
A Method for Studying Institutionalization of the Global Climate Discourses at Organizational Level

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Abstract

The prevailing green and sustainable discourses today are produced by the global green economy “guidelines-making clubs”. In this article, a method is proposed that identifies the vehicle for these discourses’ acceptance and enactment in organizations, through corporate green identity projection. Thus, the tracing of the diffusion of “green and sustainable” discourses all the way to the formulation of organizational competences and their practical embedding is demonstrated. The discourses on climate change adaptation and mitigation builds on important metrics (i.e., the carbon emissions measurement, reporting and verification), which are involved in the construction of the field of “green economy” and of the pathways of institutionalisation of green norms and values (i.e., the green and low-carbon norms and values). The method here takes the construction of green organizations through the translation of global green discourses. The method also bridges two fields of study: science and technology studies and the studies of institutions.

Introduction

Science and technology can be implicated in the processes of embedding norms and values in organizations. In this article, I make an attempt to outline a method that bridges two fields of social studies, science and technology studies and the studies of institutions, or rather their emergence and embedding in organizations and the inter-organizational spaces, such as the supply chain networks. The big research question for me was whether the science and technology of accounting for the environmental impact of companies in local places and territories (i.e., LCA, environmental footprint, carbon footprint) aids a more sustainable and green consumption and deployment of the earth and human resources; and if not, then could

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it be a failure of institutionalisation of green norms and values rather than a failure of science and technology? In this article however, I will talk about the method that I propose for answering this question.

I suggest a method that looks at the mechanisms and processes involved in the emergence and diffusion of “green and sustainable” discourses of enterprise managers, as well as at corporate public relations messages. I then demonstrate how discourses, specifically on climate change adaptations and mitigation [i.e., the carbon emissions measurement, reporting and verification (MRV), product and service life-cycle assessment, and environmental footprint], are involved in the construction of the field and the pathways of the institutionalisation of norms and values (in this instance the green and low-carbon norms and values) in selected organizations. Caution has to be applied when generalising the diversity of normative and practical interpretations of climate change adaptation and mitigation values, norms, and practices, as they seem to be leading to a variety of unintended consequences. If we take China as an example of a country where MNCs like Siemens have large supply networks and local partners, the diffusion of green norms and values can be traced in the texts, discursive practices, and public relations messages of Siemens’ offices and supply chain partners in China. It is vital to understand the actual translation of global and national discourses into the local company’s values, norms, practices as well as employees’ competences for environmentally sustainable compliance and conduct.

Translation of global discourses

It has been evident from research on the implementation of global environmental conventions at national and local levels that a diversity of organizational and cultural translations of the global climate change discourses need to be transformed from the highly scientific language of international conventions into a locally acceptable and practical language that can be acted upon. I would like to suggest that a much better conceptual translation has to take place in order to explain climate change discourses in an ordinary language to individuals, households, and organizations – especially those in the developing countries with large proportions of

poor and vulnerable populations. That is, the normalization of climate change adaptation and mitigation strategies need to be better translated to the very people who are indicated as the most vulnerable and at risk in relation to the fast-paced advancement of climate change.

Thus, in the proposed method assemblage I am building on the concept of “translations” from STS and ANT studies. In this scenario, the managers and employees in a local supply partner of an MNC are taken as the “translators” and hubs of transformation of a discourse and/or often only its elements into a norm-like or a value-like symbol. The next thing that is expected to happen is the norm-like or value-like translated symbol to either be taken further on its pathway of being interpreted into practice at the more local level, or to stay a “black box”; un-deciphered and, effectively, remaining a discursive puzzle to be resolved at an unknown time and place. The various elements of the discourses can create any pattern, any assemblages of values, policies and norms. As researchers we can piece together an articulated discourse from “traces of phenomena ‘out there’” found in documents, data, and interview notes. These traces of phenomena are important as a research approach here borrowed from Lippert and the early ANT approaches that are about “how scientists attempt to gather, translate and manage traces of phenomena ‘out there’” (Lippert 2013, citing Latour 1987).

Discourses of risk

Climate change discourses are essentially discourses on risks, including environmental (air and water pollution, loss of biodiversity) and population risks (human health and safety, including the drastically reduced consumption levels from mounting natural disasters, food security, drastic reduction of availability of drinking water, etc.). There is a tendency towards the activation of policies aimed at reducing those risks, which is becoming increasingly norm-like at the national and corporate level, as well as accepted and valuable. This normalization is fostered by the disclosure of low-carbon compliance that has been on the rise, especially in the last 5-10 years, also in China. Compliance with these tendencies in turn indicates the company’s chances of being accepted into the world

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club of financial and policy formulating global businesses and governments that oversee and control the guidelines creation for green economy. The “translation of green/carbon non-compliance” in the corporate risk analysis is increasingly linked to a) risks of losing financial investments, b) risks of being excluded from highly valued supply chain networks, and c) risks of being excluded from the green economy policy-making clubs.

Demand for green normativity and values within supply chain networks

The strong need for potent translations of climate discourses into the conceptual and ordinary languages of a variety of stakeholders becomes manifested through the demand for and through an acceptance of green normativity and values among members of organizations and supply chain networks (i.e. employees, managers of companies and supply chain members). This is often achieved by engaging in norm entrepreneurship at the company level, as well as in the inter-company space (i.e. at the level of professional associations or supply-chain meetings).

Lippert mentions the major STS point being that “scientists assemble and engineer heterogeneous entities and relations” (Law 1987 cited in Lippert 2013). From that perspective the entities once assembled need stabilisation, and this stabilisation happens through the figuration process that Lippert proposes to advance as the following definition by Lucy Suchman (Suchman 2012, 55 cited in Lippert 2013):

Method assemblage of configuration could be understood as a device for articulating the relation between the “insides” of a socio-technical system and its constitutive “outsides”, including all of those things that disappear in the system’s figuration as an object.

