126–27.

137. ENVTL. LAW INST., *supra* note 132.

138. *Id.*

139. See LeRoy C. Paddock, *Green Governance: Building the Competencies Necessary for Effective Environmental Management*, 38 ELR 10609, 10611–13 (Sept. 2008).

140. *Id.*

141. *Id.*

142. MORRISON ET AL., *supra* note 23, at 1.



granted,<sup>143</sup> and water scarcity risk is not adequately addressed in current regulation of corporate activities.

### A. How Federal Environmental Regulation Falls Short in Addressing Water Scarcity

EPA currently does not have a sufficient regulatory system in place that addresses water scarcity specifically, nor are corporations required to prepare water-related risk assessments or develop plans for addressing water scarcity in the future as a part of a corporation's projected financial analysis. The nature of modern environmental challenges has "undergone a fundamental change that the existing regulatory-focused system of environmental governance will not be able by itself to ensure healthy air, clean water, and a stable climate."<sup>144</sup> The government and its appointed agencies have been the primary regulatory actors responsible for solving environmental problems, usually with punishment as the primary method for securing compliance on the part of the private sector.<sup>145</sup> While certain federal regulations have been successful in addressing water pollution concerns and implementing technology standards,<sup>146</sup> this Note argues that the current federal regulatory scheme does not adequately address the risks posed by water scarcity.

The traditional regulatory format arguably does not facilitate a complex and adaptive system; instead, "it reveals a system designed to deal with older, narrowly defined environmental problems of a limited range of pollutants emanating from larger point sources."<sup>147</sup> For example, traditional environmental laws such as the CWA tend to focus on specific pollutants discharged from individual facilities, which are regulated through facility-specific permits, inspections, and enforcement regimes.<sup>148</sup> Nonadaptive regulatory and enforcement programs do not adequately consider the broad range of internal economic drivers that may affect an entity's environmental behavior, including reputation, supply-chain requirements, employee and community relations, access to markets, product differentiation, and government relations.<sup>149</sup> Instead, the current system is more often based on external drivers such as taxes, fees, and subsidies imposed by the government, which limit the types and effectiveness of regulations that are implemented.<sup>150</sup> All in all, the current state of federal environmental regulation arguably does not reflect the complex and rapidly changing world we live in.<sup>151</sup>

143. *Id.* at i.

144. NEXT GENERATION, *supra* note 132, at 121.

145. ALEXANDER VOLOKH ET AL., INTRODUCTION TO RACE TO THE TOP: THE INNOVATIVE FACE OF STATE ENVIRONMENTAL REGULATION 2 (1998) (arguing for a regulatory approach that focuses on problem solving rather than punishment).

146. William L. Andreen, *Water Quality Today—Has the Clean Water Act Been a Success*, 55 ALA. L. REV. 537, 538 (2004) (arguing that technology-based effluent limitations through a permitting system has been a successful approach for controlling point sources due to reductions in pollution levels and lower than anticipated costs of compliance).

147. NEXT GENERATION, *supra* note 132, at 123.

148. *Id.*

149. *Id.*; Andreen, *supra* note 146, at 548.

150. *Id.* at 124–26.

151. Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 343 (2004).

Regulations and programs that do target water scarcity and other climate change-related concerns are often not mandatory, do not apply to corporate activity specifically, or are not adequately developed. The 2014 Water Strategy Assessment<sup>152</sup> conducted by EPA to review the progress of various government initiated water projects<sup>153</sup> scored the development of climate change-related water projects at fifty-seven out of a possible 133 points.<sup>154</sup> These findings indicate that many programs pursued by EPA that called on state and local governments, private entities, and utilities to address various water risks including water quality, infrastructure requirements, and watershed management either progressed very little, or remain in the early development stages.<sup>155</sup> Additionally, while programs like WaterSense and CREAT<sup>156</sup> indicate important developments in calling for water efficiency and effective corporate water reporting, the programs are not mandatory and do not place any specific requirements on companies to account for their direct water use or that of their supply chains.<sup>157</sup>

Another practical problem with imposing additional federal environmental regulations is the difficulty of passing effective and comprehensive environmental legislation.<sup>158</sup> Additionally, no major federal statute has been enacted since Congress passed amendments to the Clean Air Act in 1990, leaving a period of statutory inaction that spans almost thirty years.<sup>159</sup> Even in the face of increasing scientific evidence about threats imposed by climate change, water scarcity, and GHGs, very little regulation has been enacted at the federal level,<sup>160</sup> and in today's political climate, it is difficult to imagine the passage of a comprehensive federal environmental regulatory scheme relating to water scarcity in the near future.

