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Corporate-Led Environmental Governance: A Theoretical Model

Yuhao Ba[1]

Abstract

The growing reliance on non-state environmental governance (EG) coupled with the current U.S. political environment portends an increasing salience of governing efforts from non-state actors. Among non-state actors, corporations play a substantial role given their market and societal power, their corresponding social responsibilities, and their organizational and institutional adaptability in developing and performing EG solutions. This article proposes a corporate-led environmental governance (CLEG) model. An important distinction between previous iterations of corporate social responsibility (CSR) and corporate governance and the CLEG model proposed here is the active assertion of corporate environmental leadership as state leadership is subject to retrenchment in the United States.

Keywords

environmental governance, corporate leadership, non-state governance, state retrenchment

Introduction

A longstanding consensus in the literature acknowledges the prominence of environmental governance (EG) efforts from non-state actors, including

[1]North Carolina State University, Raleigh, USA

Corresponding Author:
Yuhao Ba, Doctoral Candidate, Department of Public Administration, School of Public and International Affairs, North Carolina State University, 212 Caldwell Hall, Raleigh, NC 27695, USA.
Email: yba@ncsu.edu

businesses, civil society and nonprofit members, and local and regional communities (Hale, 2016; Lemos & Agrawal, 2006; Mol, 2016). Among non-state actors, corporations have competitive advantages in many regards in delivering governance solutions (Bartley, 2007; Cashore, 2002; Fiorino & Bhan, 2016; Green, 2013; Hale, 2018). Economically, the fiscal and market leverage of corporations ensures the capital resources necessary for their EG involvement. Politically, the cyclical effect of influences translated from their economic power and the further economic advantages secured by such influences empower corporations' voices in shaping environmental policy agendas across various venues (Kraft & Kamieniecki, 2007; Salamon & Siegfried, 1977). Societally, the growing commitment of corporations to, and the expanding networks of participants around, environmentally responsible practices contribute to corporations' enhanced EG actions. Technologically, the rapid growth of business environmental R&D investments (Bumpus & Comello, 2017; Louw, 2018) helps to sustain corporations' green behavior with improved future products and processes. Along this line, corporations' organizational and institutional adaptability likewise adds to their advantages in developing alternative EG mechanisms (Cashore, 2002; Hsueh, 2013). More broadly, corporations' greater EG involvement will likely trigger an ambition loop in which corporations' bold EG actions will encourage policymakers to adopt more ambitious policies that will in turn catalyze further enhanced corporate EG involvement ("The Ambition Loop," 2018).

The rising role of corporations as an important EG component has likewise attracted scholarly attention, ranging from governance with government—prominently promoting multilevel, polycentric, and collaborative governance arrangements (Bulkeley & Betsill, 2005; Newig & Fritsch, 2009; Ostrom, 2010)—to governance without government, chiefly relying on market mechanisms to deliver regulatory practices and outcomes (Cashore, 2002; Falkner, 2003). The attention also extends to topics including their emergence (Green, 2013; Pattberg, 2005), legitimacy (Cashore, 2002; Schouten & Glasbergen, 2011), and operation (Fiorino & Bhan, 2016; Hsueh, 2013) through lenses of political science, public administration, and economics. Efforts from other disciplines include environmental law, business management, sociology, and environmental geography, focusing on topics such as the parallels between public and private standard-setting and enforcement (Light & Orts, 2015), the relationship between corporate characteristics and environmental performance (Walls et al., 2012), the political construction of market-driven institutions (Bartley, 2007), and the reconceptualization of scale and spatiality through alternative governance practices (Reed & Bruyneel, 2010).

Despite the burgeoning growth in research on corporate EG involvement, the coverage across levels of analysis and positions of corporations remains uneven and incomplete. For instance, most scholarly efforts tend to focus on the transnational level, leaving EG arrangements at the national and subnational levels underexplored. This is due to the cross-border nature of many EG challenges (Andonova et al., 2009) as well as the inadequacy of governance infrastructures at the international level for addressing the social and environmental impacts of the rapid economic globalization (Mayer & Gereffi, 2010). For studies that do position at a national or subnational level, their focus tends to be on the roles and power of civil society or hybrid arrangements (see Corson, 2010; Perkins, 2009) and/or particular aspects of corporate EG involvement (see Potoski & Prakash, 2004), necessitating a synthetic theorization of EG efforts from corporations at such levels. In a similar vein, the extant literature in general assumes a complementary role of corporations, while neglecting their potential to lead as a sectoral force in performing EG functions (see Vogel, 2010). This can be attributed to the default primary role of governmental solutions owing to the long-standing dominance of state forces with sovereign policy-making authority in EG systems (Light & Orts, 2015). Yet the power dynamics resulting from and likewise reinforced by the ongoingly sidelined state EG leadership are likely to suggest a new configuration of corporate EG involvement; that is, corporate leadership in EG systems at national and subnational levels might be relevant, and to some degree more promising, to address EG challenges given the changing political landscape.

The emerging salience of corporate EG involvement has been synchronized with the increasingly constrained state leadership in the environmental sphere over the last few decades. That is, the proliferation of many non-state arrangements and the retrenchment of state forces jointly characterize the practice as well as the theorization of the development of EG arrangements. Here, state retrenchment in the environmental sphere can be defined broadly as the processes and outcomes of the shifting role and capacity of governmental forces in pursuing and coordinating collective action given increasingly complex, diverse, and dynamic environmental challenges. It entails a reconfiguration from conventional hierarchical bureaucratic structures to polycentric ecosystems of governance, a reconstruction of interactions between state and non-state actors toward a more participatory and collaborative direction, and a redistribution from command and compliance mechanisms to more adaptive forms of regulation and implementation (Bellamy & Palumbo, 2010; Hysing, 2009). In view of this, state retrenchment can be seen as both the grounds for, and the consequences of, the rapid growth of many non-state EG arrangements, and corporate EG leadership can likewise be understood as an active response to governance inadequacy resulting from the retrenching state.