The contribution of this article to the ongoing climate change debate and the institutionalization of climate change adaptation and mitigation values, norms, and discursive practices is in demonstrating how science and technology studies can be coupled with the studies of institutions.

This is achieved through a discourse analysis aimed at making a fruitful inquiry into the origins and pathways of the institutionalisation of green values, norms, and practices within two companies that are members of a “green” supply chain and were selected for this research. Thus, the “green” and low-carbon discourses in those two companies have been traced towards the following:

- a) the roots of institutionalising green values, norms, and practices through the development of identities, competences and discursive practices that these companies claim to be building up in order to be leading and desired companies in their field;
- b) the macro-discourses that inspire the organizational discourse on green and low-carbon; and
- c) the macro-discourses that the companies actually co-produce with international business associations, conferences, other MNCs, and governments.

In order to carry out this research, Siemens and RPQ in China were analysed. The roles that the two companies play in each of these traced stages enumerated above are dependent on the level of acceptance of the global discourses, the translation skill into the language and local reality of the companies. Finally the scientific, technological, and managerial capacity in the companies to articulate their own values, norms, and practices that would convince the others of the “greenness” of the company is another factor. These elements are necessary in order to be accepted in the “green economy club” that defines, formulates, and decides upon guidelines and acceptable behaviours of actors, their sanctions and motivations in the new green economy. The latter is a heavily regulated economy, with their regulators not being states, but the inter-state organizations presided over by business and MNCs.

To further elaborate on this method, this article presents the macro (i.e. global) discourses that are generally legitimised by the MNCs, who are themselves members of the “exclusive” clubs that formulate the discourses. Secondly, a discourse analysis of web messages of two studied companies is conducted. At Siemens, the first of the two companies, the

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respective discourses are analysed through reading, interpretation, and de-construction of the texts produced by Siemens in their annual sustainability reports, online media, CDP reporting, as well as through private and public interviews and publications on specific topics related to corporate sustainability, green products, policy and practice. In relation to the second company, RPQ, the discourses are analysed through reading, interpretation, and de-construction of the texts taken from RPQ websites. Finally, the normalization of the climate discourses of high-science level and international conventions' adaptation and mitigation language is discussed in terms of institutionalisation of green competences at Siemens and RPQ.

Part 1. Legitimizing "Green" Discourses

Briefly on the discourse method

Methodologically, the general frame of Philips et al (2012) of organizational discourses is used here, as it was pertinent for conducting analysis for the current research. Philips et al propose a framework for investigating the emergence of institutions through discourse analysis. This model allows the possibility of setting several conditions under which the various elements of the model (features of actions, features of texts including images, videos, reports, etc., and features of discourse producing certain kinds of institutions) are most likely to occur, similarly to how it was demonstrated in the methodological survey of Philips et al (2012, 646).

This article attempts to build a method of understanding the "green" constructs within organizations through the discursive practices of managers and PR strategists of these organizations. In effect, an attempt is made to build what Philips et al call "the much more developed discursive conceptualization of social construction" (Philips et al 2004, 648) as an important way for understanding institutional phenomena, as perhaps it can offer a variation of a "more comprehensive theory that encompasses stability and change in institutions, institutional fields, and institutional effects" (ibid).

The following definition of discourse from Philips et al (2012) is used in this article.

Discourse as a collection of texts: “A discourse is a structured collection of texts (Parker, 1992) along with associated practices of textual production, transmission, and reception. Through the production and dissemination of texts that accrete to form a discourse, organizational elements are brought into being, are modified, or disappear.” Thus, texts can be the building blocks of discourse and a material manifestation of it (Philips et al 2012, 2). “Texts are the sites of the emergence of complexes of social meanings, produced in the particular history of the situation or production, that record in partial ways the histories of both the participants in the production of the text and of the institutions that are “invoked” or brought into play, indeed a partial history of the language and the social system.” (Kress 1995, 122 cited in Philips et al 2012, 10). Texts may take a variety of forms, including written texts, spoken words, pictures, symbols, artefacts, etc. (Grant et al 1998 cited in Philips et al 2012, 10).

Discourse is “language in use”, “conversation”, “dialogue”.

Discourse used when referring “to inter-related sets of ideas and the ways of expressing them such as the “discourse of democracy”, the focus here is not so much on the specifics of the language used, but more on the coherence of the underlying concepts and ideas contained in a particular set of texts and their evolution through time. When used in this way discourse often refers to written texts rather than talk and to the cumulative meaning of a number of such texts” (Deetz 2003, 423 cited in Philips et al 2012, 8).

Discourse includes “pieces of talk or text as they affect or are affected by the social context in which they appear, and by the texts and ideas they draw on and influence in turn. It does not take the social world as it is and seeks to understand the meaning of this world for participants like, for example, ethnographers. Instead, it explores the ways in which the socially produced ideas and objects that populate the world come to be, or are enacted, through discourse” (Fairclough 1992 cited in Philips et al 2012, 9).

Discourse as deep structures. Diaz-Bone’s (2007) discussion on discourses is very useful, as she refers to discourse through the different traditions

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of French structuralism and post-structuralism as follows “in the structuralist era discourse is introduced as the underlying deep structure of the human mind (Levi-Strauss) or the human psyche (Lacan)”. Diaz-Bone says “the Foucaultian use of this concept is the first that combines a structuralist view with a praxeological interpretation of discourse into an at least dualistic concept. Foucaultian discourse is conceived of as a super-individual reality; as a kind of practice that belongs to collectives rather than individuals; and as located in social areas or fields. However, as the later work of Foucault and the work of Judith Butler have shown, discourses have an impact on individuals as they are discursively constructed and constituted.”