### B. Corporate Disclosure of Water-Related Risks

The inclusion of material environmental risks in a company's financial statement is becoming an increasingly common practice;<sup>161</sup> however, corporations are largely not required to disclose information about projected economic risks posed by water scarcity or information about the amount of water used at a local or facility level.<sup>162</sup> Information disclosures are an important policy instrument and could drive a more adaptive

152. See discussion *infra* Part II.A.2.

153. The Water Strategy, *supra* note 68, at 2.

154. *Id.* (scoring water projects on a 1–7 scale in terms of their implementation and development status under nineteen goals).

155. *Id.* at 16.

156. See discussion *infra* Part II.A.2.

157. See U.S. ENVTL. PROT. AGENCY, EPA 832-F-00-011, FREQUENTLY ASKED QUESTIONS ABOUT U.S. EPA'S VOLUNTARY WATER-EFFICIENCY PROGRAM (2000), <https://nepis.epa.gov/Exe/tiff2png.cgi/200043VO.PNG?-r+75+-g+7+D%3A%5CZYFILES%5CINDEX%20DATA%5C00THRU05%5CTIFF%5C00000131%5C200043VO.TIF>; see also The Water Strategy, *supra* note 68, at 28.

158. See generally Vandenbergh, *supra* note 57, at 165–81.

159. *Id.* at 134.

160. *Id.*

161. Ioannou & Serafeim, *supra* note 115, at 2.

162. See SARNI, *supra* note 16, at 26–27; see also MORRISON ET AL., *supra* note 23, at 12, 31.

approach to the regulation of environmental issues.<sup>163</sup> The development of implementable, fact-based water resource policies require complete, accurate data and collaborations among various stakeholders.<sup>164</sup> While the SEC Interpretive Release<sup>165</sup> provides important guidelines and indicates a growing public interest in business risks posed by climate change, the provisions of the Interpretive Release rules do not carry the force and effect of law and are exempt from notice or comment procedures.<sup>166</sup>

Items 101, 103, and 303 under Regulation S-K provide a basic framework for the type of information that should be publicly disclosed, however the regulations do not call on companies to provide information about water scarcity risks specifically,<sup>167</sup> thereby failing to link water scarcity to potential financial risks and opportunities. Additionally, the disclosure requirements embedded in Regulation S-K have reportedly not undergone a significant comprehensive review since 1996.<sup>168</sup> While water-related business risks arguably constitute material risks because such risks pose a serious economic threat and therefore would be of major concern to the reasonable investor, the SEC has not prioritized the financial risks and opportunities of water-related risk as an individualized item for disclosure.<sup>169</sup> Companies are starting to provide information about the effects of climate change generally, however most companies only disclose basic data about water use in aggregated, corporate-wide numbers that do not reflect local-level impacts and performance.<sup>170</sup>

A 2010 report by the Coalition for Environmentally Responsible Economies (“CERES”) analyzed and ranked the “water disclosure practices of 100 publicly-traded companies across eight key [industry] sectors [that may be] exposed to water-related risks: beverage, chemicals, electric power, food, homebuilding, mining, oil and gas, and semiconductors.”<sup>171</sup> The report found that while many companies do report some level of risk, a vast majority of the disclosures consist of “vague, boilerplate” language that does not provide a complete picture of water scarcity risks.<sup>172</sup> Additionally, while 73% of companies report potential physical risks<sup>173</sup> from water scarcity, only six companies were found to report any water accounting data within their financial filings.<sup>174</sup> Also commonly missing from the disclosures were data at the local or facility level, data about the water performance throughout the supply chain, quantified water reduction targets, and details about water-related policies, standards, and man-

agement systems.<sup>175</sup> Additionally, companies largely failed to disclose information about the water use and discharges embedded in their extensive supply chains, leaving a great deal of water use unaccounted for.<sup>176</sup> Without more comprehensive information about water use throughout a company’s supply chain, a company cannot adequately address and disclose water-related risks.<sup>177</sup>

Given the language of the current SEC disclosure requirements, a major obstacle to meaningful disclosures is the burden to demonstrate the presence of a certain and substantial material risk to the company’s future security.<sup>178</sup> The vague definition of what constitutes materiality may allow for companies to downplay environmental risks or avoid reporting them all together.<sup>179</sup> Items 101 and 102 only require the disclosure of information about compliance with existing environmental regulations and potential financial impacts of environmental litigation, which do not necessarily address accounting for future water-related risks.<sup>180</sup> Item 303, on the other hand, calls for companies to provide information about risks, commitments or changes that may materially affect capital and future earnings.<sup>181</sup>

