GREEN GROWTH

IN LATIN AMERICA

A legitimate approach to clean-tech exports

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Resumé – *En legitim eksportstrategi?*

Dette projekt fokuserer på at oversætte komplekse problemstillinger og abstrakte teoretiske begreber til håndgribelige, strategiske anbefalinger. En virksomheds sociale ansvar og legitimitet er teoretisk set luftige – næsten torturerede – begreber som er svære at arbejde med. Ikke desto mindre argumenterer denne afhandling for at danske virksomheder med fordel kan vinde markedsandele på verdens vækstmarkeder, netop gennem strategisk arbejde med legitimitet.

Siden vedtagelsen af klimaaftalen i Paris i efteråret 2015 har grøn vækst fyldt mere på den globale dagsorden end nogensinde før. Danmark, som i år 2050 forventer at køre udelukkende på ren, vedvarende energi, står til at kunne styrke sin anerkendte grønne sektor gennem øget eksport af klimateknologi og *knowhow*. For andre lande giver udsigten til grøn vækst mindre anledning til jubel. Vækstøkonomier, eller *emerging markets*, har kæmpet hårdt og længe for de eftertragtede vækstrater der gør dem relevante på den globale scene. B'et i BRIK landende, Brasilien, kunne ifølge Verdensbanken prale af en gennemsnitlig vækst i BNP på 4,5 procent i perioden mellem 2006-2010, hvor også 29 millioner mennesker blev løftet ud af fattigdom og ind i middelklassen. Hvilken rolle spiller grøn vækst da i lande som Brasilien? Skal økonomisk vækst ofres for grøn omstilling, eller findes der et alternativ?

Brasilien har længe været en udtalt fortaler for grøn omstilling, hvis energipolitik ligeledes har høstet roser for sin imponerende andel af vedvarende energi. I 2012 fik landet hele 82,5 procent af sin elektricitet fra vandkraft. Hvorvidt man kan tale om grøn vækst er dog i sidste ende et spørgsmål om legitimitet. Siden regeringen annoncerede planer om at udvide kapaciteten for vandkraft gennem opførelsen af enorme dæmninger i Amazonas, er kritikken haglet ned over regeringen og de konsortier af multinationale selskaber der opfører vandkraftværkerne.

Dette kontrovers har dannet rammen for en undersøgelse af hvordan legitimitet skabes og fastholdes diskursivt imellem interessenter i den Brasilianske energisektor. Regeringen og andre fortalere for vandkraft har fremhævet behovet for at imødekomme en stigende efterspørgsel på energi, samt hvordan vandkraft er den 'naturlige' løsning givet landets store floder i Amazonas' regnskove. Modstandere har påpeget de sociale og miljømæssige omkostninger ved sådanne dæmningsprojekter, som de hævder vil fælde store dele af regnskovene, udlede skadende metangasser og forflytte tusinder af mennesker fra deres oprindelige bopæl. Ydermere argumenteres der for, at klimaforandringer gør vandkraft ineffektivt, da ekstrem tørke underminerer dæmningernes evne til at levere den lovede energi.

Undersøgelsen har således påvist en sammenhæng mellem interessenters argumentation og den endelige legitimitet af energipolitikken. Ved konsekvent henvisning til energisikkerhed og den eftertragtede økonomiske vækst lykkedes det længe regeringen og koalitionerne af private og statsejede virksomheder at fastlåse debatten i en enten-eller-diskurs: ville man have vandkraft eller ville man undvære energi? Dette studie har vovet den påstand, at danske clean-tech virksomheder med de rette produkter og klimaløsninger kan konstituere en brobyggende diskurs i den fastlåste energidebat i Brasilien og dermed promovere energieffektivitet og grøn vækst som et alternativ til vandkraft.

Hertil kræves en strategi for adressering af de forskellige former for legitimitet der skabes og nedbrydes gennem argumentation i debatten. Analysen trækker derfor på førende litteratur på området, som opstiller tre typer retorik – den strategiske, institutionelle og dialogiske retorik, der henholdsvis giver pragmatisk, kognitiv og moralsk legitimitet. Undersøgelsen har diskuteret og påvist nødvendigheden af potentielt at implementere alle tre retoriske strategier på samme tid for dermed at adoptere den såkaldte *paradox approach*. Kontrasterende krav fra en lang række interessenter byder en virksomhed at bruge flere strategier simultant, selvom

disse måtte sende modstridende signaler. Undersøgelsen er resulteret i udarbejdelsen af *the Response Strategy Framework*, som er en model for 'mapping' af diskurser og de tilhørende retoriske strategier for legitimitet.

Hvorvidt grøn vækst som det kendes i Danmark har en fremtid som et nyt legitimt paradigme for vækst og grøn omstilling i Brasilien kan stadig diskuteres. Til gengæld har den politiske og økonomiske krise anno 2016 åbnet op for alternative diskurser vedrørende energi- og klimaløsninger.

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Table of contents

1. Introduction page 3
    1.1 Topic delimitation page 4

2. Literature review page 5

3. Problem statement page 9

4. Structure & theoretical framing page 9

5. Research design page 10
    5.1 Thematic analysis & code development page 11
    5.2 Data collection page 13

6. Findings page 15
    6.1 Competing discourses page 20

7. The dynamics of institutional repair page 25

8. Green growth – an export perspective page 27
    8.1 The Growth-Sustainability Conundrum page 29

9. Discussion page 35
    9.1 Response strategies page 38
    9.2 Institutional repair & field formation page 44

10. Managerial implications page 46

11. Conclusions page 47

12. Bibliography page 50

13. Appendix page 55

1. Introduction

There is a lack of consensus among scholars on how multinational corporations (MNCs) can implement corporate social responsibility (CSR) to effectively gain and maintain legitimacy, especially for those operating in emerging markets (Hah & Freeman, 2013). Local stakeholders often see MNCs as the source of social and environmental injustice, and so foreign firms continuously encounter CSR crises in their host markets (Jäger & Sathe, 2015). In this thesis the topic of corporate legitimacy is explored with a specific interest in the strategic management of CSR rhetoric.

Faced with increasingly complex stakeholder demands, MNCs often deploy CSR strategies to build legitimacy in order to satisfy stakeholder demands and promote the firm as a socially responsible actor in its host market. Indeed, for corporations, legitimacy is considered one of the most critical issues, especially for MNCs operating globally (Kostova & Zaheer, 1999).

However, it is argued that new forms of legitimacy are required to fully encompass and address the complex nature of stakeholder motivations (Castelló & Lozano, 2011). Thus far, two main views on legitimacy have dominated the literature: One is focused on pragmatic legitimacy with company shareholders and the other on cognitive legitimacy through the adoption of 'taken-for-granted' norms and values corresponding to society's expectations (Suchman, 1995). Both approaches are typically applied as responsive and shortsighted CSR strategies. In this study, however, legitimacy is understood from a discursive perspective; *as a controversy-based process progressing through stakeholders' justification vis-á-vis a public audience* (Patriotta, Gond, & Schultz, 2011, p. 1806).

By analyzing the discursive (de) legitimation of a contested industry (the aforementioned controversy-based process), it is the aim to address the research gap on MNC legitimacy in emerging markets. The Brazilian energy industry provides ample opportunity to investigate the issue of legitimacy in Latin America through the problematic conditions for clean energy production in Brazil's nascent green growth economy. Brazil currently gets around 60 percent of its electricity from hydropower (MME EPE, 2015), a feat achieved by aggressively tapping into the Amazon water resources since the 1970's back when dictatorship was the state of the union.

This impressive use of hydroelectric power comes with a variety of problems. First there is the debate on whether hydropower is in fact clean energy. While solar and wind represent inexhaustible energy sources, water does not, and hydroelectric dams take their toll on the Amazonian ecosystem. Second, there is the issue of energy security. As Brazil suffered the great 'apagao' (blackout) through 2001-2002 caused by unstable rainfall patterns and devastating drought (Hurwitz, 2012), concerns have risen anew that the country will not be able to meet energy demands for the upcoming Olympic Games in 2016. Third, there is the controversy surrounding the indigenous people living in areas affected by the dam constructions. Advocacy groups and NGOs criticize the government for no- or, at best, insufficient consultation with local stakeholders.

In short, the overall sustainability of the Brazilian energy sector and the topic of legitimacy are closely linked. Brazil remains the biggest economy in Latin America – the world's 7th largest – and has been one of the most vocal supporters of the green transition towards a cleaner world economy. The Rousseff government has three major hydropower projects and other green initiatives underway as part of its progressive energy expansion plans (MME, 2013). Still, criticism abound that dependency on scarce water resources in a fragile ecosystem is not much better than dependency on polluting energy sources like oil and coal. Thus, at a macro level, the legitimacy of the national energy policy is threatened.