Thus, for the purposes of this article, the definition of discourse is taken as an assemblage of values, beliefs and, norms that become the ideational background and source for the manifested, enacted, and embedded behaviours, practices, competences, and identity projections of individuals, members of organizations, and organizations as the ultimate constituted assemblages. In a way, discourse is the intricate rooting of the visible tree of everyday life: to understand the fragmented pieces of activity, behaviours, routines and practices we need to trace them back to the values and belief systems that nourish and support them, the roots of the tree, the so-called “deep structures” (Foucault 1986).

Macro-discourses serving as frameworks in studied companies

The text and word analysis of several samples of Siemens' and RPQ's websites reveal that their carbon and environmental compliance is often packaged alongside the following motivations that can be derived from the online corporate image discourses:

- 1) value creation for stakeholders, specifically the long-term value creation and long-term growth company strategy;
- 2) substantial market share of the green economy;

- 3) key player – key author of the new guidelines for the sustainability and green;
- 4) financial gains (access to the top banks);
- 5) continuous improvement of technology to enable integrated tech solutions.

The four macro-discourses have been identified in both studied companies, RPQ and Siemens, in the form of norms and policies articulated in these companies' documentation and projections, including official messages and managers' talks. These four discourses help delimit a general framework, or reference sources which guide the studied companies as they organise the sustainability programs, compliance and internal "green" norm settings, especially those on ecological footprint and emissions measurements, reporting, and verification.

The four macro-discourses are as follows:

Macro-discourse 1. Carbon measurements to aid in Balancing Consumption on Planet Earth: Climate change and the nation states' responsibility discourse.

Macro-discourse 2. Business Carbon Compliance: The Organizational Footprint MRV (conventional way of referring to Measurement, Reporting and Verification): CDP and other investor requirements for "green economy" performance (as opposed to sustainable environmental conduct), and the supply chain (GHG3) emissions reporting requirements;

Macro-discourse 3. Consumers' green sensibilities inside and outside of organizations: Organizational discourses aligned with the competing macro-discourses aimed at company sustainability and shareholder (and stakeholder) value creation, (i.e. Siemens on Green Economy and Social and Environmental Accounting and Accountability);

Macro-discourse 4. Chinese national discourses and national regulation: the macro-discourses (international organizations and MNCs) filtering through to the national agendas and institutions.

Out of all four discourses, the Macro-Discourse of Business Carbon Compliance has the strongest presence in Siemens' web messages and

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they seem to have shaped its sustainability vision. This is evident from the preferred memberships and partnerships that Siemens has been engaged in. Siemens' key discourse on high-level policy alliances is articulated as follows:

“Sustainability and responsible action are not possible in isolation – they can only be realized in joint initiatives on the part of politicians, the business world and society” (website).

Siemens tends to get involved in numerous memberships and strike partnerships with national and international organizations that are vocal about policies, norms, and standards for environmental and social sustainability. While being active in a wide array of initiatives and partnerships in the areas of environmental and social engagement, Siemens had historically been building ties to a set of strong organizations and institutions. This way Siemens has been able to have an impact on setting standards, developing rules and instituting norms. This is important in the context of the present article, especially with respect to the extent to which Siemens' corporate vision is effected by the global discourses on greening and de-carbonization; as well as which discourses are actually translated and further passed on to Siemens' partners and suppliers, which become institutionalised, and part of the competences of Siemens' supply networks.

International guidelines provide for conventions and recommendations recognized worldwide. Siemens lists these in its online public relations messages:

Siemens observes and respects local laws and statutory requirements as the legal foundation of its business activities in all the countries in which it does business. Siemens places great emphasis on recommendations and standards issued by national and international organizations. As a rule, these recommendations and standards are directed toward member states rather than individual companies. Nonetheless, they also serve as guiding principles for global companies like Siemens as well as for the behaviour of their employees. Siemens endorses the stipulations contained in these conventions and recommendations and expects its employees, suppliers and business partners worldwide to comply with them.

From the web messages, several high-level political discourses are notable and may have had an impact on Siemens' discursive practices, its identity, and the competences of its organisation and workers. However, it is clear that while Siemens is a member of these "clubs", Siemens' management and board have a strong tendency to influence and shape the discourses of these "clubs". The following are the most notable: the OECD Guidelines for Multinational Enterprises, Global Reporting Initiative Guidelines, Carbon Disclosure Project, The World Business Council, and International Business Leaders Forum (IBLF), the World Resources Institute discourses, the UN Global Compact discourse the "Agenda 21" on Sustainable Development.

The values and norms being supported and promoted by all the above organizations are mirrored in Siemens' public relations messages as being the ones that are correct and identified with. These values and the norms can be listed as follows: human rights, basic workers' rights, environmental protection, and the fight against corruption as an integral part of the businesses' own business strategy. In line with an obligation as part of the Global Compact, for example, Siemens expects not only its employees but also its suppliers and business partners worldwide to particularly observe the relevant guidelines.

Part 2. The Construction of a "Green" Organization and "Green Supply Chain"

Here the comparison of the organizational discourses at RPQ and Siemens are explained from the perspective of a "social construct", where the online discursive practices of the two partners within an "engineering environmental solutions provider supply chain network" are analysed.

Using the method of Philips and Hardy (Philips & Hardy 2002 cited in Philips et al. 2012), we take the study of organizational discourse as a way to "understanding the processes of social construction that underlie the organizational reality".

We are lucky that the earlier battles on "social construction" had been won, and "the broader acceptance of social construction created a

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fertile ground for growing interest in analysis of organizational discourse” (Berger & Luckmann 1967 in Gergen 1979). One of the strong attestations of such victory was articulated by Berger & Luckmann for the social construction to be “a legitimate epistemological perspective in the study of organizations and management” (Berger & Luckmann 1967 cited in Morgan & Smircich, 1980).