While the SEC Interpretive Release arguably reflects an interpretation that the disclosure requirements in the Exchange Act already include the significant risks posed by climate change and changing water supplies,<sup>182</sup> most companies fail to address water scarcity risks in a clear and meaningful way.<sup>183</sup> Additionally, following the Interpretive Release, the total number of registrant disclosures only modestly increased.<sup>184</sup> A 2011 report completed by the law firm, Davis Polk & Wardwell LLP, concluded that the SEC Interpretive Release “has not had as significant an impact on [registrants’] disclosures as some observers initially expected.”<sup>185</sup> By failing to specify in the language of the statute that annual reports should include environmental risks, companies are often able to avoid reporting on expected risks, which can result in a lack of transparency and the disclosure of imprecise information about the water-related regulatory and physical risks a company may face.<sup>186</sup> Corporate reports on environmental behavior are generally in reaction to or flow directly from environmental mandates but are not necessarily motivated by economic concern posed by risks to future productivity.<sup>187</sup> It will therefore be important for companies to become more cognizant of economic risks posed by water scarcity in order to spur increased attention and responsible behavior.

163. Fiorino, *supra* note 55, at 448.

164. MCKINSEY & CO., *supra* note 8, at 4.

165. See discussion *infra* Part III.B.2.

166. Martin, *supra* note 92, at 302; THOMAS LEE HAZEN, 1 TREATISE ON THE LAW OF SECURITIES REGULATION § 1.4, 61 (6th ed. 2009).

167. See Hansen, *supra* note 95, at 492.

168. Huber, *supra* note 96, at 3.

169. JIM COBURN & JACKIE COOK, COOL RESPONSE: THE SEC & CORPORATE CLIMATE CHANGE REPORTING, CERES 4 (Feb. 2014), <https://www.ceres.org/resources/reports/cool-response-the-sec-corporate-climate-change-reporting/>.

170. See BARTON, *supra* note 3, at 9–10; see also Ioannou & Serafeim, *supra* note 115, at 5–6.

171. Ioannou & Serafeim, *supra* note 115, at 3.

172. *Id.* at 9.

173. SARNI, *supra* note 16, at 26.

174. *Id.*

175. *Id.* at 26–27.

176. *Id.* at 27.

177. *Id.*

178. Hansen, *supra* note 95, at 490–91; see 17 C.F.R. § 230.408 (2012).

179. Hansen, *supra* note 95, at 534.

180. See discussion *infra* Part II.B.2.

181. See *id.*

182. Hansen, *supra* note 95, at 487, 491.

183. See BARTON, *supra* note 3, at 4.

184. Hansen, *supra* note 95, at 522–23 (finding that 24% of companies analyzed addressed the physical risks to their assets posed by climate change, and 51 out of 100 companies mention “climate change” in their 10-K filings).

185. See Davis Polk & Wardwell LLP, Environmental Disclosure in SEC Filings—2011 Update 1 (2011), <http://www.davispolk.com/publications/environmental-disclosure-sec-filings-2011-update/>.

186. Hansen, *supra* note 95, at 522.

187. *Id.* at 524.

## I. Corporate Disclosure Regulations Outside of the United States

The corporate disclosure laws in France, Australia, and Norway may provide an important starting point for lawmakers in the United States in terms of drafting and implementing mandatory reporting requirements. In both Australia and Norway, the respective governments have had a relatively hands-off approach to the enforcement of the mandatory reporting provisions, yet a substantial number of companies have complied with the regulations.<sup>188</sup> The presence of obligatory reporting on environmental impacts arguably made the link between environmental issues and corporate social responsibility more visible, especially in relation to water resource management.<sup>189</sup> Water reporting provides a base for companies to consider environmental issues in their corporate strategies by providing “consistent, readily available” information and an established standard for companies to strive towards.<sup>190</sup> Accounting for and reporting such information may also reveal the material present and future economic impacts of water scarcity, thus acting as a catalyst for companies to develop water management strategies.

Regulators implement and enforce regulations, but also play an important role in providing guidance to the entities subject to regulations.<sup>191</sup> A 2001 report of seventy-one Australian companies operating in natural resource production, utilities and infrastructure, or paper and packaging showed a significant increase in the number of companies disclosing their compliance with environmental regulations and more notably, noncompliance with environmental regulations.<sup>192</sup> Studies on regulatory compliance in Norway found that the best reporters provide information on what they think their shareholders would be most interested in knowing, including “the impacts their activities are having on the environment, how they manage environmental risk, their resource usage, their exposure to regulation, their breaches and how they rectify and prevent future breaches, their supply chain policy and the involvement of the board in environmental performance.”<sup>193</sup> For the companies that remain poor performers, the problem could likely be overcome through legislative reform and rewriting the relevant securities sections to provide advice on how to comply.<sup>194</sup> Companies report that if regulators were proactive in developing guidelines, standards, and best practices case studies, compliance would be a more attainable goal.<sup>195</sup>

188. BUBNA-LITIC, *supra* note 117, at 642–43.

189. *See, e.g., id.* at 655 (Statoil indicating that reporting makes the link more visible to them).