This looming rise of corporate leadership in EG systems is in particular suggested by the current U.S. political environment. The 2016 U.S. presidential election itself marked a new era of state retrenchment in the environmental sphere that has been mounting due to the widening partisan polarization over the last decades (Dunlap et al., 2016). Examples include the official withdrawal of the United States from the Paris climate accord (Dennis, 2019) as well as the rollback of 59 EG solutions previously implemented by governmental agencies (Popovich et al., 2019). However, corporations that have been traditionally posited as the opposite against EG actions are in fact advocating more active and timelier EG solutions (Lyon & Maxwell, 2008). For instance, the Task Force on Climate-Related Financial Disclosures (TFCD) as a business-led initiative is urging companies to be more transparent on climate-related financial risks and opportunities, to facilitate the transition to a more stable and sustainable economy (TCFD, 2019). More broadly, businesses in various industries are actively collaborating with other non-state actors through initiatives such as We are Still in and America's Pledge, to fulfill the U.S.'s commitment to the Paris Agreement in an absence of state leadership. Such shifting attitudes of state and corporations are likely to be translated into a reconfiguration of their power and roles in performing EG functions, giving rise to corporate-led environmental governance (CLEG) arrangements. In light of this, given the ongoing state retrenchment (Mol, 2016), a careful conceptualization of corporate leadership in EG systems is in need to advance our understanding of alternative EG models and to inform practitioners of possible new solutions for achieving desirable environmental outcomes.

The current analysis adds to the broader conversation around non-state alternative EG systems by proposing a theoretical model of CLEG system targeting on domestic EG deficits. It is therefore contextualized in the United States considering its current political environment, though implications could be drawn for other countries and regions facing similar situations. In developing the model, the analysis takes a synthetic approach commonly adopted by institutional scholars, reviewing and integrating scholarly work on alternative EG systems in general and corporate EG involvement in particular from relevant fields (e.g., political science, public administration, environmental law, and management; see Ansell & Gash, 2007; Pahl-Wostl, 2009). The juxtaposition of corporate, state, and civil society actors in a unified theoretical model contributes to supplementing the uneven and incomplete coverage of corporate EG involvement in the broad EG scholarship, and accordingly benefits both practitioners and scholars in disentangling the many environmental challenges further complicated by the growing interplay among these actors. The proposed corporate EG leadership likewise adds to recent calls for the possibility and nuances of non-state leadership in governance regimes (Howlett & Ramesh, 2014).

To this end, the first section of this analysis provides a brief review of scholarly efforts around the concept of alternative EG systems as well as around the ascending corporate involvement in the United States and its interaction with its political environment. The CLEG model is deliberated next, regarding its behavioral and institutional rationales, institutional configuration, and functioning mechanisms. This is followed by a section on the positions and actions of state forces and civil society members in a CLEG system. The analysis concludes with a discussion of the implications of the CLEG model as well as suggestions for future analysis.

Alternative EG and Corporate Involvement

Echoing the broad call within social sciences, governance has proliferated as one of the paradigmatic themes in the study of environmental policy and politics (Bulkeley, 2005; Corson, 2010). In general, the term can be defined as the system of "regulatory processes, mechanisms and organizations through which actors influence environmental actions and outcomes" to institutionally adapt to the ongoing and emerging environmental challenges (Lemos & Agrawal, 2006, p. 298). The encompassing array of pertinent actors implied by this definition accordingly suggests a continuum of models of governing, from state authority–based hierarchal systems at one end to private, market-driven arrangements at the other, with a variety of hybrids in between (e.g., collective standard-setting, certifications, and supply chain agreements; Bulkeley, 2005; Fiorino, 2010; Tang & Mazmanian, 2010). The wide variety of EG models, and indeed the underlying institutional diversity, can be attributed to the complexity and multiformity of structured and repetitive human interactions interweaving the fabric of our society (Ostrom, 2009).

Such interactions, particularly the ones between non-state and state actors or within non-state actors for purposes of regulating environmental behavior and practices, contribute to the emergence of alternative EG systems. This has expanded the spectrum of EG solutions, conventionally dominated by state forces, to encompass arrangements such as public–private partnerships, community benefit agreements, and fishing quota and catch share terms. In general, these structuring arrangements mirror the "public" governing solutions offered by state actors (e.g., dealing with environmental externalities; see Falkner, 2003; Vandenbergh, 2013). In this case, alternative EG systems can be defined broadly as a series of market-oriented and/or voluntary-based regulatory processes, mechanisms, and organizations through which non-state actors with rule-making authority intervene in, and make decisions on, environment-related practices and outcomes (Cashore, 2002; Lemos & Agrawal, 2006). The realization of environmental objectives and responsibilities is in addition to the goals these actors may have in the corporations, communities, or civil society organizations with which they are affiliated (Cashore, 2002).