Thus, this article is built around “a new appreciation of the role of social constructs like identity and institution in organizational life” (ibid) as “the recognition of the importance of meaning and the constructed nature of organizational reality” (ibid, 4).

As while “[...] other qualitative methodologies work to understand or interpret social reality, discourse analysis, by focusing on inter-related texts and their role in constituting concepts, endeavours to uncover the ways in which it was produced. It examines how language, broadly defined, constructs social phenomena rather than working to reveal its meaningfulness. The unique contribution of discourse analysis is that it views discursive activity as constitutive of the social world and focuses on understanding the process through which the social world is produced and through which it changed” (ibid, 10).

There is also an increasing recognition of the central importance of identity at work and of “the complex relationship between work and non-work identities, interactions between organizational and individual identities” (Albert, Ashforth & Dutton 2000 cited in Phillips et al. 2012).

The analysis of the words and texts of all discursive practices of RPQ and Siemens point to the discursive constructs that are being borrowed and integrated, or desired to be integrated, in the companies – through norm entrepreneurship and translating as own values, norms, and practices. They also reveal “those things that disappear in the system’s figuration as an object”. Once the borrowed language of the “green and sustainable” concepts and institutions is integrated, the company aims at becoming one of the “authors” and “translators” of the highly scientific speak of international and inter-organizational normativity on carbon, the green and sustainable to the “more” local (i.e., those who are not directly working with the MNCs) partners and suppliers. The norm entrepreneurship grows into the norm setting and standardisation, the market

for which is to become increasingly saturated and contested in the green economy.

Section 2.1. Projected Green Identity of SIEMENS – Official Web Messages

Analysis of the organizational discourses based on official website messages reveals strong connection to the discourses legitimised by the international scientific and corporate community in the global clubs and “green” and “carbon” guidelines’ authorship circles.

Declared identities, competencies, and discursive practices are translated into the green values, norms, and discursive practices that the two companies use in their public relations messages.

The sequence of filtering and the subsequent institutionalization of green and low-carbon discourses at the company level are suggested to be as follows:

Values: Fierce competition to be a player in the green economy brings companies to the forefront of a struggle to project a certain “green” identity, by declaring “green” values that are indicated and promoted in the company’s adherence and membership in global and national organizations that require upholding and projecting of certain values through compliance frameworks, memberships that declare specific values and principles;

Norms: Through the key products and services of the company that materialise through employees’ behaviour and the norm setting by managers and decision-makers, the new set of motivations and sanctions are developed to illustrate desired competencies that are needed to endorse the green values and foster the green identity;

Discursive practices: As a result of norm entrepreneurship and rhetoric strategies of the managers and decision-makers in the company the instrumental use of green norms becomes more readily acceptable; i.e. ideal type practices are listed in the online communication channels, interviews, and sustainability annual reporting.

Thus, the articulated values, norms and discursive practices (including the actual practice of compliance) can be grouped under two discursive conceptualisation processes within Siemens, which results in social constructs of “green identity” and “green competences” (see Table 1). This way the macro “green” discourses become captured and stabilised within the company forming their identity and competences, at least in a discursive way.

Table 1. Green Discourses Institutionalised for the Greening at Siemens

SIEMENS	Institutions translated from prevailing discourses (the stabilisation of discourses)			
Company Discourses	Values	Norms	Discursive Practices	Compliance (practice)
Construction of Green Identity	Viewing environmental protection holistically: from planning our products to manufacturing them to the collection, recycling, and disposal of used product. Valuing Business opportunities, Stakeholder Dialogue, Continuing education in environmental protection, Sustainability as the cornerstone of Siemens' values, Environment Awards.	<i>“Sustainability organization links KPIs, management performance targets and sustainability, interacts closely with executives in charge of company units to collaborate on establishing targets, developing programs and initiatives, and defining key performance indicators. These KPIs are exceptionally important – so much so that they figure prominently in our management performance targets.”</i>	There exists a Siemens Sustainability Program, and the Siemens Environmental Protection Strategy that includes: 1) Environmentally compatible product development; 2) Environmental management systems conforming to ISO 14001; 3) Siemens monitors energy consumption and the emission of greenhouse gases, VOCs, and ozone-depleting substances;	The <i>Compliance Helpdesk</i> “Tell Us” offers Siemens employees or managers as well customers, suppliers and other Siemens business partners the opportunity to submit reports about violations of the Siemens Business Conduct Guidelines 24/7 all over the world – securely and confidentially. Employees and third parties can contact the external <i>ombudsman</i> on a confidential and anonymous basis if they have

			<p>4) Siemens is working on continuously reducing the environmental impact of water use;</p> <p>5) With a company-wide reporting platform, Siemens systematically monitors and measures its environmental performance worldwide;</p> <p>6) Directed waste management makes a key contribution to resource conservation;</p> <p>7) Information, communication and training promoted through a worldwide network of knowledge management and communication at Siemens;</p> <p>8) Nature and wildlife conservation are gaining importance at Siemens.</p>	<p>noticed any improper business practices in the company. <i>The Code of Conduct</i> for Suppliers for implementing the corporate responsibility in Siemens, is also necessary to oblige suppliers to comply with Siemens' principles. Therefore, the Code of Conduct for Siemens Suppliers is a mandatory element of all new and extended contracts and Siemens expects its suppliers to commit towards its standards and principles in their own company as well as to promote and implement it within the entire supply chain.</p>
<p>Construction of Desired Green Competences</p>	<p>"Walk the Talk", Three levels of reporting, that develop green competences: 1) At least once a year the responsible</p>	<p>Appreciation of a "Specialist function" (i.e. Environmental Protection and Corporate Citizenship), Integrated com-</p>	<p><i>Executive compensation</i> has for quite some time been tied in part to meeting specific targets defined in the Siemens</p>	<p>"To monitor compliance with the EHS principles and implementation of the management systems, we have defined</p>