190. *See, e.g., id.* (NCC Construction saw reporting requirements as a good starting point).

191. Shurpti Shah et al., *The Regulator of Tomorrow*, DELOITTE U. PRESS 6, 9 (June 11, 2015), <https://dupress.deloitte.com/dup-us-en/industry/public-sector/us-regulatory-agencies-and-technology.html>.

192. Geoffrey R. Frost, *Mandatory Corporate Reporting in Australia: Contested Introduction Belies Effectiveness of Its Application*, AUSTRALIAN REV. PUB. AFF. (2002), <http://www.australianreview.net/digest/2002/11/frost.html>.

193. BUBNA-LITIC, *supra* note 117, at 651–52.

194. *Id.*

195. *Id.* at 652.

## C. Private Corporate Governance

Private corporate governance is emerging as a key mechanism for increasing environmentally responsible behavior in the business community. In recent years, companies have begun to perform “to a greater or lesser extent, ‘beyond compliance’ with existing regulatory requirements,” indicating that there are a wide variety of potential motivators for corporate behavior outside of traditional regulation.<sup>196</sup> Incorporating sustainability measures to address problems such as water scarcity into internal corporate structure does not impede business success but instead leads to increased profits by avoiding risks and providing new business opportunities.<sup>197</sup>

While corporate actions that address environmental concerns represent important developments, private governance is not without flaws.<sup>198</sup> The recent global financial crisis and questionable behavior by several large corporations left a great deal of room for distrust of companies’ ability to effectively self-regulate.<sup>199</sup> Voluntary standards are often by definition unregulated, leading to possible false statements, lacking quality controls, and incorrect or inadequate information provided to consumers.<sup>200</sup> Some problems that may emerge from a purely private regulatory scheme include: (1) the potential for a lack of consensus about standards or the meaning of particular regulations, (2) the potential for companies to provide inaccurate or unsubstantiated data, and (3) the ability for companies that do not wish to alter their behavior to avoid making changes all together.<sup>201</sup> Lacking government regulation may also allow for corporate “green-washing,” which refers to deceptive marketing and advertising tactics that promote the perception that an organization engages in environmentally conscious practices.<sup>202</sup>

Overall, however, private environmental governance has facilitated important developments in environmental regulation. Major companies can have significant effects on performance across their supply chains and can influence how suppliers and other producers operate. The Coca-Cola Company provides an important example as a company in a water-intensive industry that is taking a lead in improving water efficiency and mitigating water-related risks. Coca-Cola is one of the founding partners of the Water Footprinting

196. Robert A. Kagan et al., *Explaining Corporate Environmental Performance: How Does Regulation Matter?*, 37 L. & Soc’y Rev. 1, 52 (2003).

197. *See Warner, supra* note 34, at 335–37, 349 (arguing that the corporate organizational model should include a sustainability expert on the board of directors in order to account for sustainability and environmental concerns); Alan S. Miller & Stacy A. Swann, *Climate Change and the Financial Sector: A Time of Risk and Opportunity*, 29 GEO. INT’L ENVTL. L. REV. 69, 70–71 (2016) (arguing that the emerging awareness or climate-related risks and opportunities within the financial sector is creating “enormous business opportunities—both in the form of investments that reduce GHG emissions, and more importantly, through measures, tools, services and investments that enhance climate resilience”).

198. *See* ENVTL. LAW INST., *supra* note 132 (deceptive green certification labels); *see also Warner, supra* note 34, at 348.

199. Ioannou & Serafeim, *supra* note 115, at 6.

200. *Id.*

201. Nick Feinstein, *Learning From Past Mistakes: Future Regulation to Prevent Green washing*, 40 B.C. ENVTL. AFF. L. REV. 229, 254–55 (2013)

202. *Greenwashing: What’s This All About?*, GREENPEACE, <http://www.stopgreenwashing.org> (last visited Mar. 9, 2017).