Corporate interests have held a uniquely important position in the U.S. EG systems since the beginning of the modern environmental movement, due to their sensitivity to regulatory practices (e.g., provision of tax laws and mandatory information disclosure). In conventional state-centric systems, corporate interests exert influence over EG processes by lobbying during both agenda-setting and decision-making stages in various arenas, and by mobilizing the public during policy debates through media campaigns (Kraft & Kamieniecki, 2007). Accordingly, they have in general been posited as the behind-the-scenes opposing forces confronting environmental progress by prioritizing economic efficiency over environmental wellness (Friedman, 2007), though their efforts have yielded mixed results (Kraft & Kamieniecki, 2007).

In tandem with corporations' growing prominence and dominance in society, the call for corporate responsibility commensurate with corporate social power has echoed since the 1950s (see Bowen, 1953; Davis, 1960), and accordingly the concept of corporate social responsibility (CSR) has been applied to the business sector (Carroll, 1999). Yet not until the 1970s was the environmental dimension incorporated into the definition of CSR (Dahlsrud, 2008), marking a new era of corporate EG involvement as companies began to take actions on their environmental footprint. Since then, CSR, as a concept and a practice, has proliferated to help to internalize business's environmental externalities (Lyon & Maxwell, 2008). Corporate interests therefore evolved into a more visible frontline role in EG systems through voluntary self-regulatory initiatives to address environmental issues more actively, and such initiatives have expanded by incorporating their civil society counterparts, enhancing the impact of both sectors as important components of EG systems at various levels (Lyon, 2012). Since then, corporations have invested intensively to green their businesses and productions. They likewise work more closely with state forces and other societal members to sustain their active EG involvement through various regulatory programs and arrangements (Kraft & Kamieniecki, 2007).

Corporate EG involvement, through ventures such as Responsible Care and Sustainable Slopes, is doubtless an important component of the U.S. EG system at any time, but has become arguably more so in the current political environment; that is, the retrenchment of state leadership in the environmental sphere, and the resulting inadequacy of state-led EG solutions, suggests a new dimension of corporate EG involvement: to perform leadership. The retrenchment stems not only from increasingly complex, diverse, and dynamic environmental issues, but also from the institutional and ideological preferences deeply coded in American politics (Vormedal, 2011). A CLEG system can therefore be understood as an EG system led by corporate entities to better deal with these challenges. Mirroring EG systems led by other forces (Knill & Lehmkuhl, 2002), practices and outcomes associated with noncorporate actors (state and non-state) in a CLEG system are contingent upon actions of corporate entities. Specifically, a CLEG system features regulatory arrangements based on market mechanisms and voluntary arrangements attuned to specific environmental issues at various scales. An important distinction between previous iterations of CSR and other types of active corporate EG involvement, and the model proposed here, is the active assertion of corporate environmental leadership given that state forces are subject to retrenchment in the United States. The proposed corporate leadership, however, by no means seeks to eclipse the importance of state actors given their authority over commodities and property rights, provision of institutional infrastructures, and influence on the macroeconomic landscape, which both individually and collectively shape the way our society functions (Vatn, 2018). It rather theorizes the governance niches for corporate leadership in the U.S. EG processes given the inadequacy of state actions, and correspondingly aims at the frontline, and indeed the operation, of EG arrangements to foster more adaptive and timelier solutions.

Toward a Model of CLEG

Building upon the literature, a CLEG model can be defined broadly as a constellation of market-oriented and/or voluntary-based regulatory processes and mechanisms through which corporate entities with rule-making legitimacy and capacity intervene in, and make decisions on, environment-related practices and outcomes for the realization of a society's environmental objectives with the cooperation of state and other non-state participants. This definition makes it clear that corporate leadership is advocated here to address the many environmental challenges resulting from and/or reinforced by ongoing state retrenchment. It differs from previous studies on non-state EG (e.g., Cashore, 2002; Vandenbergh, 2013) and other hybrid collaborative arrangements (see Lemos & Agrawal, 2006) by arguing for a cross-sectoral leadership role for corporate entities in EG processes, and likewise offers both theoretical and practical implications for the design and application of

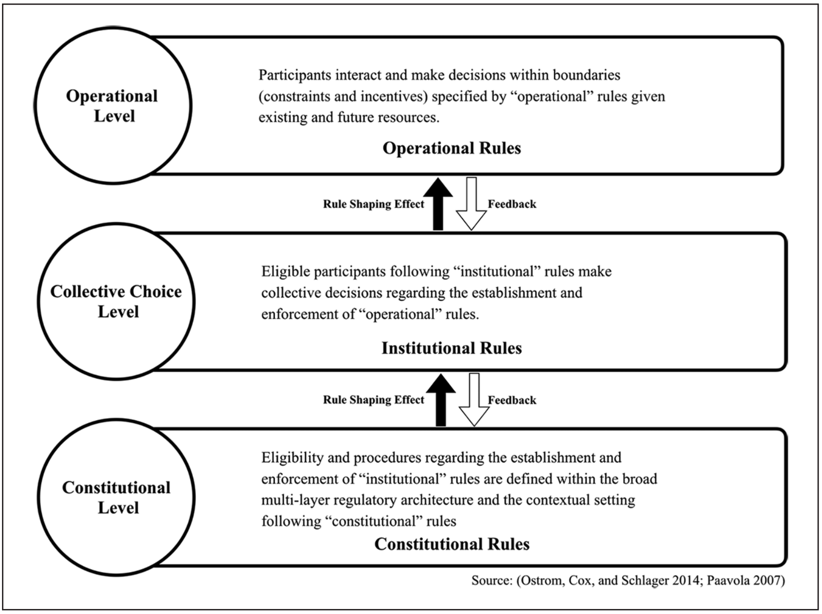

Figure 1. Three levels of rules in a CLEG system.
Note. CLEG = corporate-led environmental governance.

new EG solutions. Based on the definition, this section is detailed to address two fundamental questions regarding depicting an institutional model of corporate EG leadership: why to lead and how to lead. The first deals with the behavioral and institutional rationale of corporate EG leadership, while the second demonstrates the institutional configuration and functioning mechanisms of a CLEG model.