Enter the multinational corporation. How can a supplier of energy technology hope to satisfy demands from every stakeholder in the scenario described above? The recent and widespread corruption scandal involving the state-owned oil company Petrobras, and its long list of multinational suppliers, has shattered public belief in the system and aggravated the legitimacy crisis of MNCs in the region. Many of the same suppliers charged in the Petrobras 'Lava Jato' (Car Wash) scandal are now being investigated for similar corruption schemes in the government's prestigious hydropower projects – namely the Belo Monte, Santo Antonio and Jirau hydroelectric dams in the Northern and Northwestern parts of Brazil (Stauffer, 2015).

The current business environment in Brazil may not be favorable considering the political and economic crisis. Indeed, the economy is headed further into recession in 2016, but for far-sighted clean-tech companies at least the energy crisis may prove an opportunity to reshape public discourse on green growth going forward.

1.1 Topic delimitation

This thesis is concerned with corporate legitimacy in emerging markets. It is focused on green growth development and the political economy of creating sustainable and inclusive economic growth in Latin America. Within this context, it investigates how multinational corporations can gain legitimacy for exporting energy- and climate technology, or 'clean-tech' for the rest of this paper, to Latin American emerging economies through the proactive adoption of CSR strategies. Hence, by exploring the topic of legitimacy, the aim of this study is to provide an empirically rooted, market-specific analysis of how corporate legitimacy is perceived and constructed among stakeholders in Latin America for clean-tech companies.

The focus of the thesis is the Brazilian market for energy- and climate technologies, for a number of reasons. Brazil remains Latin America's biggest economy, its democracy has been strengthening and the country has long been applauded internationally for its stand against climate change. However, in the context of green growth in Latin America, it is the Brazilian energy sector and the disputed hydropower energy projects in the Amazon that become particularly interesting. Since construction began on three major dam projects, the Jirau, Santo Antonio and Belo Monte hydroelectric dams, a host of stakeholders have publicly debated the legitimacy of these energy projects and their effectiveness vis-á-vis their social, economic and environmental impact.

Thus, the study will research the inherent conflict between the Brazilian government's ambitions of meeting future energy demands mainly through increased capacity in hydropower, and the climatic, social and political consequences of doing so. The large hydropower dam projects in the Amazon have come under scrutiny, as local and international stakeholders criticize the sustainability of Brazil's energy plans. The empirical focus of the study is thus the discursive (de) legitimation of the government's hydropower energy projects and overall approach to energy policy. These hotly contested dam projects involve a multitude of different stakeholders, and will serve as the key focus for data collection on how energy and alternative energy approaches are being contested and defended in the public debate.

To be sure, other Latin American countries, like Mexico and Colombia, are adapting their economies through green growth policies and reform programs. However, the analysis of hydroelectric energy production in the Amazon was by far the most interesting and complex in terms of stakeholder conflicts, government involvement and environmental and economic impact. As far as sustainability and energy policy goes, the corruption-charged socio-economic landscape of Brazil anno 2015-16 was simply expected to provide for the ideal learning case for MNCs. Also, the case of Brazil aptly demonstrates a common challenge faced by many emerging economies – should economic growth be sacrificed to promote sustainability? Given the size of the Brazilian economy and its 'status' as a BRIC nation, the potential impact of flawed or failed energy policies has been a key motivation in analyzing future market trends for clean-tech investment.

Finally, the study focuses on larger multinational corporations (MNCs) dealing in the energy and climate technology industries. This is a consequence of these corporations being subject to significant scrutiny about their roles as non-state actors in Latin American societies, where institutions are often inadequate or non-existent. As the literature review will show, changing societal norms and expectations force corporations to reposition themselves as political actors, which is reflected in management literature on CSR rhetoric.

An important delimitation in this regard is a reflection on an internal versus external organizational focus. Scholars have investigated the rise of multinational enterprises from developing countries (DCMNES) (Doh, Littell, & Quigley, 2015) and their particular governance structure. This study, however, is not per se concerned with the internal managerial and organizational setup of MNCs – regardless of their origin. Rather, it applies an external perspective on the role of MNCs in society vis-á-vis their institutional environment. This is explained further in the literature review below.

2. Literature review

This review synthesizes literature on corporate legitimacy, corporate social responsibility (CSR), corporate social responsibility rhetoric as well as literature on multinational corporations' (MNCs) legitimacy in emerging markets.

There is a lack of theoretical consensus on how multinational corporations (MNCs) can manage legitimacy in emerging markets. Recent literature has thus called for the integration of business ethics and international business research to address this concern (Hah & Freeman, 2013). Emerging markets in Latin America often represent a challenging business environment due to potentially turbulent macroeconomic conditions, political instability, under-developed institutional environments, weak public governance, widespread corruption and a lack of regulatory legislation and enforcement (Jäger & Sathe, 2015).

Zhao et al. propose the void-sophistication theory, which suggests that firms encounter CSR crises because emerging markets struggle with 'institutional voids', which must be filled by the corporation where governments fall short. Additionally, emerging markets are experiencing a process of 'bottom-up sophistication' in which stakeholders become more sophisticated and educated, placing ever more demands on firms (Zhao, Tan, & Park, 2013). As a result, MNCs have shown growing commitment to CSR programs (Khan, Lew, & Park, 2015). Paradoxically, MNCs run the risk of increasingly being perceived as a source of social and environmental problems by local stakeholders, while expected to provide a growing number of services all the same (Zhao, Tan, & Park, 2013); (Matten & Crane, 2005); (Jäger & Sathe, 2015).

In such complex environments like emerging market economies, traditional forms of legitimacy maintenance have proven inadequate as corporations are subjected to widely diverting stakeholder claims and expectations. For example, little has been concluded on stakeholder tactics and how these influence corporate social change. Even if activist groups and NGOs cannot hope to affect change at an individual firm level, they can strive for change at a field level (Den Hond & De Bakker, 2007). This increasingly challenging environment calls for corporations to deliberately and strategically manage their legitimacy.

First, it is imperative to define the concept of legitimacy. For this paper legitimacy is understood as *a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions* (Suchman, 1995, p. 574). Important to this paper are the practical, managerial implications of being considered 'legitimate'. Concepts such as 'corporate citizenship' (Matten & Crane, 2005) are prominent in the literature, and others describe a legitimate organization as one that *enjoys largely unquestioned freedom to pursue its activities* (Parsons, Lacey, & Moffat, 2014, p. 84). Suchman goes on to argue that *legitimate organizations become almost self-replicating, requiring little investment in collective mobilization* to the extent that *legitimacy reflects embeddedness in in a system of institutionalized beliefs and action scripts* (Suchman, 1995, p. 574). In other words, the corporation that acts in accordance with the aforementioned system of norms, values, beliefs and definitions is a legitimate corporation. Whether that excludes the notion of agency in legitimacy maintenance is discussed further below.

Literature typically draws on three fundamental forms of organizational legitimacy – the *pragmatic, cognitive* and *moral* legitimacy. The first conveys the idea that corporations and actors in general may strategically manipulate messages and perceptions to obtain legitimacy (Suchman, 1995); (Castelló & Lozano, 2011). In contrast, cognitive legitimacy *stems mainly from the availability of cultural models that furnish plausible explanations for the organization and its endeavors* (Suchman, 1995, p. 582). This form of legitimacy, which rests on some taken-for-granted norms and values, is a powerful form of legitimacy in that it removes the possibility of dissent: *If alternatives become unthinkable, challenges become impossible, and the legitimated entity becomes unassailable by construction* (Suchman, 1995, p. 583). For example, if clean energy is established as the desired and taken-for-granted model of energy policy then hydroelectric dams become a legitimate means to that end. The third type of legitimacy is moral legitimacy, which *reflects a positive, normative evaluation of the organization and its activities* (Suchman, 1995, p. 579). This more abstract perspective relates to stakeholders' moral evaluation of what is 'right' in a given context.

The pragmatic and cognitive paradigms have arguably had an impact on how management approached legitimacy and corporate social responsibility in foreign markets, dominating corporate CSR rhetoric for years (Palazzo & Scherer, 2006), (Castelló & Lozano, 2011). However, these forms of legitimacy are under pressure due to societies' increasing complexity (Castelló & Lozano, 2011; Zhao, Tan, & Park, 2013). Scholars have since built on Suchman's moral legitimacy in the search of new forms of legitimacy, which adequately address the growing complexities of society and stakeholders (Palazzo & Scherer, 2006); (Castelló & Lozano, 2011); (Castelló & Galang, 2014); (Patriotta, Gond, & Schultz, 2011). Arguing the case for moral legitimacy implies a departure from the economic, utility-driven and *output-oriented* view on corporate social responsibility in which legitimacy can be strategically manipulated by firms, towards a political, communication-driven and *input-oriented* concept of CSR (Suchman, 1995) (Palazzo & Scherer, 2006).