Network,<sup>203</sup> and has worked in collaboration with the World Wildlife Fund (“WWF”) and the Nature Conservancy to assess its water use, understand the implications water scarcity may have on business operations, and develop practical response measures.<sup>204</sup> Additionally, by reducing or removing water use in the beverage manufacturing process, and investing in new technology and operating procedures, Coca-Cola is on track to improve water efficiency in manufacturing by 25% by 2020.<sup>205</sup> The pharmaceutical company AstraZeneca has also addressed its own water-use by implementing voluntary wastewater regulatory limits, developing water conservation plans for manufacturing sites operating in water stressed regions, and pledging to reduce its water use by 25% from 2010 levels.<sup>206</sup> In addition to active self-regulation, AstraZeneca requires its suppliers to meet specified sustainability criteria as well.<sup>207</sup>

Private corporate governance utilizes a company’s internal economic drivers such as reputation, supply-chain requirements, and consumer preferences, which may “push companies to go beyond minimum regulatory standards to reduce their environmental footprint in ways not required by law.”<sup>208</sup>

#### IV. Solution

In order to address the risks posed by water scarcity, this Note proposes a two-part solution founded in securities law and the facilitation of private corporate governance as opposed to traditional forms of environmental regulation. First, the SEC should undergo a comprehensive review of Regulation S-K and amend Item 303 to require companies to analyze and disclose specific information about the physical and financial risks posed by water scarcity. Second, policymakers should use the disclosed information to develop collaborative approaches that build upon the headway already made in areas of private corporate in order to address and mitigate water scarcity risk. Voluntary corporate reporting is already a common practice among forward thinking companies,<sup>209</sup> and the next logical step in SEC regulation should be to expressly require companies to disclose information about pressing environmental risks such as water scarcity.<sup>210</sup> Government policies that increase the availability of information regarding climate-related risks and opportunities can also have the effect of demonstrating how actions to address these risks can in fact be profitable, which could “ideally contribut[e] to a virtuous cycle of investments that support climate poli-

cies, and vice versa.”<sup>211</sup> Mandatory disclosures could have the effect of perpetuating and further strengthening the growing trend of private corporate governance and allow the corporate community to develop innovative and flexible means for mitigating risks.

The potential risks of climate change are no longer limited to the direct and indirect costs of compliance with traditional environmental legislation and regulations.<sup>212</sup> Voluntary corporate reporting is an important development; however, mandatory reporting is becoming increasingly critical.<sup>213</sup> Furthermore, corporations can act as leaders in developing and implementing sustainable water-use practices ahead of traditional federal regulations.<sup>214</sup> Regulation S-K, Item 303, should be amended to include a specific provision requiring companies to report on the environmental impacts of their activities, in which the risks posed by water scarcity are specifically addressed. In the best-case scenario, companies will be required to develop a risk assessment report, which will be submitted to the SEC and will detail areas of vulnerability. The report will also be made available to the public in order to inform consumers and potential investors of a company’s water use practices and potential business risks posed by climate change and water scarcity. As in the Australian model, the report should be filed separately from and regardless of the company’s reporting requirements to EPA or other environmental agencies.<sup>215</sup> The report should include information about water use at the facility level and account for water use across a company’s supply chain.<sup>216</sup>

Opponents may argue that a requirement to collect and disclose information pertaining to a corporation’s water use and water scarcity-related risk is an unnecessary burden on company operations, however several government and non-governmental organizations, as well as private actors, have already developed comprehensive methodologies and guidelines for accounting for and reporting water scarcity-related risk.<sup>217</sup> Existing methods can help companies meet disclosure requirements and also understand and prepare for water scarcity-related business risk. The Water Footprinting Network, which is utilized by the Coca-Cola Company,<sup>218</sup> and the CDP’s water disclosure program, which is supported by several leading financial institutions such as Schroders and APG Asset Management,<sup>219</sup> provide two possible frameworks companies may integrate into their management structure. Additionally, companies within a given sector that are already actively reporting and developing sustainability measures can act as models for other companies to follow. The information that must be disclosed should be specific to particular industries, with heightened pressure on companies

203. See discussion *infra* Part I.B.2.

204. *Water Stewardship & Replenish Report, Improving Our Water Efficiency*, COCA-COLA CO., <http://www.coca-colacompany.com/stories/setting-a-new-goal-for-water-efficiency> (last visited Oct. 7, 2016).

205. *Id.*

206. *Environmental Sustainability*, ASTRAZENECA (Nov. 15, 2017 5:55 PM), <https://www.astrazeneca.com/our-company/sustainability/environmental-sustainability.html>; see ENVTL. LAW INST., *supra* note 132.

207. *Working With Suppliers*, ASTRAZENECA 2 (May 2015), <https://www.astrazeneca.com/content/dam/az/our-company/Sustainability/ethical-business-practices/Working-with-suppliers--May-2015.pdf>.

208. NEXT GENERATION, *supra* note 132, at 125.

209. See discussion *infra* Part III.C.

210. Warner, *supra* note 34, at 333.

211. Miller & Swann, *supra* note 197, at 71.

212. Hansen, *supra* note 95, at 489.

213. Coburn & Cook, *supra* note 169, at 7.

214. *Water Stewardship & Replenish Report*, *supra* note 204.