Why to Lead: Behavioral and Institutional Rationale

Behavioral motivation. Corporations behave strategically to survive in business ecosystems. A careful examination of their motivation in active EG involvement is therefore a necessary first step in theorizing a CLEG model. The profit-seeking nature of corporate interests has rendered their longstanding reputation as environmental opportunists cashing out natural resources and societal benefits. This view has likewise translated to criticisms of their EG involvement and the corresponding scholarly work (see Friedman, 2007). Accordingly, corporate environmental practices are described as marginal and

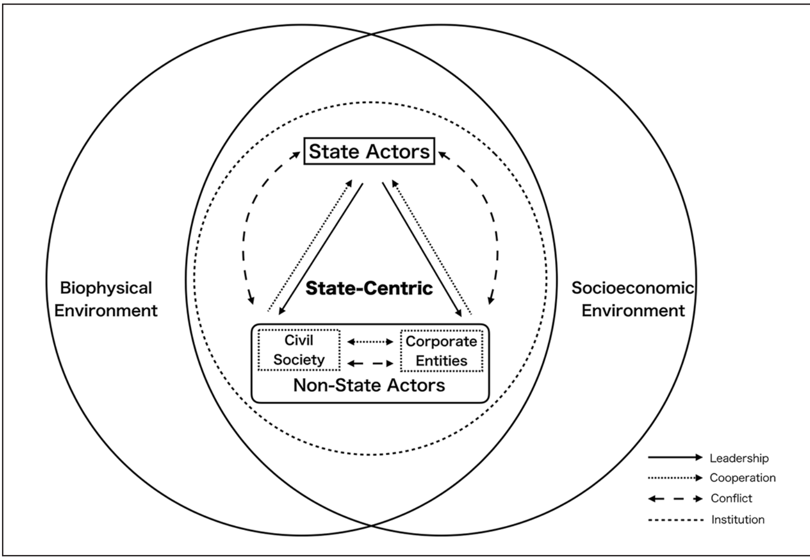

Figure 2. A state-led environmental governance system.

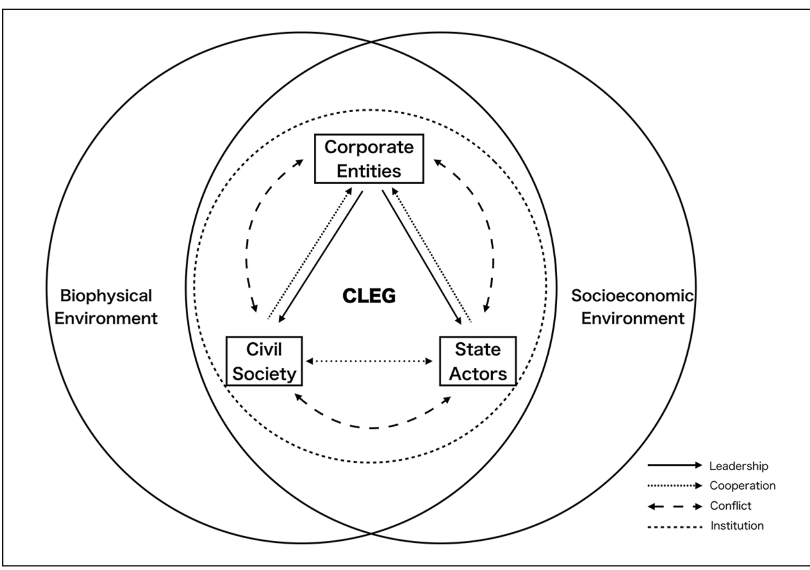

Figure 3. A conceptual visualization of a CLEG model.
Note. CLEG = corporate-led environmental governance.

symbolic (Kraft & Kamieniecki, 2007), or even “greenwash” (Lyon & Maxwell, 2011), driven by external pressures including regulatory stringency, a growingly socially demanding population (e.g., green consumption, Arora & Gangopadhyay, 1995; green investors; and labor markets, Lyon & Maxwell, 2008), and competition from civil society. This is understandable given the common-pool resource nature of many environmental issues (Agrawal, 2001) and the regulatory deficits in the environmental sphere owing to the aforementioned institutional inadequacy under state-centric EG regimes.

The rapid proliferation of voluntary corporate environmental initiatives, however, indicates that business interests, under certain circumstances, can pursue beyond-compliance environmental actions and likewise provide environmental public goods. According to Potoski and Prakash (2005), these voluntary initiatives function as club goods by providing nonrival yet potentially excludable reputational benefits to businesses. Firms’ adherence to these initiatives, and indeed their efforts to sustain the club’s reputation, further contribute to the more general public good of an improved environment. The improved reputation might also help to reduce competition with rivals due to the price premium of environmentally desirable products (Arora & Gangopadhyay, 1995). It can likewise signal firms’ environmental commitment to stakeholders and help to create a culture of positive EG involvement (e.g., the FSB Task Force on Climate-Related Financial Disclosures [TCFD] and the Carbon Disclosure Project [CDP]; Lyon & Maxwell, 2011; Potoski & Prakash, 2004). As strategic actors in a competitive yet less efficient political environment, corporations’ active EG involvement might also root in their willingness to shape regulatory processes by signaling their environmental efforts and the potential redundancy of extra layers of governmental regulation (Lyon & Maxwell, 2008), though such behavior is also subject to corporations’ economic contexts (Reinhardt, 1999) and internal dynamics (Prakash, 2001). This is also favored by regulators given their perceived costs associated with regulation and enforcement, particularly the ones confronting limited regulatory capacity (Blackman et al., 2006). The current U.S. political environment foreshadows decreasing EG efforts from governmental actors, therefore, further propelling corporations to the fore of performing EG functions. In addition, despite sparse coverage in the literature, altruistic corporate EG involvement does account for some of corporations’ environmental practices (Lyon & Maxwell, 2008), yet such motivations are influenced by strategic rationales (Fry et al., 1982) and contextual factors as well (Huang & Watson, 2015).