	<p>individuals appointed to <i>perform EHS duties evaluate the level of goal achievement for the past year, the status of projects, and strategies for the coming year as part of a management review.</i></p> <p>2) At the company level, the <i>director of the central EHS office reports with his management team to the responsible Managing Board member.</i></p> <p>3) <i>Quarterly reports supplement the management information.</i></p>	<p>pany-wide <i>guide-line competency for environmental protection, health management, and safety;</i></p> <p>Centralised “Environmental Protection, Health Management and Safety” office (abbreviated as “EHS”); <i>High level official monitors a linked competence in EHS + HR: The Managing Board member responsible for Corporate Human Resources is also responsible for EHS.</i> “Energy is the driving force behind civilization. It is not enough just to have sufficient amounts of energy available. Sustainable City and Improving people’s quality of life by using the right technologies is one of our strongest competences.”</p>	<p>Compliance Program. The <i>EHS principles define all parties' responsibilities and lay out the requirements for the competency and qualifications of EHS experts.</i> Those with responsibility appoint the EHS experts and <i>provide the necessary technical and human resources.</i> This ensures an excellent management system for environmental protection, health protection, and safety worldwide.</p> <p><i>Clear chain of commands: At the company level, the head of Corporate Human Resources performs the associated responsibilities. She is supported by the corporate EHS office with its technical sections for environmental protection, safety, health management.</i></p>	<p>an <i>audit concept.</i> It has already been implemented in environmental protection and safety; health management will be added in the future.” The audit concept states that an organizational unit is audited by the next-higher EHS office in the corporate hierarchy. At Siemens the managing boards of the regional companies must also ensure that local laws are observed. For this reason the EHS officers of the regional organizations also conduct legal compliance audits in addition to the examinations described above. The company's central EHS office monitors all these audits using systematically selected random samples to ensure consistent quality.</p>
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Part 2.2. Projected Green Identity of RPQ – Official Web Messages

A supply chain or supply network membership alongside a leading “greening” multinational with high-profile recognition of its environmental performance (i.e., leader of the Carbon Disclosure Index) has a strong influence on the level of acceptance and drive for compliance with certain green values and norms among its supply chain members. This, for example, can be seen from the comparative discourse analysis of a German MNC and its Chinese counterpart. Yet, this level of acceptance and the drive for compliance, as will be demonstrated further, are not equivocal among the two studied companies in terms of norms and “discursive” practices, while being similar in terms of values. Often the supply chain members need the “translation” of the high-tech and high-science concepts and yet in practice they leave the “unpacked” black boxes of concepts on greening and sustainability. This could be due to the enormous speed of change occurring in these companies’ processes and practices, with such high growth rates and number of clients. So companies often want to be left alone to get on with their business-as-usual scenarios and behaviours of consuming local resources, including those of the labour force (personal and professional competences, intellectual capacities, creativity, entrepreneurial spirit, “green and sustainable” ethos, ascetic behaviour towards environment, etc.).

The managers of the Chinese Environmental Solutions Provider RPQ have been translating the discourses on greening from their larger partners within the supply chain network (i.e., Siemens) and from the national discourses (i.e., legislation, statues, compliance programmes) into their company’s operationalized greening values, norms, and discursive practices. For instance, the way RPQ presents itself to its clients (via power-point slides) in client meetings and follow-ups, is as follows:

RPQ, pioneer of thermal storage market with more than 45% market share, number-one-company in the variable-air-volume & low-temperature air conditioning market, with 400 employees across the country, mostly R&D driven with rapidly growing sales of annual rate 20%.RPQ has enjoyed a 40% growth rate during 4 years between 2008 and 2011 from 320 Million to 830 Million RMB (renminbi).

In the following table and exhibits, the official texts/images of RPQ that were taken from their website and provided by the company managers through presentations, internal documents, and PR documents are presented. Again, similarly to Siemens, the values, norms, and discursive practices of RPQ can be grouped under two processes of social construction and institutionalisation of the macro-green discourses, i.e., forming the RPQ’s “green identity” and the “green competences” in a discursive way (see Table 2).

Table 2. Green Discourses Institutionalised for the Greening of RPQ

RPQ	Institutions translated from prevailing discourses (the stabilisation of discourses)		
Company Discourses	Values	Norms	Discursive Practices
Construction of Green Identity	“Science & technology serves environment” is not only a slogan but also a <i>principle lying in our products and meticulous service</i> . It is all because we are devoting to building a <i>harmonious relationship between man and environment</i> that we firmly believe we are to succeed. And so are you. Cooperate with us, and what <i>you will obtain is far more than economic benefits</i> .” (Source: website of RPQ)	“An overall contractor in the field of air conditioning or heat system applying thermal-storage technology and environment protecting system for power plants, we provide complete service covering designing, delivery, installation, and testing. It is we who have done almost a half of large projects applying cold-storage air conditioning technology in China.” (Source: website of RPQ)	“We are pursuing the ideal of Science serves our environment” to repay the deep love and concern given by our supporters.” (Source: website of RPQ)
Construction of Green Competences	“RPQ Environment Engineering is now the <i>largest Chinese Hi-Tech enterprise</i> in the field of thermal storage cooling and heating	In 2011 the company underwent re-structuring. In the new company structure, there are different directions, no overlapping, func-	“We have been awarded the certificate for complying with ISO-9001. More than 90% of our staff graduated with