215. See discussion *infra* Part III.B.3.

216. BARTON, *supra* note 3, at 1–3.

217. See, e.g., Gina Roos, *CDP Launches Water Disclosure Project*, ENVTL. LEADER (2009), <http://www.environmentalleader.com/2009/11/cdp-launches-water-disclosure-project/>.

218. See discussion *infra* Part I.C.

219. Roos, *supra* note 217.

engaged in industries with higher levels of water consumption; however, the means for collecting and reporting water scarcity-related information should remain flexible, thereby allowing a company to develop a strategy that supports their business model and capacities.

If a separate mandatory report is not an attainable goal, a second possible scenario could instead amend Item 303 to include a line item section that specifically mandates the disclosure of environmental impacts and climate change risks, including water scarcity risk, in the company's annual Form 10-K report. Companies should also be called upon to specify the efforts employed to eliminate or reduce water scarcity-related risks, as well as a projected timeline for doing so. Specifically labeling water scarcity as a material business risk for financial disclosure purposes could assist corporate actors and investors to better understand business costs and opportunities.

The SEC's ability to implement comprehensive changes to the disclosure requirements in Regulation S-K is dependent on the SEC obtaining sufficient resources through its annual budget request, support from Congress, and support from shareholders and potential investors.<sup>220</sup> The feasibility of amending SEC regulations and mandating corporate disclosures is also a question of obtaining sufficient political support and addressing the likely backlash from the business community. Additionally, amending disclosure requirements may not be successful in targeting risk directly by the failure of such amendment requirements to provide regulators with a "comprehensive understanding of systemic risk or sufficient tools to manage that risk more effectively."<sup>221</sup> Over-regulation of a company's disclosure requirements may also undermine the competitiveness of U.S. companies in foreign markets, or run the risk of chilling innovative activity and risk taking.<sup>222</sup>

## A. Addressing the Concerns

### I. Gaining Financial and Shareholder Support

Due to the difficulties associated with drafting and implementing a new comprehensive federal environmental regulation, addressing water scarcity through securities regulation and corporate regulation may provide a simpler and more cost-effective solution. The existence of established reporting and disclosure frameworks as well as the presence of clear industry leaders may assist noncompliant corporate entities to implement systems that best reflect a given structure or industry type. Additionally, due to the drastic difference between industries and individual companies in the United States, the imposition of mandatory disclosure requirements may provide a good starting point for companies to develop adaptive, flexible industry standards and internal codes of conduct before implementing more traditional forms of regulation.

220. See SEC DRAFT STRATEGIC PLAN, *supra* note 111, at 4.

221. *Id.*

222. *Id.*

With respect to acquiring support for implementing mandatory corporate disclosures, current disclosure regulations are arguably not reflective of widespread shareholder preferences.<sup>223</sup> Shareholders are becoming increasingly cognizant of the importance of climate-related risks, leading to dramatic increases in the number of shareholder proposals relating to climate change.<sup>224</sup> In fact, "over 100 institutional investors worldwide representing 7.6 trillion dollars in assets have formally supported the SEC's issuance of guidance on climate risk disclosure."<sup>225</sup> Companies are increasingly engaging with shareholders and advisory firms on environmental issues, indicating growing mainstream support and acceptance of the notion that accounting for environmental risks is in fact a prudent business decision.<sup>226</sup> Finally, according to the SEC's Draft Strategic Plan for Fiscal Years 2014-2018, the SEC intends to address recommendations for updating Regulation S-K disclosure requirements and focus on a targeted "review of operational and risk management disclosures."<sup>227</sup> With pressure from investors and various nonprofit groups, environmental and sustainability concerns are likely to be addressed in enacting disclosure reform.

While closely related to climate change in many respects, water scarcity represents a unique challenge that corporations should specifically address in financial disclosures. Mandating disclosures concerning water scarcity risk could effectively provide investors and the concerned public with information about the economic risks and opportunities facing companies across the United States.

## 2. Providing the Information and Tools Necessary to Implement Regulations

By requiring companies to research and disclose information about their water use at a more localized level, companies may be able to better assess the physical, reputational, and regulatory risks posed by water scarcity.<sup>228</sup> Recognizing risk is an important factor for motivating companies to change their behavior, develop water use reduction targets, address regional or geographical challenges, and develop plans for mitigating the business risks posed by water scarcity.<sup>229</sup> Because one of the key challenges to regulating environmental concerns is the inherent uncertainty as to the actual impact an environmental risk may have, requiring corporate disclosures relating to water use and water scarcity may help provide more accurate and complete information about water scarcity-related risks and create industry-wide standards.

223. Elise N. Rindfleisch, *Shareholder Proposals: A Catalyst for Climate Change-Related Disclosure, Analysis and Action?*, 5 BERKELEY BUS. L.J. 45, 48 (2008).