Firms looking to gain legitimacy in a new market may do so through corporate social responsibility rhetoric. Castelló and Lozano identified three types of CSR rhetoric – the *strategic*, *institutional* and *dialectic* rhetoric. The strategic rhetoric is oriented at pragmatic legitimacy, *assuming that corporations have the power to strategically influence their societal context and, thus, manipulate the process of legitimacy ascription* (Castelló & Lozano, 2011, p. 17). This instrumental interpretation of CSR becomes a self-serving rhetoric, in which managers e.g. invest in CSR to maximize profits (Castelló & Lozano, 2011). The institutional rhetoric relates mostly to cognitive legitimacy. This seemingly more abstract rhetoric uses references to institutionalized, or taken-for-granted, societal structures such as sustainability, stakeholder engagement and CSR to prove the validity of the organization (Castelló & Lozano, 2011). Finally, the dialectic rhetoric is linked to moral legitimacy and *is rooted in the practice of dialog between corporations and their stakeholders* (Castelló & Lozano, 2011, p. 20). As moral legitimacy stems from stakeholders' public discussion on what is 'right', firms can gain moral legitimacy by actively partaking in these discussions (Castelló & Lozano, 2011).

The turn towards moral legitimacy implies, as mentioned, adopting an input-oriented perspective on CSR. As corporate affairs increasingly become a public concern, managers and executives must understand these inputs and sources of pressure affecting the organization (Kostova & Zaheer, 1999); (Den Hond & De Bakker, 2007). According to Den Hond and De Bakker, stakeholders and activist groups may seek to achieve field-level change by pursuing two different routes. One of these is to work at a field-level, for example by demanding government legislation, and the other is to strive for change at an organizational level, hoping that corporate social change at an individual firm level will eventually bring about change at a field-level (Den Hond & De Bakker, 2007). This resonates with Suchman's notion that legitimacy is typically understood from either a *strategic* or an *institutional* perspective (Suchman, 1995). The former contemplates legitimacy as a manageable resource; the latter as defined by the *collective structuration of entire fields* (Suchman, 1995, p. 576).

However, this paper seeks to contribute to a discursive debate on legitimacy management, thus taking a middle course between the strategic and institutional approaches. What happens to firms when the entire field upon which their legitimacy depends is challenged? How do corporations and stakeholders justify their positions in either defense- or criticism of the very institutional environment in which they operate? For this study, the notion of 'embedded agency' will be discussed as more balanced perspective on the classic structure-agency debate (Patriotta, Gond, & Schultz, 2011).

The analysis of this thesis draws on the framework by Patriotta et al. to show how stakeholders in the controversy relate to different discourses to (de) legitimize the institutional environment. Here, legitimacy maintenance is understood and applied as *a controversy-based process progressing through stakeholders' justification vis-á-vis a public audience* (Patriotta, Gond, & Schultz, 2011, p. 1806). Based on this it will be analyzed how the controversy in the Brazilian energy sector progressed through meta-level, higher order principles, or 'orders of worth', which *sustain the harmonious arrangement of things and persons in a state of general agreement and to which people most often resort when disputes arise regarding the coherence and justness of a social order* (Patriotta, Gond, & Schultz, 2011, p. 1805). When the common order is challenged, stakeholders must provide justification through discourses and rhetoric based on the available orders of worth. Identifying the orders of worth in the case of Brazil's energy policy will show how the legitimacy of hydroelectric power generation is either challenged or defended.

The paper concludes by comparing different response strategies that MNCs and smaller corporations alike may implement to appropriately respond to legitimacy threats. Scherer et al. argue that a growing societal awareness of business ethics and sustainability motivates firms to engage with the 'sustainable development' (SD) discourse (Scherer, Palazzo, & Seidl, 2013). In a globalized society where markets, communication and stakeholders grow increasingly complex, the *power to address issues of public concern, to define standards for behavior, and to determine the conditions under which SD can unfold is shifting from state institutions to private actors (e.g. business firms) and civil society actors (e.g. NGOs and social movements)* (Scherer, Palazzo, & Seidl, 2013, p. 260).

With this 'newfound power' at hand, firms are left with three different response strategies in a sustainable development context: the *one-best-way approach*, the *contingency approach* and the *paradox approach*. The first assumes that there is a one-size-fits-all approach to any kind of legitimacy test. The second approach claims there is a one-best-way response for *each* situation. Here, the appropriate rhetorical strategy depends on the context. Although the 'contingency approach' is more nuanced than the 'one-best-way', both have considerable limitations in responding to a hyper complex environment where there are more than just one institutional environment (Scherer, Palazzo, & Seidl, 2013). The 'paradox approach' is thus a direct response to the shortcomings of the former two and claims that an organization should potentially employ all three rhetorical strategies at the same time to accommodate competing demands. Using this strategy, the organization *is simultaneously prepared to defend its own position by trying to impose its views on its critics (strategic manipulation), to uncritically accept the views of its critics (isomorphic adaptation), and also to engage in an honest, open discourse about what course to take (moral reasoning)* (Scherer, Palazzo, & Seidl, 2013, p. 274). Naturally, employing all three rhetorical strategies simultaneously creates contradictions. Firms trying to manage all three legitimacy strategies are confronted with *the paradox of meeting opposing structural demands* (Scherer, Palazzo, & Seidl, 2013, p. 275). As it will be shown, this is evident in the case of the Brazilian energy sector.

Scherer et al. present their theory in line with previous research on corporate legitimacy maintenance (Suchman, 1995); (Castelló & Lozano, 2011); (Palazzo & Scherer, 2006); (Patriotta, Gond, & Schultz, 2011). The three approaches to response strategies are not unlike the three types of legitimacy-granting CSR rhetoric proposed by Castelló and Lozano, as it has been discussed in the above. However, Scherer et al. make a point of criticizing the continued theoretical separation of different legitimacy-granting strategies, lamenting that the academic discussion *gives the impression that corporations have to choose one general legitimacy strategy from the three options* (Scherer, Palazzo, & Seidl, 2013, p. 261).

Plenty has been written on corporate legitimacy and legitimacy-granting strategies, while significantly less has been investigated on corporate legitimacy in Latin American emerging markets specifically. Most literature on legitimacy, both theoretical and empirical, has focused on organizational legitimacy while the concept of 'stakeholder legitimacy' is less explored (Santana, 2011). Little to nothing has been researched on legitimacy from a stakeholder perspective in relation to the nascent green growth economies in developing and emerging markets in Latin America.

Most literature on emerging markets thus far has focused on either a particular industry or geographical region. The mining and extractive industries draw considerable attention, and an 'obsession' with China and the Asian economies has dominated the literature as well (Jäger & Sathe, 2015). For Latin America, Joutsenvirta and Vaara provide a case study of a contested investment in Latin America (Joutsenvirta & Vaara, 2015), and Barros discusses the 'tools of legitimacy' in the case of Petrobras' (Brazil's state-owned oil company) corporate blog vis-á-vis the media landscape (Barros, 2014). Also, at an industry level it is a challenge to find studies on the Amazon region as a resource, although Da Silva Soito and Freitas investigate the potential for expanding hydroelectric capacity in Brazil in a sustainable way but do so from a strictly technical and market point of view (Da Silva Soito & Freitas, 2011).

In other words, there is a need to integrate literature on MNC legitimacy with studies on the feasibility of different energy policies adopted thus far in Latin America, as these exist largely in separation from one another. The intended academic contribution of this thesis is to provide a deepened understanding of how legitimacy struggles and justification take place in a Latin American context and help shape the formation of new institutional fields. By adopting a holistic perspective on legitimacy in the Brazilian energy sector this study contributes with practical recommendations for identifying appropriate response strategies for international clean-tech corporations looking to engage the energy markets in Latin America.

3. Problem statement

How can international clean-tech corporations effectively build legitimacy in the Brazilian energy sector? What is the opportunity to institutionalize green growth in Latin America?

This main research question is formulated to ensure the practical and academic contributions of the thesis. It will be analyzed how legitimacy is constructed between stakeholders in the disputed Brazilian energy sector, with the aim to discuss legitimacy-granting response strategies for foreign multinationals, focusing on the Danish clean-tech industries. Based on this, the wider applicability of the findings is discussed to evaluate green growth as a potentially new growth paradigm in Brazil as well as Latin America as a whole.

4. Structure & theoretical framing

The research is divided into three main parts. The first is an *investigation* of how legitimacy is constructed between stakeholders in the Brazilian energy sector. The second is a comparative *analysis* of the policy frameworks and the overall market conditions for promoting green growth in both Brazil and Denmark. The third part is a *discussion* of potential response strategies corporations may use to gain and maintain legitimacy within this context, as well as a broader discussion on green growth as a new legitimate institutional field.

The investigation is framed mainly through the theory on organizational legitimacy by Mark Suchman from 1995. Suchman's three types of legitimacy have facilitated a wealth of additional research on the subject and provided the basis for exploring new forms of legitimacy through corporate social responsibility rhetoric. The pragmatic, cognitive and moral legitimacy will be useful in understanding at a very basic level how legitimacy appears in the controversy investigated.