Legitimacy of governance. Another and perhaps more important precondition of corporate EG leadership is its governance legitimacy—that is, the source of their rule-making authority (Cashore, 2002). In this case, legitimacy measures the extent to which a particular audience accepts and consents to an institutional arrangement for their own evaluative purposes (Bernstein & Cashore, 2007; Cashore, 2002; Light & Orts, 2015). Legitimization can be challenging for both state and non-state EG involvement, but particularly for non-state arrangements (Biermann & Gupta, 2011). This can be attributed to the noncoercive nature of many non-state EG initiatives (e.g., lack of enforceable sanctions) and/or the potential goal conflicts with their business objectives (Schouten & Glasbergen, 2011). This legitimacy challenge has likewise raised questions about the impact of non-state EG arrangements. Yet the lack of a nation-based imprimatur might in fact enable non-state EG arrangements to take timelier and more active responses without confronting sovereignty concerns and jurisdictional constraints (Vandenbergh, 2013). Particularly in the current U.S. political environment, where state EG actions at all levels are lagged by partisan gridlock, non-state EG arrangements might be able to generate environmentally desirable outcomes in a more efficient manner.

Legitimization evolves differently in state and non-state EG systems. State governance regimes claim legitimacy on the basis of the consent of the governed. Corporate-led institutions, however, have to ground their rule-making authority in market transactions along the supply chain (Cashore, 2002). Specifically, CLEG arrangements may gain legitimacy through a three-phase process: initiation (Phase I), developing widespread support (Phase II), and political legitimacy (Phase III; Bernstein & Cashore, 2007). Phase I entails the convergence of strategic calculations within a small community, indicating early support for corporate EG initiatives. In Phase II, broad acceptance of corporate EG involvement fosters the generation of shared norms and conflict resolution mechanisms, which together help to sustain such involvement. Phase III implies the maturity of corporate EG involvement, signaling the legitimacy of such arrangements as arenas for pursuing environmentally beneficial objectives. The evolving process, though ostensibly uncomplicated, requires a series of internal and external efforts and adjustments, and is subject to a wide array of contextual and historical factors (Bernstein & Cashore, 2007). In addition, the inherently legitimate public institutions upon which corporations are formed and operate (e.g., law and administrative orders) have granted an extra layer of legitimacy to the institutional arrangements led by corporations in their pursuit of environmentally responsible practices and outcomes, similar to the legitimacy of their pursuit of economic profits (Light & Orts, 2015).

How to Lead: Institutional Configuration and Functioning Mechanisms

With motivation and legitimacy now laid out as the two preconditions enabling corporate EG leadership, this section details the institutional attributes and the functioning mechanisms that characterize a CLEG model. In doing so, three key dimensions institutionally defining an EG model are distilled from a conceptual framework proposed by Driessen et al. (2012): (a) model of representation, (b) rules of exchange and interaction, and (c) mechanisms of social interaction. While institutional complexity defines modern governance (Lubell, 2013), an advantage of this three-pronged approach is that it clarifies the institutional properties that differentiate various EG models with "detailed, replicable and comparable" features (Driessen et al., 2012, p. 143) yet maintains the analytical inclusiveness necessary for contextual variation.

Model of representation. Representation, as a type of institutional assistance, describes the practice and outcome of making the represented "present" in decision-making processes (Dovi, 2018). In this case, the variation of models of representation is rooted in the power matrices of stakeholders in decision-making arenas. In the environmental sphere, the shifting from government to governance entails the diversification of models of representation, from conventional pluralist models featuring election and lobbying activities to partnership arrangements characterized by participatory stakeholder collaboration (Driessen et al., 2012). As such, the ongoing deflation of state leadership in EG systems can alternatively be understood as an outcome of the relative effect of the continued proliferation of non-state EG arrangements, as well as of increasingly diversified environmental issues, with the current U.S. political environment further aggravating such imbalance. Accordingly, in a CLEG system, differing from ad hoc collaboratives, decision-making processes are grounded in and shaped by institutionalized partnership arrangements led by corporations (Falkner, 2003). The nested matrices of such issue-specific and scale-sensitive arrangements collectively feature the distribution of corporate leadership in EG systems.

Specifically, in CLEG systems, institutionalized partnership arrangements are a function of corporate-led participatory decision-making comprised of diverse semiautonomous decision-making agents. Distinct from conventional state-dominant solutions, corporate-led partnership arrangements rely on supply-chain coordination and the incorporation of transaction cost considerations that are situated in an increasingly nested setting (Paavola, 2007). The interdependence along supply chains through the production, processing, and consumption of goods and services, and the internal and external monitoring mechanisms these chains entail, facilitate governance effectiveness targeting on issue- and scale-specific domains (Cashore, 2002). The fabric interlaced by nested chains further contributes to the breadth and depth of such arrangements. The integration of transaction cost considerations goes beyond the cost and benefit computation in designing specific EG mechanisms by addressing the uncertainty resulting from the limited physical and/or cognitive capacity of many conventional solutions (Paavola & Adger, 2005). In this case, the participatory and interdependent nature of such arrangements ensures systematical openness for broader collaboration and oversight. The focus on corporate leadership is indicative of the business sector's active involvement and growing capacity in EG systems.