224. *Id.* at 48 (finding that shareholder proposals are "a mechanism that allows shareholders to compel the management of a corporation to submit a given issue to all the shareholders for their vote . . . [and] can demand that corporations address climate change in their businesses by taking steps to reduce their greenhouse gas emissions").

225. Coburn & Cook, *supra* note 169, at 7.

226. Huber, *supra* note 96, at 4.

227. *Id.* at 3.

228. MORRISON ET AL., *supra* note 23, at 3.

229. See discussion *infra* Part II.B.1.

The information that Regulation S-K expressly requires to be disclosed is presumptively “material,” indicating that if the information is expressly requested, companies will be required to collect and disclose it.<sup>230</sup> The required disclosure of water scarcity information in a separate report or as a line item in Item 303 would therefore require companies to examine their water withdrawals, depletion of water resources, the amount of water that is reused or recycled, and the total amount of water used throughout the production supply chain.<sup>231</sup> Mandatory disclosure requirements could successfully spur internal action on the part of public companies<sup>232</sup> or regulatory agencies<sup>233</sup> in order to ensure compliance with the SEC disclosure requirements. Additionally, by not dictating precisely how a company should reach a certain regulatory goal, a company will have greater flexibility in implementing a strategy that best fits the company’s industry, size, and existing management structure than might be achievable under a traditional top-down regulatory framework.<sup>234</sup>

That is not to say that companies should be left without guidance on how to satisfy the mandatory disclosure requirements. In addition to an amendment of the language of Item 303, the SEC should provide clear and complete guidance for companies to follow in order to implement the new regulations into their business strategies.<sup>235</sup> In its 2010 Interpretive Release, the SEC acknowledged that “[a]nalyzing the materiality of known trends, events, or uncertainties may be particularly challenging for registrants.”<sup>236</sup> Additionally, feedback from companies in Australia and Norway, where mandatory disclosure requirements already exist, indicates that companies feel they would benefit from financial institutions providing more detailed guidance on what the requirements entail and how to best reach the established benchmarks.<sup>237</sup>

Sophisticated systems for voluntary corporate reporting already exist and have become increasingly popular in recent years, largely due to support from the investment community.<sup>238</sup> Existing reporting systems may help to provide

a framework for the SEC to follow in terms of developing comprehensive guidelines regarding the information to disclose for various sectors and avoid repetition of information that is already included in current mandatory disclosures.<sup>239</sup> Several established organizations, including the Water Footprinting Network and the CDP and GRI Water Reporting Frameworks,<sup>240</sup> provide frameworks for measuring water use and addressing water scarcity, as well as detailed reporting schemes for corporations to follow in order to disclose water scarcity-related information.<sup>241</sup> Reporting programs are also geared to assist companies locate areas of risk and develop site-specific plans for addressing those risks.<sup>242</sup>

### 3. The Effect of Regulation on Competition in Foreign Markets

Policymakers in the United States have the added benefit of real world case studies in Europe and Australia, which provide examples of the impact and effectiveness of mandatory corporate disclosures with respect to environmental concerns including water scarcity risk.<sup>243</sup> Economies are becoming increasingly connected, with companies often operating through transnational supply chains.<sup>244</sup> Companies in Europe and Australia currently operate under more stringent environmental reporting standards, which may affect both their relations with companies in the United States and the sale of their products in foreign markets.<sup>245</sup> Certain foreign financial markets are in fact starting to demand information regarding a company’s environmental and social performance in order to better manage investment risks.<sup>246</sup> Increased globalization of the business community and securities markets may be a compelling reason for the SEC to seek to achieve greater global uniformity in terms of environmental disclosure requirements.<sup>247</sup> Additionally, the intention behind environmental disclosure requirements is not to place unnecessary economic burden on large companies. Instead, disclosures should be targeted to identify risks, to demonstrate ways in which a company can improve its operations, and to address consumer and shareholder demand.<sup>248</sup> In order to remain competitive and desirable in a global market, implementing mandatory environmental disclosure requirements for U.S. companies should in fact be considered a critical goal.<sup>249</sup>

230. Hansen, *supra* note 95, at 487, 507.

231. See generally *Craftmatic Sec. Litig. v. Kraftsow*, 890 F.2d 628, 641 n.17 (3d Cir. 1989).

232. See Warner, *supra* note 34, at 339–40 (citing Porcher L. III Taylor & Harris L. Kay, *A Green Board as a Climate-Change Imperative: Appointing a Climate-Change Expert to the Audit Committee*, 18 U. BALT. J. ENVTL. L. 215, 221–22, 224–25 (2011)) (recommending the creation of an independent “sustainability expert” on a company’s board of directors in order to “help enhance the board’s understanding of climate change risk, help shield directors from derivative suit liability under the business judgment rule . . . and act as a ‘devil’s advocate’ in helping diminish any board groupthink related to climate change”).