The findings of the investigation are thus first presented through the perspective of organizational legitimacy and CSR rhetoric. The framework of Patriotta et al. on stakeholder justification and mobilization of orders of worth is used to better understand the implications the findings have on the institutional environments and the process of legitimacy repair. The interplay between relevant stakeholder groups and the 'common orders' they invoke in their justification is analyzed to comprehend the correlation between stakeholder positions and their vested interests.

The findings then provide the basis for analyzing market opportunities and challenges in Brazil. The analysis compares the Danish climate- and energy technology industries with the current policy framework for renewable energy production in Brazil. Taking an export perspective on green growth, the analysis identifies key industrial, political, economic and regulatory barriers as well as opportunities for Danish firms looking to strategically position themselves in the market.

A discussion of the paper's findings is performed to identify possible strategic approaches for Danish firms looking to address the market. This discussion is framed through the work of Scherer et al., who have researched various response strategies for corporations seeking to repair legitimacy. Foreign multinationals contemplating the market may not need to repair their own legitimacy per se, yet in the case of Brazil they will need to repair the legitimacy of their industry and the overall reputation crisis of MNCs in the region. For this Scherer et al. propose three different response strategies, the one-best-way approach, the contingency approach and the paradox approach. These will be applied to evaluate the competing discourses presented in the findings against the market conditions for clean energy, to discuss how Danish clean-tech firms may strategically engage the market through the three rhetorical strategies presented by Castelló and Lozano.

Finally, the discussion debates the merits of green growth from an intercultural perspective. The purpose is to discuss whether a green growth rhetorical strategy may serve as a bridging discourse across political, industrial and cultural barriers, when competing discourses are gridlocked. For this Van Bommel and Spicer's theory on hegemonic discourses help frame the discussion of how new institutional fields are established under conditions of dominant discourses in the public debate.

5. Research design

The challenge in the research design has been to explore the case for institutionalizing green growth in Latin America, as discussed in the literature review, without compromising the nature of the methodology itself. As Michael Quinn Patton puts it, *qualitative methods are particularly oriented toward exploration, discovery and inductive logic* (Patton, 1990, p. 44). However, this research design and its methodology will only be inductive to the extent that this author succeeds in *making sense of the situation without imposing preexisting expectations on the phenomenon or setting under study* (Patton, 1990, p. 44). Hence, exploring the case for green growth as a new institutional field through CSR strategies in Latin America presents the imminent threat of foregoing this fundamental research objectivity, described by Patton above.

Nonetheless, that is precisely the research design applied for this thesis: an explorative case study of the energy industry in Brazil. The very purpose of the thesis is to investigate the problematic economic, societal and environmental conditions for multinational corporations and thus provide insights to help guide strategy in the region. This relies heavily on the assumption that 1) there is a problem to be solved in Brazil and 2) there is a better way of solving it. In short, the challenge is to not let this quest for solutions interfere with the objectivity of data management.

The thesis and its research design then takes the form of applied research, where the purpose of the research is *to contribute knowledge that will help people understand the nature of a problem so that human beings can more effectively control their environment* (Patton, 1990, p. 153). In this regard, the research design as 'applied research' is in direct harmony with the purpose of this thesis, as *the purpose of applied research, then, is to generate potential solutions to human and societal problems* (Patton, 1990, p. 154). Achieving the desired objectivity in this process is key to the end result and will be criticized accordingly in the conclusions.

If the purpose is *the controlling force in research* (Patton, 1990, p. 150), this has implications for the overall structuring of the thesis, the data collection and the presentation of findings. The data collection and analysis is performed with the study's problem statement in mind as a guiding line, yet it is conducted in as open-ended an inquiry as possible. The problem statement reflects the purpose and nature of the thesis and is in accord with the types of research questions typically asked in applied research (Patton, 1990). The literature review has been performed in two parts. A short, preliminary review was conducted at an early stage to better understand the topic, before embarking on the analytic journey. However, the full and final literature review was done *after* data collection was completed. Again, this was prioritized to ensure that previous research would not distort objectivity in the data collection, but rather spark inspiration at an early stage. Finally, as the applied research tries to provide solutions to a problem, the thesis' analysis and discussion are distilled into the section on 'managerial recommendations'.

A key tradeoff in the research design has been to weigh and balance the in-depth character of the analysis with the scope of it. Under conditions of limited resources, it has been necessary to consider the relative relevance of telling an in-depth story of a few people or a broader story of many (Patton, 1990). Sustainability in Latin America is, in itself, evidently a much too open topic, especially if the intention is to provide some practical recommendations for strategy. On the other hand, choosing a case study at a single point in time, based perhaps on a single firm did not seem adequate for what is indeed a complex energy industry. Rather, this must be properly represented by data over a period of time in order to fully comprehend the dynamics and stakeholders within.

The question of breadth versus depth eventually led to thematic analysis as the methodology of the paper, recognizing the need to combine a large and representative data bulk with in-depth, qualitative information.

5.1 Thematic analysis & code development

Thematic analysis and code development, as put forward by Richard Boyatzis in 1998, has been chosen as the methodology of the thesis. As mentioned, it is the result of the need to bridge the gap between qualitative and quantitative information. This is precisely what Boyatzis argues is made possible by thematic analysis (Boyatzis, 1998). For this paper, a short-term snapshot of the energy debate in Brazil would be insufficient to cover the changing landscape of the energy industry and its stakeholders' positions, and so a large data collection was required to cover the topic. At the same time, purely quantitative data would not convey the complexity of the topic. Simply looking for the number of stakeholders being for or against hydropower; or comparing the number of hydropower projects under construction to that of other renewable energy projects is of no use to companies looking for the how and why of things.

In essence, thematic analysis is *a process for encoding qualitative information* (Boyatzis, 1998, p. 4). In this context, it implies categorizing and organizing qualitative information, or raw data, into recurrent patterns of information. These patterns are called themes. Themes are generated inductively by diving headfirst into the raw data collected to see what patterns of information stand out. Each piece of raw information is encoded and organized in what may be called the 'codebook' (see Appendix 1) (Boyatzis, 1998). Some three hundred individual pieces of raw data have been encoded and categorized into themes in order to tell the story of legitimacy struggles in Brazil. While that number might appear somewhat limited, considerations on sampling and overall data collection are elaborated in section 5.2 below.

The first analytical objective was thus to identify patterns in the seemingly random, raw data. *A theme is a pattern found in the information that at minimum describes and organizes the possible observations and at maximum interprets aspects of the phenomenon* (Boyatzis, 1998, p. vii). For example, a pattern was identified in how stakeholders and publics criticize the energy output of the hydropower dams. Actual output per dam will not match up to the installed maximum capacity mainly due to seasonal rainfall patterns and increased drought, critics argue. This pattern was labeled the 'energy efficiency' theme. Themes can be identified at the manifest and latent levels of analysis. The manifest level is when clear and explicit information appears in the data, whereas latent information is found reading 'between the lines of text'. Identifying latent themes may be critical to uncover the richness of the data processed (Boyatzis, 1998).

The process of encoding qualitative information entails finding meaning in raw data, whether manifest or latent. This requires an explicit 'code' – or a model that organizes the encoded information into themes with descriptions of these. *A good code may emerge from one or more original themes. Once it is developed as a code, it becomes the form of the original themes that the researcher uses throughout his or her inquiry. It is usable in the analysis, interpretation, and presentation of the research* (Boyatzis, 1998, p. x). Accordingly, the code developed for this paper's analysis will be a key part in presenting the findings and interpreting the phenomenon being studied. It is structured to include five key elements, which make up a good code (Boyatzis, 1998): first a label, or a name, for the theme presented and second, a short definition of what the theme concerns. The third and fourth elements are a description of how to identify when the theme occurs and a description of any special qualifications or exclusions to the identification of the theme. Finally, at least two examples or more are included for each theme to help the identification hereof.

Themes and thematic codes are developed inductively from the data sample, thus taking the inductive, and, specifically, data-driven, approach (Boyatzis, 1998). It has been a priority throughout to work directly from raw data collected in order to enhance the appreciation of the information obtained. Doing so should eliminate any potential contaminating bias, compared to using data processed by previous researchers in a more theory-driven code. Thus, being close to the raw information furthers the potential applicability of the findings for future research – ideally resulting in a *high interrater reliability* of the code produced here (Boyatzis, 1998, p. 30). However, media bias will pose a challenge in this context, which is addressed in the section below.

A critical issue in thematic analysis concerns the author's personal projections. This implies that the author of the study may be biased by ideology and thus be tempted to project one's own *values or conceptualization* (Boyatzis, 1998, p. 13) onto the phenomenon being studied. For example, the purpose of investigating the opportunity for alternative energy sources in this study may be motivated by the author's conviction that a transition towards a cleaner world economy is desirable, not accounting in detail for e.g. the potential national economic or the geopolitical consequences of such a transition. Preventing, or at least lessening, this *contamination of projection* (Boyatzis, 1998, p. 30) has for this paper been intended through an intent focus on developing an explicit code as close to the raw data as possible, establishing consistency of judgment and thus reliability of the findings.