	<p>application. In 2011 the company underwent re-structuring. The new structure of the company is in response to the Chinese government's targets for reducing carbon. Decentralising of the energy is a priority for government, thus pushing the technology. Also, The Government wants to develop rules for Decentralised Energy." (Source: RPQ manager's interview)</p>	<p>tions are clearly divided. Better structure than before. MEP is the new focus in the new structure. It is the most profitable, this department's major work is installation outside and support of the sales teams. (Source: RPQ manager's interview)</p>	<p>bachelor degree or higher, among which, there are tutor of doctor, postdoctor, doctors and else. We have been awarded the National Science & Technology Advancement Awards on cooling equipment designs, the Ministry Science & Technology Advancement Awards and the Shanghai science & technology advancement awards. We successfully developed the conductive plastics coil chiller and Core Ice Ball chiller, which were the first in China, and approved by the Ministry of Electricity. We are in the leadership In the field of Automation System for thermal storage air conditioning system in China, moreover, we are keeping the most advanced know-how in the field of low temperature ventilating system and variable refrigerant volume box." (Source: RPQ manager's interview)</p>
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The following discursive practices become evident from RPQ's web messages:

- a) the discursive practice of referring to the Footprint MRV as a strategic management tool and an operations management tool as it becomes institutionalised through the adoption of ISO 9001, ISO 14001, LCA,

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- Carbon Emissions MRV, the internal sustainability and environmental standards, and/ or environmental health that MNCs develop and follow;
- b) the reported practices that are made to look as if they become normalised in relation to an “organizational footprint” spill over and filter through to the MNCs supply chain (through written requirements to products and services supplied/ screening);
 - c) formal and informal communication channels (training, business meetings, industry meeting interactions);
 - d) the intended and unintended ways of transferring green requirements, sensibilities, and expectations to the supply chain by large actors, such as Siemens.

Furthermore, in the following three exhibits it becomes evident that the Environmental Management discourse is dominant in the company’s perception of itself and the solutions it has on offer. There are three characteristics:

- 1) science and technology has the solutions;
- 2) science and technology is the solution;
- 3) and RPQ has sciences and technology that can help the environments.

Exhibit 1. RPQ Strong Engineering History

The History of RPQ in Milestones as listed on their website is a typical story of an engineering firm growing steadily since 1956 (Founded the Shanghai Machinery Design-Research Office Of Power Industry), often with government support. In 1980, it was re-organized as the Hangzhou Machine Design-Research Institute Of The Ministry Of Water-Electricity. Since around 1998, after receiving its first commercial contract with the Hangzhou Construction Bank, the company becomes increasingly market orientated and grows its market share in Ice-thermal-storage systems and ice ball, after having been listed into the national Torch planning projects. The Hangzhou branch is reformed into a science and technology company as the State-Power Machinery Design-Research Institute. In 2009, the Hangzhou State-Power and Environment Design-Research Institute is founded, which in 2010 becomes re-established as the RPQ Industrial Group.

Exhibit 2. The Website Message from the President of RPQ reads as follows:

“With the rapid development of science & technology, the relationship between man and environment is becoming an important subject in the 21st century. Good environment promotes the evolution of man and propels the society forward to benign cycle. However, science & technology is the most vital element. As an artificial to environmental protection RPQ is science-and-technology-oriented. In the spirit of union, initiative, realism and innovation, the company also keeps on technology. With regard to RPQ, it is the principle that science & technology serves for environment. “Science & technology serves environment” is not only a slogan but also a principle lying in our products and meticulous service. It is all because we are devoting to building a harmonious relationship between man and environment that we firmly believe we are to succeed. And so are you. Cooperate with us, and what you will obtain is far more than economic benefits.” (Source: RPQ website)

Exhibit 3. “We are pursuing the ideal of “Science serves our environment” to repay the deep love and concern given by our supporters”.



Source: RPQ website

This exhibit shows the connection between the management projection of the company as being the scientific and technological solution provider, as a re-payment of a debt owed to the supporters, meaning the stakeholders and perhaps even the shareholders. Here, the financial sustainability of the company is explicitly linked to the company’s ability to find ways to serve the environment.

Part 3. Green Discourses translated into Green Institutions for the Greening of the Product Life Cycle

Organizational discourse analysis has been applied frequently in institutional theory because institutions “are more than persistent material practices and structures; they are also accompanied by systems of signs and symbols that rationalize and legitimize those practices” (Green et al 2009 cited in Phillips et al. 2012). Translation is an institutional process that is fundamentally a process of social construction along with theorization, institutionalization/de-institutionalization. In this research, also the translated discourses have been studied on the subject of a) use of a discursive perspective to develop a model of a discursive process through which particular institutional arrangements are made sensible, meaningful, and legitimate; b) reframing translation as a discursive process through which institutions as social constructions are adapted as they are moved to a new institutional context (Sahlin & Wedlin 2008 cited in Phillips et al. 2012).

While much of the literature in institutional theory examines the effects of institutions on organizations, or the connections between different levels of institutions (i.e., society, field, or organization), discourse analysis adds an explanation and method for understanding the process through which institutions come into being, change, and disappear. The contribution of discourse analysis is to open up the “black box” of institutional processes in a way that other methods of empirical investigation cannot. (ibid)

While Philips et al support the need for a model of the relationship between institutions and actors that highlights the role of texts and discourse in mediating between actions and institutions, the method for tracing the role of texts and discourses in mediating actions and institutions is demonstrated in this article. This builds further support to the argument about building a perspective that recognizes “institutionalization as the discursive constriction of institutions, and for a much greater attention to the texts upon which institutions depend” (ibid).

Part 3.1. Siemens – Green Competences as Green Institutionalisation

There is a strong message in the Siemens China section stating that its Chinese subsidiaries operate according to the global policies, norms, and standards. In 2011, when this study was conducted, Siemens was the world's third-best green brand and this provides the source of Siemens's confidence in its desired competences and their further development.