233. See Coburn & Cook, *supra* note 169, at 5 (recommending that SEC staff create a federal interagency group focused on climate risks and opportunities to businesses, and a taskforce within the SEC to review and comment on climate change disclosures).

234. Cf. Andreen, *supra* note 146, at 539–40 (discussing the benefits of transferring Clean Water Act regulatory authority to the states from the federal government to include “more cost-benefit analysis, improved risk analysis, agency flexibility in setting regulatory priorities, and use of market-oriented regulatory devices”).

235. See Coburn & Cook, *supra* note 169, at 6 (arguing that SEC’s 2010 Guidance on disclosing climate change issues was important to improve corporate reporting, and that such guidance is increasingly significant because the physical impact and regulatory risks of climate changes have increased).

236. Hansen, *supra* note 95, at 495.

237. BUBNA-LITIC, *supra* note 117, at 641.

238. Coburn & Cook, *supra* note 169, at 7.

239. *Id.*

240. See discussion *infra* Part II.C.2.

241. *Id.*

242. *Id.*

243. *Id.*; see also discussion *infra* Part III.B.3.

244. Huber, *supra* note 96, at 5.

245. See *supra* Part II.C.2.

246. EGAN ET AL., *supra* note 118, at 4 (reporting that the London Stock Exchange now requires all companies traded there to include a report on the firms’ management of significant business risks, which specifically includes environmental, social and reputational risks).

247. Huber, *supra* note 96, at 5.

248. *Id.*

249. *Id.*

## B. Facilitating the Growing Trend of Private Corporate Governance

The second part of this solution argues that policymakers should generally move away from traditional forms of environmental regulation, and instead focus on a more collaborative approach utilizing the drivers of private corporate governance in order to improve corporate environmental behavior. Private corporate governance is a multifaceted system of private standards and agreements that can influence corporate behaviors on issues and in ways that traditional forms of government regulation may be unwilling or unable to.<sup>250</sup> Utilizing alternative regulatory tools may also succeed in stimulating private environmental contracting in supply chain, credit, corporate asset, insurance, and other markets.<sup>251</sup> Collaborative environmental programs that involve several different actors may lead to environmental benefits that otherwise which would be difficult to achieve.<sup>252</sup> Furthermore, collaborative approaches “may address a problem for which regulation is unlikely, deal with a problem before it reaches the point where regulations come into effect, or create an atmosphere in which new statutory authority and new regulations can be enacted without intense opposition.”<sup>253</sup>

Implementing a system that mandates corporate disclosure of water scarcity risks specifically will arguably increase the amount of accurate and accessible information available to company leaders, shareholders, and consumers alike. The provision of public information about a company’s water use and proneness to financial and productive risks as a result of water scarcity may drive companies to adopt more sustainable practices in the long-run. Concerns about company reputa-

tion, consumer interest and demand, pressure from investors and shareholders, environmental requirements imposed by suppliers or other affiliates or pressure to adopt strategies that avoid operational risks posed by water scarcity should all be considered in the development of a corporate strategy.<sup>254</sup> Requiring companies to disclose more specific information about water use may also address concerns about “green-washing,” in which a company merely gives the appearance of environmental concern and compliance but does not deliver the actual benefits or engage in the advertised activities.<sup>255</sup> The implementation of a requirement to publicly disclose accurate company-wide information, the SEC and other institutions will be able to better monitor compliance and marketing tactics.

## V. Conclusion

Water scarcity is one of the most critical environmental risks facing industries today. Traditional environmental regulations do not adequately address the risks posed by water scarcity, nor are corporations required to fully disclose information about water use and water-related concerns to the public or their shareholders. Imposing mandatory corporate disclosures of water use and water-related risks will hopefully lead to increased access to complete and reliable information, will prompt companies to adopt better standards of conduct, and facilitate the developing trend of private corporate governance and the regulatory benefits this may have for addressing water scarcity. Ultimately, a collaborative approach that combines the initiatives developed through private environmental governance as well as traditional state and federal regulation in order to ensure accuracy and consistency may best address risks posed by water scarcity.<sup>256</sup>

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250. Michael Vandenberg, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 UCLS L. REV. 913, 916–17 (2007).

251. *Id.* at 968.

252. NEXT GENERATION, *supra* note 132, at 150.

253. *Id.*

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254. *Id.* at 126–27.

255. Vandenberg, *supra* note 57, at 137.

256. SARNI, *supra* note 16; *see also* MCKINSEY & Co., *supra* note 8, at iv–v, 4–5.