Epistemology

The consistency of judgment is important to the understanding of how knowledge is generated and understood. For this paper, qualitative information is regarded through the interpretive social science paradigm (Boyatzis, 1998). As mentioned in the beginning of section 5, thematic analysis has been applied to bridge the gap between qualitative and quantitative information. However, Boyatzis points out that *converting themes into codes and then counting presence, frequency, or intensity does not in and of itself create a link between qualitative and quantitative methods* (Boyatzis, 1998, p. 145). The method and the findings require articulation before a positivist social scientist may engage in quantitative testing, thus creating the link.

Regardless of epistemological standpoint, the codebook developed provides the researcher with the *ability to communicate with others (i.e. to engage in social construction)* (Boyatzis, 1998, p. 146). In keeping with the aforementioned purpose of this research, which is to identify solutions to a problem, the communicative aspect of the methodology becomes key in transferring the findings for future testing and reflection. Indeed, thematic analysis allows the interpretive social scientist's social construction of meaning *to be articulated or packaged in such a way (with reliability as consistency of judgment) that descriptions of social "facts" or observations seem to emerge* (Boyatzis, 1998, p. 145). Social construction is thus the result and central element of this discussion. Suchman claims that *legitimacy is socially constructed in that it reflects a congruence between the behaviors of the legitimated entity and the shared (or assumedly shared) beliefs of some social group* (Suchman, 1995, p. 574). Discussing the (de) legitimated entity – hydropower – and the social group – its stakeholders – is one of the key contributions of this thesis to the social construction of legitimacy in the Brazilian energy sector.

5.2 Data collection

Careful thought has been given to the data collection method, in terms of acknowledging the limited scope of the paper. Sustainability and CSR in Brazil is a broad topic indeed, even with the focus applied to the energy sector. Thorough deliberations on defining the unit of analysis and unit of coding have been imperative in the data collection process. In this case, as with most cases of social science research, the unit of coding is different from the unit of analysis (Boyatzis, 1998). The discourses on the controversy surrounding hydroelectric power generation are used as the unit of coding, but the unit of analysis is the overall energy industry. Defining the unit of analysis is thus important, because it both affects and is affected by the type of information collected (Boyatzis, 1998).

First, 'across-the-board' data was collected from open-ended searches on the topic, from any potential media source or newspaper. This was to provide an overview of the scope of coverage, since the issue first started gaining traction in the media. Using various combinations of a set of keywords relating to the topic, the Factiva database returned in total 222 useful articles, press releases and other online news pieces relating to the topic. These were carefully selected for analysis from a bulk of over six hundred news articles. Adding the local, Brazilian, media bulk, NGO articles and government and MNC releases the grand total came to 321 media articles that were used for analysis and the coding process.

The query was done using various different search combinations – each involving at least three or more of the following keywords: 'Amazon', 'energy', 'clean energy', 'renewable energy', 'Brazil' 'environment', 'deforestation', 'energy policy', 'hydropower', 'scandal', 'Norte Energia', 'Odebrecht', 'Belo Monte', 'Jirau' and 'Santo Antonio'. For example, the query 'Amazon', 'energy' and 'Jirau' yielded 85 articles, of which 50 were selected for analysis. The criterion for the selection of articles was to only use articles referring to the hydropower industry in Brazil. Broad searches on the environment or on hydropower at a global scale were avoided. The initial estimated search criteria of a five-year period proved accurate and demonstrated media coverage ranging from late 2010 to the current date of writing – March 2016. Data was collected until the first month in 2016 prior to subsequent analysis.

This initial search showed coverage almost exclusively by international press; major news papers such as the New York Times, the Economist, Reuters, Agence France Presse, Washington Post, Business News America, as well as industry-specific media covering the topic of energy and the environment like Energy Monitor Worldwide, Greenwire News Agency, Engineering News-Record and ReCharge News, to name a few.

For the same reason, local media, i.e. Brazilian newspapers, were searched to identify the most consistent and vocal national voices on the subject. This was an important factor to ensure quality and in-depth data representation for the analysis. A comprehensive analysis based entirely on media coverage from the international community would not be sufficiently representative of Brazilian stakeholders' positions in the controversy over a longer period of time. Local and frequent news coverage has been equally imperative to achieve this.

Thus, the analysis includes coverage by Brazilian newspapers such as Folha de Sao Paulo, Valor Economico and Reporter Brasil. These have been the most consistent in their coverage during the timeframe of focus in the thesis. Notably, Folha de Sao Paulo and Reporter Brasil were useful in providing in-depth investigations of the topic through extensive reporting. Still, press coverage has considerable limitations as a source of data, as newspapers, online media sites and blogs may contaminate communication based on their respective editorial positions and political leanings. For the same reason, I include the media as a stakeholder in its own right and criticize it accordingly to account for any potential bias. In total, 53 different media sources were found covering the hydropower debate in Brazil and the current socio-political climate surrounding it. The full list is found in Appendix 3.

Finally, searches were made for statements and press releases directly from official ministry websites, the involved multinationals and the NGO's as a means to circumvent media influence. The intent was to allow for the collection of more 'direct' data, free of any potential media context or framing. However, only the NGO's yielded much information on the controversy itself. Searches on the MNC consortia's press portals mostly concerned technical specifications and announcements of new construction. Official ministry channels yielded much the same result, providing mostly content related to new policy initiatives and investments, and not commenting on the controversy itself. In spite of a limited result, it is argued that this specific query has been an important part in securing an exhaustive data collection.

As a guiding protocol for data collection this triangulation of data sourcing (Patton, 1990), which combines broad, international media coverage; targeted, local newspapers and direct statements and press releases from MNCs, NGOs and more, is applied to ensure an exhaustive data collection that positively influences the subsequent analysis. A local, global and transnational media representation has been imperative to ensure that an exhaustive analysis can be performed. Due to limited resources, it was not possible to personally conduct interviews with local stakeholders across linguistic and geographical barriers. Instead, triangulating the main media sources of data was prioritized to collect as broad and representative a data bulk as possible, within the realistic scope of the project.

In the previous section on research design the tradeoff between breadth vs. depth has been discussed. Again, the conditions of limited resources and time apply to the collection and management of data. There is no rule of thumb for the size of the data bulk collected, as this *depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resource* (Patton, 1990, p. 184). Therefore, the data collection was guided by a desire to understand in-depth the arguments and positions of the key stakeholders in the controversy. However, the purpose of investigating how different stakeholders legitimize or de-legitimize hydroelectric power generation called for more breadth, which can be *especially helpful in exploring a phenomenon and trying to document diversity or understand variation* (Patton, 1990, p. 184).

Eventually, the size of the data bulk included for coding was determined by reaching a point of data saturation. Data was gathered until no new information emerged from the latest sample collected, leaving the new data redundant (Patton, 1990, p. 186). Redundancy has thus been the main criteria for determining the scope of data collection. Still, the design was left *flexible and emergent* (Patton, 1990, p. 186), allowing for the addition of more data to the sample as the research progressed.

6. Findings

In coding the data bulk introduced above a total of 11 themes were identified. These are presented in the full code further below, providing a definition, explanation and examples for each. The themes were intuitively categorized into two types: main themes and secondary themes. The main themes are the critical discourses in understanding the controversy regarding hydroelectric power generation in Brazil. Secondary themes are important in understanding the full depth of the topic, yet these are typically subordinate or related to the main themes and not constitutive discourses in the controversy. For example, corruption, within the theme 'transparency', is a severe national issue in Brazil, but it is not essential in the (de) legitimation of hydropower as an energy source.

The main themes, of which there are five, are classified into three categories of legitimacy: a pragmatic, an environmental and a moral perspective on hydropower legitimacy. It is through these three perspectives that the story of the hydropower controversy is best understood.

First, within the pragmatic perspective on legitimacy the following main themes are found: 'development', 'energy security' and 'energy efficiency'. These concern discourses on the desire to create development and economic growth, the necessity of meeting a growing domestic energy demand and the role of hydroelectric dams in delivering this energy and economic prosperity. For example, the themes 'energy security' and 'energy efficiency' are particularly central to the pragmatic legitimacy of hydropower. Proponents of hydropower will argue that dam constructions are crucial to meeting energy demand over the next decade, while opponents argue that hydroelectric dams are no guarantee of meeting this demand. The 11,233 MW Belo Monte complex will only generate about forty percent of its full capacity annually due to unstable rainfall patterns and drought, critics say. This criticism clashes with the pragmatic, energy-is-needed-now discourse put forward by most proponents of hydropower.

Second, the environmental perspective on legitimacy incorporates the main theme 'environmental sustainability'. This category concerns a multitude of discourses on the environmental impact of building hydroelectric dam complexes in the Amazon ecosystem, where the tributaries of the Amazon, like the Madeira and Xingu rivers, are harvested for energy. Proponents of hydropower represented in this theme claim modern day dams cause much less harm to the natural environment, than did older ones. In particular, they refer to run-of-the-river designs, which use the natural inclination of the landscape to harvest water flows. This drastically reduces the need to flood large reservoirs. In turn, opponents say the impact of hydroelectric dams cause irreversible damage to the world's vital ecosystem, regardless of modern technology. Two dams the size of Belo Monte produce annual greenhouse gas emissions equivalent to that of the city of Sao Paulo. Considering the flooding, deforestation and emission levels from methane reservoirs, hydropower cannot be considered clean energy, critics argue.