Rules of exchange and interaction. Institutions are by definition the formal and informal rules, norms, and structures collectively adopted by a group of individuals and organizations to structure their interactions (North, 1991; Ostrom, 2009). Institutional arrangements are therefore grounded in and bounded by sets of rules and mechanisms for compliance, resulting in various patterns of exchange and interactions among individual actors and between actors and their environment. Structured interactions and exchange further contribute to the achievement of collective actions and common goals. In the environmental sphere, there has been a rapid proliferation of non-state rules in the business domain along different supply chains since the 1990s (e.g., sustainable forestry and private financing platforms for energy efficiency renovation), with forms ranging from voluntary standards and codes of conduct within individual firms, to collective standards among clusters of firms, and to third-party arrangements for certifying compliance (Bartley, 2011). In a CLEG system, such rules function as channels allocating the aforementioned corporate-led decision-making authority and capacity to various environmental issues at different scales to perform EG functions.

CLEG arrangements are enmeshed in multiple layers of rules, particularly at subnational levels. In this case, rather than establishing EG functions in a rule-free governance void, corporate-led arrangements are stepping in issues that are already layered by complex political, legal, and regulatory structures (e.g., established laws and administrative regulations) (Bartley, 2011). Accordingly, theorizing rules in CLEG systems requires a detailed articulation of the regulatory architecture, and indeed the levels of analysis, within which corporate-led arrangements function. In general, governance arrangements possess three functional tiers and likewise are bounded by three levels of corresponding rules (Figure 1; Ostrom et al., 2014; Paavola, 2007). At the "operational" level, participants in a CLEG system interact and make decisions in a relatively predictable pattern by acting within boundaries (constraints and incentives) specified by "operational" rules given existing and future resources (e.g., production and provision of goods and services follow a set of predefined rules regarding recycling standards and energy efficiency levels). Failing to comply with "operational" rules might lead to marketing incompetence and other business risks. At the "collective choice" level, eligible participants following "institutional" rules make collective decisions regarding the establishment and enforcement of "operational" rules (e.g., voting members in industrial associations specify recycling standards and energy efficiency levels in production). Finally, at the "constitutional" level, eligibility and procedures regarding the establishment and enforcement of "institutional" rules are defined within the broad multi-layer regulatory architecture and the contextual setting following "constitutional" rules (e.g., voting members in industrial associations should be legally authorized business entities). In addition to the three levels of rules, biophysical environment and a broad socioeconomic context (e.g., cultural and historical evolution) contribute to the formation and function of the rules in CLEG systems as well (Ostrom et al., 2014).

Mechanisms of social interaction. The multilayered nature of EG arrangements entails the embeddedness of actors and governing rules in a constant state of complex intersectionality and dynamic movement. In characterizing social interactions in nested governance systems, two contrasting regimes coexist: "top down" and "bottom up" (Easterly, 2008). The top-down perspective is rooted in state-centric systems relying on hierarchical structures and authority-based central decision-making units to facilitate command and control mechanisms. Accordingly, predefined regulatory solutions developed by policy experts and decided by authorities are key to successful governance outcomes. The perceived inadequacy of top-down solutions since the late 1970s, paired with the acknowledgment of interdependence in governance systems, fostered the growth of bottom-up approaches, where participants at the "operational" level customize strategies with experiments and collaborations for the pursuit of their agendas (Sabatier, 1986). In non-state EG arrangements, the bottom-up lens is particularly serviceable in digesting reciprocal actions tying different participants. In this vein, rather than relying on coercive devices, members in CLEG systems interact with one another in a contextually tailored and collaborative manner regarding governing a particular environmental issue through market-oriented mechanisms. The configuration of interactions explicitly portrays the adaptability and flexibility of a CLEG system

CLEG arrangements rely on decentralized mechanisms to facilitate social interactions. Specifically, social learning as well as deliberation and negotiation constitute the approaches to connecting participants in a CLEG system

(Driessen et al., 2012). In practice, EG arrangements are constantly confronted with complex situations characterized by "uncertain and unpredictable systems, voids of knowledge on the outcomes of EG solutions, and societal conflicts regarding the suitability of EG solutions" (Newig et al., 2010, p. 1). In this case, social learning has become vital in EG systems, particularly during periods of socioeconomic changes. In general, social learning can be defined as an exploratory and evolving process contributing to an improved understanding of, and by extension an expanded capacity to deal with, existing and new governance challenges (Pahl-Wostl, 2009). Social learning entails a fresh or reaffirmed construction of an EG solution (e.g., scope and objectives) from the decision-making units in a given EG system. In a CLEG system, social learning can be found at all three aforementioned functional levels (e.g., altered belief of institutional members on toxic release levels in light of governance experience). Deliberation and negotiation represent another mechanism of social interaction in EG systems, particularly when participants are hindered from achieving desirable outcomes. Specifically, deliberation and negotiation can serve as processes and outcomes when participants view and treat each other as equals in collective decision-making reasoning regarding environmental issues and interventions (Fung, 2006). Due to the uncertainty associated with decision-making processes, participants' trust in the integrity of the procedure of deliberation and negotiation is key to enabling the functionality and the positive outcomes of this mechanism (Ansell & Gash, 2007). In CLEG systems, deliberation and negotiation can be identified at the "collective choice" and "constitutional" levels, where participants embark on defining constraints and incentives structuring behavior at the "operational" level as well as examining the contextual appropriateness of "institutional" rules. The participatory nature of CLEG arrangements fosters the occurrence of deliberation and negotiation. In CLEG systems, both social learning and deliberation and negotiation assist conflict resolution at multiple levels and therefore enhance the adaptability of this particular EG arrangement.