This becomes visible when looking at Siemens' corporate competences listed on its website under the title "Our key goals", legitimizing them under the flag of sustainability:

Our sustainability goals reflect our company's major challenges and topics. We've developed and defined them in a joint analysis with the relevant specialist departments. Here's a selection of our key goals: 1) Help customers reduce their carbon dioxide emissions by 300 million tons. 2) Grow Environmental Portfolio revenue to €40 billion in fiscal 2014. 3) Improve carbon dioxide efficiency by 20 percent in fiscal 2011 was one of our key targets. We have exceeded this goal by 22 percent. 4) Increase water efficiency by 20 percent. With a reduction of 33 percent we've clearly exceeded our goal to increasing the efficiency of water consumption by 20 percent by fiscal 2011 compared to 2006 on a revenue-adjusted basis. 5) Collaborating for sustainability. We believe that complex, interlocking sustainability challenges and topics benefit in particular from close collaboration with stakeholders. We will publish further details in our Sustainability Report 2011 (source: Siemens' website).

Part 3.2. Green Institutionalisation at RPQ: The Black Boxes' unpacking by "Managers' Talk"

RPQ's "Deetang" (meaning low-carbon in Chinese) self-image (i.e. projected identity) has been translated by its managers in the semi-structured interviews conducted in June 2011 and April 2012.

The RPQ Group positions itself as a pioneer of Low-Carbon Energy & Green Environmental technology in China. Its most valued asset is people, the RPQ Low-Carbon Energy & Green Environmental Experts. In the mission of RPQ, the most important place is given to its customers and

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employees, as well as to the relationships between the company, its employees and customers, who are bound together through a social construct called “Honour”. The mission of RPQ reads as follows: “RPQ’s Perspective, Mission, Values are in the Double Honour: Customers*Employees: customers choose RPQ service as honour, and employees work for RPQ as it is great honour to be one of RPQ’s employees”.




RPQ excels in integrating their customers’ wishes, through various parts of the physical infrastructure (i.e. buildings) having “green” solutions and installations, such as, for instance, the Ice-Thermal Systems in the buildings. Sometimes RPQ carries out turnkey projects for property owners (see Exhibit 4 below). The transmission and delivery of these turnkey projects can be expensive in terms of energy consumption (mainly transportation). RPQ does not have the ability to control this, as it can only use some technologies to reduce, yet not to eliminate it completely.

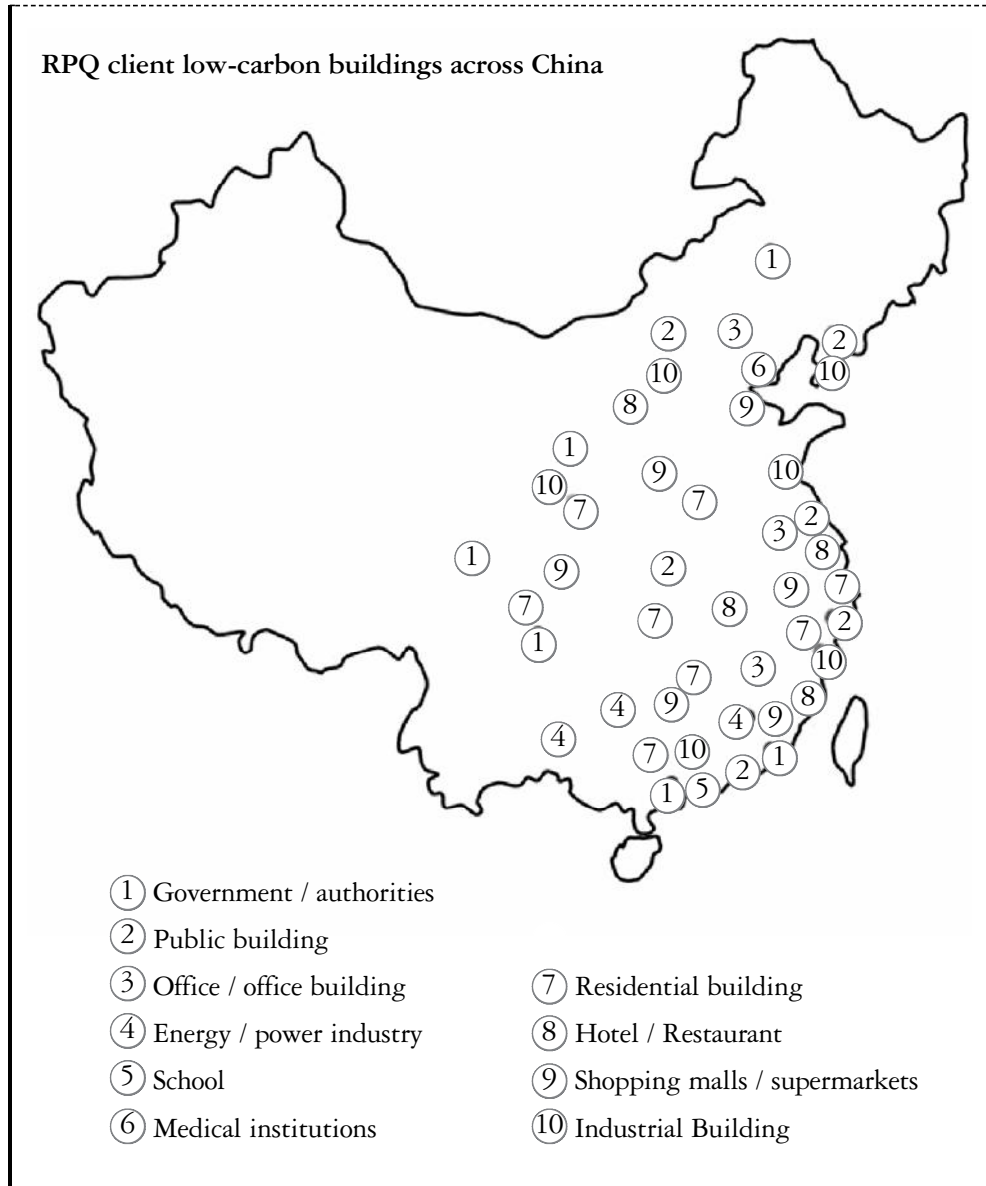
However what becomes evident from the managers’ discourses is that in the emerging low-carbon economy in China, domestic Chinese enterprises like RPQ are yet to integrate and take advantage of the green management norms and policies. Some of the following pathways offer solutions:

- 1) Combining energy saving objectives and metrics with emissions targets and reduction methods at the worker’s level, linking organizational objectives to the employees’ terms of references, greening of jobs and competencies through normative tools;
- 2) Greening of jobs and competencies through valuation tools: Key performance indicators;
- 3) Greening of jobs and competencies through situated analysis and designing a system of bottom-up (i.e.idiosyncratic) jobs and competencies by those who have more knowledge;
- 4) Developing skills and competencies for using new emissions metering and reducing tools through Green/Low-Carbon management;
- 5) Understanding existing bottlenecks in implementing emissions and resource consumption tools;
- 6) Articulating the change process from energy-saving practices towards footprint and emissions awareness and action practices;

- 7) Formulating indicators for the green / low-carbon practice as embodied through workers who learn to use Green management tools, and help reduce company footprint;
- 8) Building awareness of individual green competences vs. systemic legacy barriers in material and structures and associated struggles.

Exhibit 4. RPQ completed more than 400 energy-saving low-carbon buildings across China, effectively listing the "Green Competences" examples below

 <p>(a) <i>National Museum</i> Building area 19.0000m²</p>	<p>(a) <i>RPQ Solutions:</i> Ice-thermal storage central air-conditioning technology <i>Customers benefit:</i></p> <ul style="list-style-type: none"> • 1.500kw of summer peak-hour power-shifting
 <p>(b) <i>Shanghai World Expo China Pavillon</i> Building area 15.0000m²</p>	<p>(b) <i>RPQ Solutions:</i> River-water source heat pump & Ice (water)-thermal storage technology High efficient thermal conductive nano composite of Ice-storage <i>Customers benefit:</i></p> <ul style="list-style-type: none"> • Annual water-saving by 160.000 ton; • Annual coal-saving 2.160 ton; • Annual CO₂ emission-reducing 5.600 ton; • Annual running ccost-saving 3.05 million RMB
 <p>(c) <i>Hangzhou Civic Center</i> Building area 58.0000m²</p>	<p>(c) <i>RPQ Solutions:</i> Temperature and humidity independent control technology of flexible air-conditioning; Wind & solar power generation technology <i>Customers benefit:</i></p> <ul style="list-style-type: none"> • Annual water-saving: 67.000 ton • Annual coal-saving: 1.630 ton • Annual CO₂ emission-reducing 5.600 ton • Annual running ccost-saving 3.050.000 RMB



Conclusion

The proposed method for bridging the science and technologies studies and the studies of institutions has been useful in drawing the following conclusions:

- The cultural and technological gap exists between the “makers”/“authors” of the green and sustainability discourses at the high-policy level and international organizations’ language and local practitioners, who are supposed to make the green and sustainable a material reality in everyday practices of individuals, households, organizations, and nation-states;
- The “translations” of the high-policy agenda on climate adaptation and mitigation at the company level have diverse focuses and priorities, that are linked to various aspects of companies’ life cycles, including the government and market conditions, level of preparedness and fluency of the top managers and middle-level managers on “green and sustainable”, and the nexus of sanctions and motivations involved in the process of company image projections;
- The identity of an “Environmental Solutions Provider” that the Chinese company constructs for itself is partly copied from its more successful supply chain partners (in this case Siemens AG), and partly conceived and negotiated within the organization through various involvements in projects and initiatives that motivate managers of the company to resolve and manage carbon emissions and other environmental issues through compliance with the regulations;
- Those regulations and norms are linked to the discourses of sustainability and wellbeing, which the company claims (desired competences) to want to achieve for their shareholders and workers.

The companies’ “green, low-carbon, sustainable” or “environmental solution provider” branding may indicate the embeddedness and acceptance of “green” values and norms. Such “green” branding practice is a signalling to various audiences as well as an indication of certain “sequencing” and “designing” being underway.

The signalling of a “green identity” is targeting several audiences and for several purposes:

- a) Their shareholders and investors (financial sector) in order to show that they are attractive companies for investments;

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- b) Their supply chain partners, saying that they require specific “green competencies” and sharing of some “green values and norms” and thus green practices (a claim to establishing a “green community of practice or green specialisation and professionalization”);
- c) Their stakeholders, i.e. employees to show that they are responsible and therefore good places to work as well as to other companies for them to identify with, and to be committed to (as workers, consumers of products, loyal supporters, and carriers of values and “deep structure” discourses);
- d) The market, signalling that it aims at building trust in the ideology of a “green economy”, and thus building the social capital with specific green signalling; also in order to distinguish itself from the competition, and to position itself as a benign economic actor, as opposed to “polluter, who must pay”, thus providing for a strong PR image.

In this article the level of acceptance of green normativities at an organizational level and the links to the green discourses at macro and micro levels were investigated by looking at the way the two analysed companies conceptualise “green” and “low-carbon”, while presenting themselves under “green identities” and positioning their “green competences” to internal and external audiences. The studying of discourses and their institutionalization in organizations and their supply chain networks through linking the science and technology studies’ concepts of method assemblage, translation and “black boxes” (together with concepts of identity construction and competence construction) have been fruitful to help understand how “green and low-carbon” are rarely more than a discourse, value or norm. It further showed how little of it turns into an actual competence and practice. Indeed, it is the green competences and green commitment of the employees and managers that eventually define the actual environmental conduct of the companies, especially the technological and engineering knowledge, as well as managerial and supply chain cooperation skills.

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