Third, the moral perspective on legitimacy includes the main theme 'social sustainability'. This perspective concerns stakeholder arguments on the social and civic impact of hydroelectric dams, as wells as an overall moral evaluation of hydropower as an energy policy. The key criticism here is that hydropower dams destroy the livelihoods of indigenous communities and other Brazilian citizens living in areas affected by construction. Dams alter river flows and water quality on which native Brazilians depend for a living, and people are forced to relocate to make way for the construction sites. Additionally, a large influx of migrant workers adds social pressure and creates a sense of 'winners and losers' between workers and people not benefitting economically from the dams. Proponents of hydropower say modern dams do not in reality cause much uprooting due to the smaller reservoir sizes and new solutions to protect the rivers' fish populations. They add that construction consortia have allocated billions of dollars in social and environmental compensation programs. Opponents counter that local populations have not been adequately consulted on the social and environmental impacts, according to official requirements. At construction sites, a state of civil unrest ensued license approvals for dams, which ignored key issues in the environmental and social impact assessments.

Table 1. Thematic analysis and code development

THEMATIC ANALYSIS & CODE DEVELOPMENT			
Theme	Definition	Description + special conditions or exclusions	Examples
Development	Concerns the government's plans to create economic growth and development	Any mention of energy and, particularly, hydropower as a means or necessity to foster development and economic growth. It also includes discourses on economic mobility as a result of construction jobs at dam sites. It excludes discourses particular to meeting energy demand (see instead 'energy security').	"Without electricity we will go nowhere" (Joao Pimentel, Norte Energia); "In order for the Brazilian economy to grow around 5 per cent per year in the next few years, Brazil needs to add 5,000 megawatts per year to its installed capacity." (Mauricio Tolmasquim, Energy Research Agency); "Belo Monte is one of the flagship projects of Ms Rousseff's government, a keystone of her growth acceleration programme, an ambitious plan to build hundreds of billions of dollars of new infrastructure projects to sustain the rise of Brazil's economy" (Financial Times)
Energy security	Concerns the issue of securing energy supply for a growing demand	Any mention of the necessity to produce energy to meet demand, regardless of its type or environmental impact. This includes discourses on hydropower as a vital energy source and the justification of using fossil fuels as short-term solution. It relates in particular to the vital role of hydropower in meeting energy	"In the long term we cannot really expect to keep growing as a country without these dams" (Adriano Pires, Brazilian Infrastructure Institute); "Brazil needs two hydroelectric dams like this to provide power each and every year" (Jose Gomes, ESBR); "I was already saying, at that time, that Brazil had only one alternative, Belo Monte or nuclear energy. Now both have to be developed"

		demand.	(Antonio Muni Lopez, Eletrobras)
Energy efficiency	Concerns the issue of installed capacity vs. the actual energy output	Mentions of the expected capability of hydropower to actually deliver the energy required to meet current and future demand. This includes debates on the impact of seasonal rainfall-patterns (dry-season) and the capacity of run-of-the-river turbines.	"The new run-of-river dams won't produce at top levels all year round so you'll need gas power" (Adriano Pires, Brazilian Infrastructure Institute); "The capacity to store energy - that is, water - is now small for the size of the system" (Mauricio Tolmasquim, Energy Research Agency); "Belo Monte always had an Achilles heel: its low energy-generating capacity" (Flávio Miguez, Brazilian Dam Committee)
Economic viability	Concerns the potentially unsustainable economic model of hydroelectric power generation	Mentions of how low power generation will not generate the necessary profits from energy production to repay the BNDES. This includes discourses on how budget overruns threaten the economic viability, but excludes discourses relating this to corruption (see instead 'transparency').	"As a result of climate change, the likely reductions in river flow in the Xingu will undermine Belo Monte's financial health" (Carlos Rittl, WWF Brazil); "Furthermore, Norte Energia is a state-owned company, not a private institution; therefore adding insult to injury, the burden of increased costs will fall on the taxpayers" (Council on Hemispheric Affairs);
Environmental sustainability	Concerns the environmental impact on the Amazon ecosystem	Any mention of deforestation, the impact of flooding and methane emissions vs. CO2 emissions on the environment. This includes discourses debating whether hydro energy is clean energy. It excludes discourses on the impact on Amerindians affected by dam construction (see instead 'social sustainability').	"Dams like these are not green energy or clean energy" (Philip Fearnside, National Institute for Amazon Research); "The investment to build these plants is very high, and they are to be put in a region which is an icon for environmental preservation, the Amazon... so that has worldwide repercussions" (Paulo Domingues, Ministry of Mines and Energy); "The real deforestation is maybe zero" (Gil Maranhao, ESBR)
Social sustainability	Concerns the violations of human right and inadequate consulting with indigenous communities	Mentions of the impact on livelihood of indigenous tribes affected by the hydropower dam construction projects. It includes discourses on military-style government and the dialogue and communication between policy planners and indigenous communities. It excludes how construction consortia compensate affected communities for dam impact (see instead 'corporate imperialism').	"The Brazilian government should undertake a process of 'free, prior, informed, in a good faith, and culturally appropriate' consultations and consent with the indigenous people" (EarthRights International); "There is no better energy in the world. Nobody will be removed from where they are living or be in anyway inconvenienced. There is a lot of misinformation that is deliberately circulated by people," (Edison Lobão, Energy Minister); "They [the government] want to repress any demonstration that seeks to defend our rights. This is a scandal and is the sort of thing you see in a dictatorship" (Antônia Melo da Silva, Xingo Vivo)
Corporate imperialism	Concerns MNCs' handling of compensation for affected communities	Mentions of construction consortia's suppression of indigenous rights; forceful eviction, bribery programs, strong-armed negotiation tactics. It includes discourses on the ignorance of social and economic compensation. It relates specifically to the consortia's compensation programs, and it excludes how a dam in itself impacts livelihoods (see instead 'social sustainability').	"I went to town for a doctor's check-up and when I returned, my house had been demolished" (Altamira citizen); "The relocation of families is among the Belo Monte compensatory actions facing the longest delays" (Folha de Sao Paulo)
Policy & planning	Concerns the effects of policy and regulatory planning on the energy sector	Any mention of the impact policy and government planning has on the energy matrix; mentions of business influence on policy. It includes discourses on development and economic growth vs. sustainability, but it excludes discourses on the potential and initiatives for green growth (see instead 'green growth').	"The government is not adopting policies and financing systems that allow the full realization of the country's abundant renewable energy resources" (Getulio Vargas Foundation); "The government tends to consider hydroelectric projects one-by-one, which is inefficient when considering all economical, social and environmental aspects" (Denise Hamú, WWF Brazil); "Worse yet, Brazilian energy spending is

			heavily biased toward building large new projects rather than promoting conservation, small-scale innovation or decentralized generation" (Brazilian Infrastructure Institute); "It's a right-wing philosophy: you have to grow the economy in order to redistribute wealth. This is what is changing our environmental laws, and it's dirty business" (Verena Glass, Reporter Brasil)
Transparency	Concerns the process of auctioning and approving a hydropower project to meet environmental, economic and social standards	Mentions of the process of auctioning and approving the dam projects. This includes discourses on corrupted auctioning processes, contract awarding and investigations into alleged kickback schemes between politicians and construction firms. It excludes discourses on the Petrobras corruption case specifically.	"Since then, two IBAMA presidents have stepped down after also facing pressure from the Ministry of Mines and Energy to approve licenses for the contentious and highprofile Santo Antonio, Jirau, and Belo Monte dams" (NACLA Report on the Americas); "Dalton Avancini, ex-president of Camargo Correa, testified to public prosecutors that his company paid R$30 million (US$9.6 million) to President Dilma Rousseff's Workers Party (PT) and to Brazil's largest political party, the PMDB, part of the government's ruling coalition, in exchange for its 15% share of the construction contract for Belo Monte" (Amazon Watch)
Alternative energy solutions	Concerns the advocacy of alternative solutions to the current energy policy	Mention of alternative energy sources being discussed as an alternative to hydropower. This includes discourses de-legitimizing hydropower by stating the cost-competitiveness of e.g. wind and solar. This excludes arguments on environmental impact (see instead 'environmental sustainability').	"We have big wind farms ready to operate in the Northeastern, but they still cannot be connected to the grid for lack of transmission lines" (Adriano Pires, Brazilian Infrastructure Institute); "The choice between reservoirs and gas is a false one. Reducing transmission losses and modernising older hydropower plants would cut the need for both" (Célio Bermann, University of Sao Paulo); "The difficulty in covering power demand in the past two years, caused by a fall in water levels in hydropower reservoirs, creates a need to reorientate energy policy towards a long-term matrix that takes into consideration the complementarity of different sources" (Energy Monitor Worldwide)
Green growth	Concerns the regulatory and market drivers for green growth	Mentions of policy initiatives for green growth. This includes discourses on Brazil's potential for economic growth combined with high environmental standards. It excludes discourses promoting specific alternative energy sources (see instead 'alternative energy sources').	"Economic growth is not contrary to the best environmental practices" (Dilma Rousseff, President); "More than any other major developing economy, Brazil has the natural resources to develop a low carbon energy system in tandem with rapid economic growth" (Energy Economist); "But there is a favourable expectation in the market that a "new order in energy contracting" will be implemented, in which not just the price per MWh is taken into consideration in the auctions, but above all the importance of the source, its place in the mix and its complementarity with other sources" (Energy Monitor Worldwide)

The five main themes represent the key discourses in the controversy. Two ‘camps’ of stakeholders have emerged from the data collection, which are stakeholders predominantly pro or anti hydroelectric power generation. Naturally, some stakeholders, e.g. industry experts, share balanced views on the controversy by being able to find both pros and cons of hydropower and weighing these objectively. However, the analytical purpose of identifying strategy solutions arises from an apparent gridlock in competing discourses, which all roughly fall within these two camps.