State and Civil Society in a CLEG System

While the proposed CLEG model posits a leadership role of corporate involvement in EG, state and civil society members will remain essential units of analysis. For instance, state forces, though yielding insufficient EG performance to some degree, still hold authority over important EG domains including land-use planning, climate monitoring, and waste management (Coenen & Menkveld, 2003). In addition, civil society members represented by nonprofit organizations are gaining growing salience in EG systems by connecting volunteerism with active forms of citizenship (Perkins, 2009). In light of this, a holistic understanding of CLEG arrangements necessitates a detailed theorization of positionality and functionality of state forces and civil society members in a CLEG system.

State Forces in a CLEG System

State forces are integral to any EG systems (Lemos & Agrawal, 2006). In fact, excluding state involvement from EG systems, be it at international or domestic levels, would miss its practical significance and by extension policy implications (Falkner, 2003). In this vein, the diverse forms of EG arrangements can be conceived as a function of varying political-economic parameters that institutions embody as well as the concomitant practices and outcomes catalyzed and/or reinforced by these parameters, while state forces remain a prominent variable in these formulations (Lemos & Agrawal, 2006). This prominence can be attributed to the sovereign rule-making and enforcement authority, the bureaucratic capacity, and the collection and allocation power of public resources held by the state. It can also be explained by the perceived and/or framed publicness of many environmental issues (e.g., fresh water shortages and destruction of the ocean's fisheries) that seemingly fall in the purview of governmental functions (Light & Orts, 2015). In addition, government's underlying yet ubiquitous power over key political, social, and cultural dynamics further contributes to its significance in various institutional arrangements (Bachrach & Baratz, 1962). In light of this, non-state actors have long been framed as lobbyists exerting influence over state-centric processes of decision-making (Figure 2; Falkner, 2003).

In recent decades, however, the prominence of state forces in EG systems has been complicated by the ongoing constraint of governmental finances (Hsueh, 2013) as well as increasing scrutiny by international players (Bernstein & Cashore, 2000). This has resulted in a growing reliance on shared policy-making authority and market-driven policy instruments in delivering EG solutions. The neoliberal policy reforms associated with globalization have further facilitated a shift of governance to non-state actors through decentralization and privatization (Lemos & Agrawal, 2006). The changing distribution of EG authority, however, does not necessarily indicate the irrelevance of state forces. In fact, transferring EG responsibilities is considered beneficial for the state where governmental regulation is not in demand and/or is cost-ineffective (Blackman et al., 2006). In this case, state forces are willing to shirk the burden of coordinating participants and enforcing compliance by enabling and facilitating self-regulatory arrangements (Falkner, 2003). This echoes the idea of "governing at a distance" (Rose &

Miller, 1992, p. 173) where state forces govern by creating a constellation of locales and agents to perform a structured autonomy while non-state actors take the lead in establishing and enforcing specific governance solutions.

In general, state forces participate in a more limited manner in governance systems with a trilateral structure that involves both businesses and civil society members than in unilateral or bilateral systems where interactions are restricted within state forces or between state forces and one other sectoral participant (Howlett & Ramesh, 2014). In a CLEG system, therefore, instead of being active at the "operational" level, governmental forces contribute at the "constitutional" level and to some degree the "collective choice" level. This includes providing and maintaining the regulatory infrastructure (e.g., laws and administrative orders) necessary for the operation of CLEG systems (Light & Orts, 2015) as well as participating in individual arrangements with resources and services (e.g., EG solution endorsement, risk assessment, and monitoring and transparency promotion; Fiorino, 2010). For instance, while business-led arrangements such as the Forest Stewardship Council (FSC) for sustainable forest management or the chemical industry's Responsible Care program for environmental performance improvement do not exhibit direct state involvement, the regulatory infrastructure such as the enforcement of property and contract law and constitution of corporations offered by state forces nevertheless has facilitated the functioning of such arrangements. Furthermore, according to the FSC (2015), recommendations from the U.S. Department of Energy and Environmental Protection Agency significantly benefit their business and thereby the promotion of sustainable forest management. In this case, indirect involvement of state forces appears necessary and crucial in CLEG arrangements (Fiorino, 2010).

Civil Society in a CLEG System

Civil society, represented by many environmental nonprofit organizations, plays a significant role in EG systems at different levels by cultivating a broader environmental awareness, diffusing environmental imperatives, and actively influencing and participating in public and private EG decision-making and actions (Falkner, 2003). In this case, environmental nonprofits have become a corner in a horizontal EG triangle formed by public, private, and nonprofit organizations to replace conventional state-centric hierarchical EG arrangements (Figure 3; Lyon, 2012). In fact, in some cases, particularly in state-involved arrangements, nonprofits are even conceptualized as competitive forces against corporate entities in delivering EG services through normative campaigning and working closely with governmental agencies (Corson, 2010; Kraft & Kamieniecki, 2007), and the competition may partially explain the growing activeness of corporate EG involvement (Arenas et al., 2009). Yet the ongoing retrenchment of state forces has shifted the relationship between the two sectors toward an increasingly cooperative direction (Pattberg, 2005). For instance, environmental nonprofits are found to refocus from state-centric procedures (e.g., legislative process) toward more direct interactions with corporations to pursue their agendas (Baron, 2001; Lyon & Maxwell, 2011). As mentioned earlier, in initiatives such as We are Still in and America's Pledge, civil society members are actively collaborating with businesses to deal with the EG deficits resulting from the ongoing state retrenchment. This shifting landscape has likewise enhanced the impact of both sectors as important participants in EG systems at various levels (Lyon, 2012).