In this thesis, it will be argued that there is a fourth perspective missing from the *main* debate. The data collection shows no overall 'alternative solution' perspective on hydropower legitimacy, in which key stakeholders debate an alternative energy solution to the hydro-heavy policy adopted so far. To be sure, there are discourses sporadically triumphing for example wind or solar power in the data collected between late 2010 and early 2016 (see Appendix 1), which is clear from the theme 'alternative energy solutions'. However, it is a paradox that such discourses are largely absent until 2015, and certainly do not play a central role in the debate. In other words, the public debate on energy in Brazil was gridlocked for four years in the same competing discourses within the pragmatic, the environmental and the moral perspectives. It is telling that themes such as 'alternative energy solutions', 'green growth' and 'policy and planning' were categorized as secondary in defining the controversy. The debate simply centered on energy security, the environment and the people – but not on how to meet energy demand while minimizing the social and environmental impacts.

The findings of this thesis are interesting when held against previous research on legitimacy. Mark Suchman described the three most common forms of legitimacy: pragmatic, cognitive and moral legitimacy (Suchman, 1995). Castelló and Lozano identified three types of corporate rhetoric, which refers to each type of legitimacy respectively: the strategic, the institutional and the dialectic (Castelló & Lozano, 2011) rhetoric. The argument is that corporations may apply the dialectic rhetoric to achieve moral legitimacy as the 'new' form of legitimacy through dialogue with their stakeholders (Castelló & Lozano, 2011). First, there appears to be a congruence at macro level between the themes identified in the data and Suchman's three types of legitimacy:

The pragmatic perspective on hydropower corresponds to pragmatic legitimacy, which *boils down to a sort of exchange legitimacy – support for an organizational policy based on that policy's expected value to a particular set of constituents* (Suchman, 1995, p. 578). In other words, hydropower may be accepted as a legitimate source of energy, in spite of any social or environmental impact, as long as it satisfies Brazil's growing energy demand.

The environmental perspective corresponds to cognitive legitimacy, which is understood according to the 'taken-for-granted' branch of cognitive legitimacy. According to this view, legitimacy rests on a given set of values; taken-for-granted norms and behaviors that define what is legitimate and impedes the possibility of brooking dissent (Suchman, 1995). The environmental perspective has shown how proponents of hydropower consistently pointed to the Amazon tributaries to produce readily available, cheap and clean energy. It was long taken for granted that the Amazon ecosystem was a resource to be used, and that harvesting the rivers was a desirable policy, compared to mining for coal or drilling for oil.

The moral perspective corresponds to moral legitimacy. Here, legitimacy of hydropower would not so much rely on judgments as to whether it benefits constituents in terms of energy supply, job creation or economic growth. Rather, judgments as to whether hydropower is simply 'the right thing to do' define legitimacy and *usually reflect beliefs about whether the activity effectively promotes societal welfare, as defined by the audience's socially constructed value system* (Suchman, 1995, p. 579). Examples of this are found in the data, where moral-perspective discourses evaluate hydropower based on a holistic assessment of its capacity to meet energy demand and protect the environment and its people all at once.

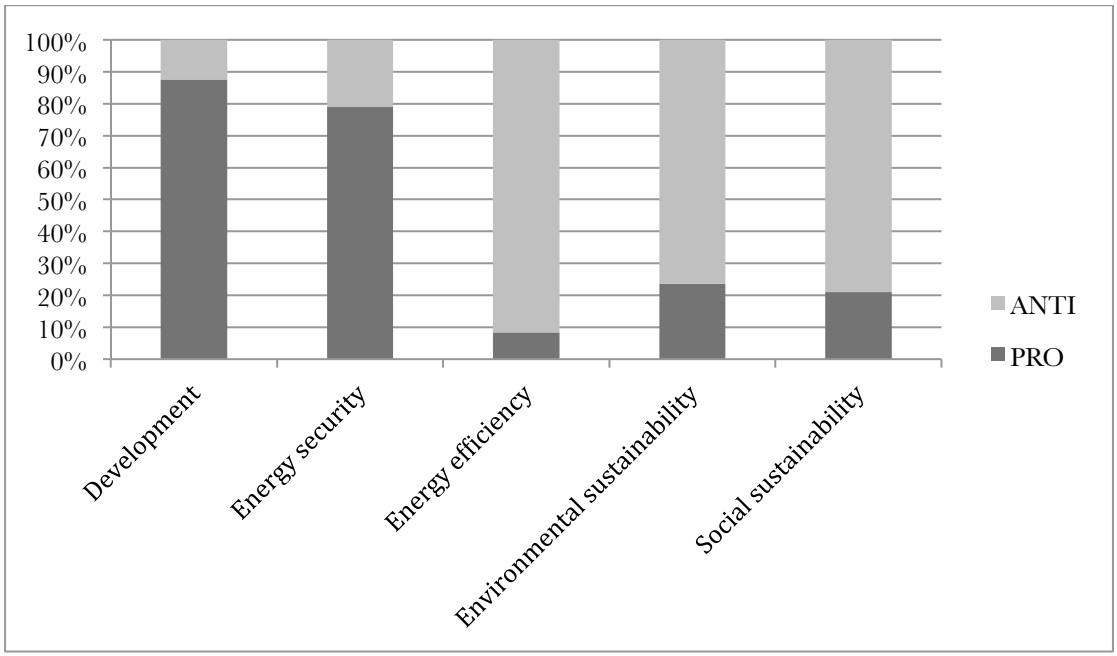
However, the multitude of stakeholders and discourses present in each theme make for a more challenging analysis of how hydropower legitimacy is defended or challenged. It should be noted that this case is focused on the legitimacy of an entire industry and is not contemplated from an organizational perspective. Adopting the industry-wide perspective on legitimacy means taking the institutional approach to legitimacy, in which *cultural definitions determine how the organization is built, how it is run, and, simultaneously, how it is understood and evaluated* (Suchman, 1995, p. 576). It has been a desire throughout to understand how the controversy unfolding in the Brazilian energy industry affects the opportunities for companies hoping to make a positive impact. Hence, drawing on the aforementioned work on legitimacy and rhetoric, it is the aim to analyze at a micro level the discourses of stakeholders, in order to evaluate potential response strategies for corporations seeking to position themselves strategically within the industry.

6.1 Competing discourses

Building on the findings, this section analyzes the work of justification provided by stakeholders involved in the controversy. Here an overview of 'who says what' helps a) define the key stakeholders and b) understand how these (de) legitimize hydropower. The eleven themes identified are then used to plot the controversy progression over time, in order to understand how competing discourses engage in hegemonic struggles over time.

First, a raw-data analysis showed how stakeholders would use primarily the main themes to either defend or criticize the hydropower policy of the government. Bar a few examples, every data piece coded for each theme could be placed within either the pro- or anti camp. Figure 1 below illustrates how often either camp invokes the various main themes to advance their arguments.

Figure 1: Stakeholder representation in main themes



It is evident from the graph that pro-hydropower stakeholders mostly invoke discourses on development and energy security, found within the pragmatic perspective, whereas the anti camp consistently point to the issue of energy efficiency, as well as environmental and social concerns. The data collection thus shows how certain stakeholders repeatedly maintain a rhetorical stance, either defending or criticizing the current hydropower energy policy.

President Dilma Rousseff, the government ministries such as the Ministry of Mines and Energy (MME), the government's central energy planning unit (EPE) and the consortia of state-owned and private multinational corporations constructing the Jirau, Santo Antonio and Belo Monte hydroelectric dams (Energia Sustentavel do Brasil, Santo Antonio Energia and Norte Energia respectively) naturally assume clear positions supporting the projects they are in charge of. The pro-hydropower camp is often supported by international development banks, such as the World Bank and the IMF, as well as the national development bank of Brazil (BNDES). The latter is funding up to two-thirds of the three hydroelectric dams in question in this paper and thus holds very clear stakes.