The underpinned cooperation between the two sectors entails a prominent position for environmental nonprofits in CLEG systems. In general, environmental nonprofits are capable of engaging in all three tiers of CLEG arrangements. At the "operational" level, environmental nonprofits can partner with corporations in organizing production and distribution processes in a more environmentally responsible manner through the provision of knowledge and monitoring services. At the "collective choice" level, incorporating third-party organizations will help to expand the toolkit of developing "operational rules" and likewise enhance their legitimacy. At the "constitutional" level, shaping the landscape of broad political and social context requires coordination from civil society members to spread the impact of CLEG arrangements, while corporations can in turn help civil society members with fund raising and capacity building to sustain their coordination. This cooperation likewise helps to alleviate the potential crowding-out effects of state actions (Parker & Thurman, 2011). While discrepancies in understandings toward EG objectives and inconsistency in instrument choices might lead to conflict(s) and mistrust between the two sectors (e.g., environmental nonprofits and trade unions regarding providing labor protections), active social interactions are found to be helpful in addressing these hurdles (Arenas et al., 2009). Specifically, developing and maintaining an open and transparent decision-making arena through deliberation and negotiation facilitates the incorporation of civil society members in CLEG systems, and cross-sector learning can further improve mutual understandings between corporations and environmental nonprofits. In this case, the integration of civil society members in CLEG systems benefits the overall functionality and societal appropriateness of CLEG arrangements.

Conclusion and Outlook

The longstanding study of corporate EG involvement has taken on a new resonance in the current U.S. political environment. Traditionally, the state was central to EG systems. Over the last few decades, however, alternative governing arrangements have emerged as an important component to the existing environmental regulatory system (Lemos & Agrawal, 2006). Among non-state actors, corporate entities play a prominent role given their market and political power and their growing commitment to CSR (Davis, 1960; Lyon et al., 2018). This prominence may also be attributable to corporations' organizational and institutional adaptability and multiformity in delivering regulatory mechanisms (Cashore, 2002; Hsueh, 2013). Further, the current U.S. political environment has portended fewer resources for environmental action within the conventional state-centric governance system, reinforcing the relevance and necessity of governing efforts from non-state actors. CLEG arrangements therefore may emerge with the potential to alter the existing regulatory structure through alternative governing mechanisms.

The current analysis provides a systematic theorization of a CLEG model in a time of state retrenchment. Building on existing literature, the analysis adds to the broader conversation on non-state alternative EG and corporate EG involvement. The proposed corporate EG leadership in particular contributes to recent calls for the possibility and nuances of leadership exercised by non-state actors in governance regimes (Howlett & Ramesh, 2014). That being said, the analysis nevertheless offers a descriptive perspective seeking to distill from the rich literature the institutional configuration of a CLEG model in broad brushstrokes, to advance the analysis around this topic. Neither does the analysis attempt to advocate a dichotomy between private and public regimes as incorporation of a broad participation is a feature of effective EG arrangements. The underlying assumption is corporate EG leadership with the cooperation and enabling from both state and other non-state actors given the ongoing state retrenchment in the United States. This is because both non-state and state efforts are needed to achieve the long-term mid-century targets and build a sustainable future. Further, while the focus here is on corporate EG leadership, it is important to acknowledge that in parallel with their direct involvement in EG systems, corporations are likely to maintain their positions in political processes as well (e.g., participating in environmental initiatives while simultaneously supporting trade associations against environmental regulations). As such, in addition to the institutional characteristics articulated previously, a careful assessment of their corporate political responsibility (CPR) commensurate with direct EG involvement is also in need to advance this line of research (see Lyon et al., 2018).

Potentially fruitful points of departure for future analysis include a more in-depth investigation into the presence of CLEG systems in different contexts (see Andonova et al., 2009; Ba & Galik, 2019) as well as their interplay with state and civil society members. In addition, theorization of the interaction between corporate-led governance arrangements and environmental policy processes is needed to advance the knowledge on the positionality of CLEG solutions in environmental policy-making, in particular regarding the shifting roles of and venues for different stakeholders and the technical and ideological feasibility of different policy instruments. Further, empirical testing of the effectiveness of CLEG systems at different levels in fostering desired environmental outcomes and a comparative analysis on strengths and limitations of diverse forms of EG arrangements (Ostrom et al., 2014), would also be necessary and rewarding in terms of building greater clarity around the functionality of alternative EG arrangements. Finally, a detailed articulation of firm-level dynamics (e.g., marketing, financing, and public relations practice and decision-making) given the ongoing state retrenchment would likewise contribute to the comprehensiveness of knowledge at the micro level.

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ORCID iD

Yuhao Ba https://orcid.org/0000-0002-4148-2494

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Author Biography

Yuhao Ba is a doctoral candidate in Public Administration in the School of Public and International Affairs at North Carolina State University. His research focuses on environmental policy, non-state environmental governance, and public policy process.