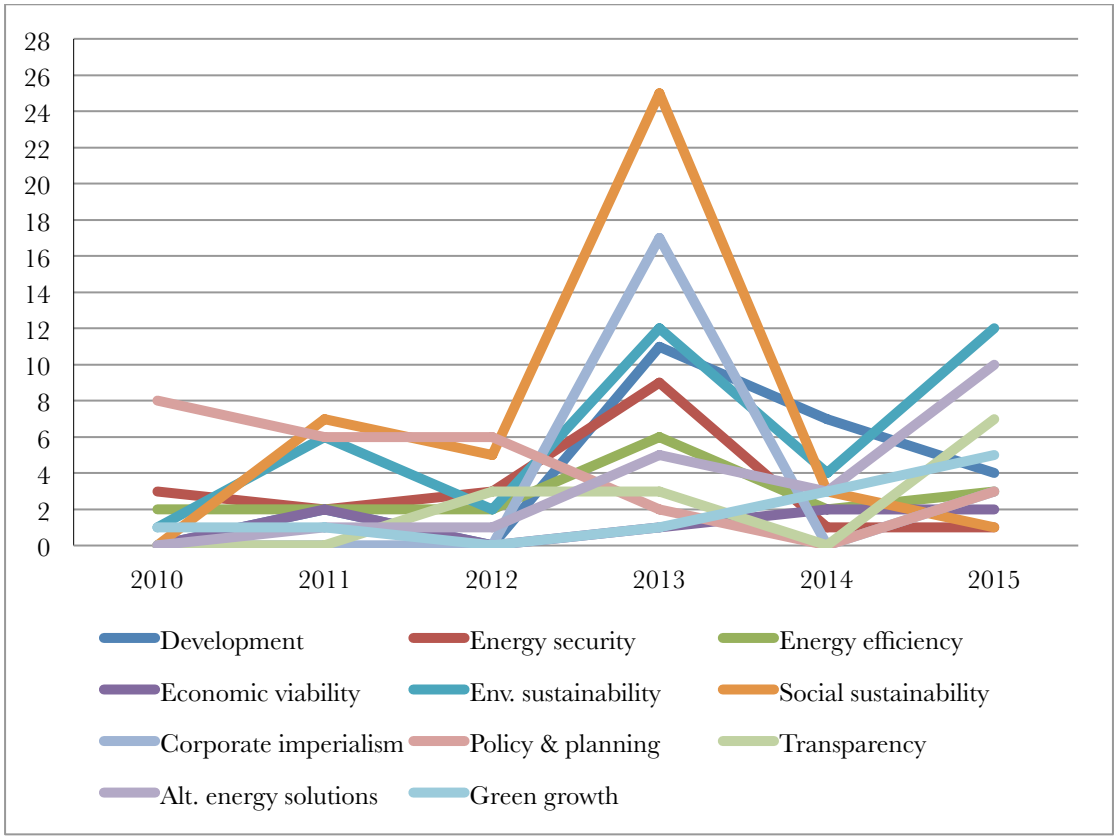
In contrast, stakeholder characteristics in the anti-dam camp are less coherent. Here, stakeholders range from directly affected indigenous communities with a clear stake in protecting their land and livelihoods, to vaguely affiliated international environmental groups. Indigenous groups such as the Xingu Vivo and FUNAI, the national indigenous affairs agency, work to protect communities like the Munduruku and Kayapó Indians, while non-governmental organizations (NGOs), like Amazon Watch, International Rivers, WWF and the Association of Indigenous Peoples, are equally unanimous in protesting the hydropower projects.

Think tanks, universities and other research institutions, although mostly critical of hydropower, represent a more diverse perspective on hydroelectric power generation in the Amazon. These include among others the Instituto Acende Brazil, Getulio Vargas Foundation (FGV), the Brazilian Infrastructure Institute and the University of Sao Paulo. For example, the Brazilian Infrastructure Institute argued that *Brazilian energy spending is heavily biased toward building large new projects rather than promoting conservation, small-scale innovation or decentralized generation* (Energy Economist, 2010). Likewise, the Getulio Vargas Foundation acknowledged Brazil's *reputation for renewable energy*, but lamented the current policy direction undertaken by the government (Energy Economist, 2010). A full overview of stakeholders identified is attached in Appendix 4.

Controversy development

Compared to the competing discourses found in the main themes, secondary themes such as 'alternative energy solutions', 'corporate imperialism' and 'transparency' by and large represent unanimous arguments against hydroelectric power generation, and are not useful in illustrating the positioning of the pro- and anti camps in Figure 1. However, secondary themes are essential in understanding the controversy in-depth. It is the emergence and influence of these that hints at the current and future state of energy policy in Brazil. Indeed, it will be argued that the secondary themes identified in the data are crucial rhetorical instruments in finding the solution that has so far evaded the debate between pro- and anti hydropower stakeholders. Figure 2 below shows the presence and frequency of all eleven themes between 2010-16.

Figure 2: Controversy development



The data collection was completed by January 2016, and Figure 2 thus includes data for the full year 2015. The controversy is first investigated in late 2010, where the first discourses on hydropower are found in searches. In June 2011 IBAMA, the licensing arm of the Ministry of Mines and Energy (MME), approved the environmental license to commence construction on the Belo Monte hydroelectric complex on the Xingu River. The approval sparked early debate on the feasibility of such a project, and the graph shows an increase for 2011 in discourses on the environmental and social impacts of continued reliance on hydropower. Additionally, 'policy and planning' is a consistent theme early on in the controversy, where warnings over policy impacts are prominent just around the time of Belo Monte's license approval.

The controversy peaks in 2013 for which a large concentration in data is found – every theme except 'policy and planning' spikes for that year. It is assumed that the public debate intensifies as dam construction progresses and stories of its consequences surface. The overrepresentation of data for 2013 also reveals that Belo Monte has attracted a majority of attention in the controversy, as it came under particular fire after a reverted court decision to suspend its license that same year. In comparison, the Santo Antonio hydroelectric complex were in legal battles and financial difficulties during 2014, yet much less data was found in spite of all three dams being subject to the same search criteria. Belo Monte was clearly the most controversial. By December 2013, Brazilian newspaper Folha de Sao Paulo published extensive reporting from within the Belo Monte construction site on worker conditions, environmental impact and the energy and financial economics of such a project. 'Social sustainability', 'corporate imperialism', 'environmental sustainability' and 'development' are the most recurrent themes used in (de) legitimizing of hydropower that year.

At its height in 2013 the debate does in fact include discourses on alternative energy sources. This may seem counter-intuitive, having claimed previously in the findings that the data shows no sign of competing stakeholders reaching a solution on an alternative energy policy. However, the emergence of 'alternative energy solutions' as a theme in the debate in 2013 is hardly surprising considering the amount of attention given to the topic at the time. What is interesting is how the social and environmental injustice-discourses seem to 'crowd out' any hope of debating alternative solutions. In this respect, media might play a role in covering indigenous human rights issues, rather than presenting a balanced discussion on energy efficiency and alternative energy solutions. A Norte Energia engineer being threatened with a machete at a public hearing in Altamira, where Belo Monte was being built, would arguably make for better headlines. The role of media is introduced further below.

In 2015, arguments representing the themes 'environmental sustainability', 'alternative energy solutions', 'transparency' and 'green growth' are on the rise. 'Policy and planning' is gaining as well after being entirely absent from the data collection in 2014. The change in theme predominance late on in the controversy hardly constitutes a new social order, in which key stakeholders negotiate a new, legitimate institutional field. However, what began in 2010 as concerned discourses on the reliance of hydropower in the national energy matrix does seem to reemerge in 2015 as careful discourses on alternative energy sources. The potential implications hereof play a central role in this thesis' analysis.

The role of media

Generally, media sources analyzed in this paper can be categorized as 'international', 'local' (i.e. Brazilian) and 'industry-specific' sources. International media include Business News America, Esmerk Latin American News, NACLA Reporting on the Americas, IHS Global Insight and the Financial Times among others. Industry-specific sources refer to media that cover energy and climate exclusively. These include for example the Energy Monitor Worldwide, Renewable Energy News, Engineering News-Record and Greenwire News Agency. In Brazil, Folha de Sao Paulo, Valor Economico and Reporter Brasil were the most prominent sources among the local media. A full list of newspapers and other media sources is attached in Appendix 3.

As stated in section 5.2 on data collection, it has been imperative to include the media as a stakeholder in its own right. As it will be proposed in the following section, the role of media is critical in shaping the controversy and presenting stakeholder arguments vis-á-vis a public audience. First, raw data was analyzed for all eleven themes to clarify whether media played a part in shaping the controversy. Figure 3 below shows what themes the three types of media would draw on to report the controversy.

Figure 3: Theme frequency by media

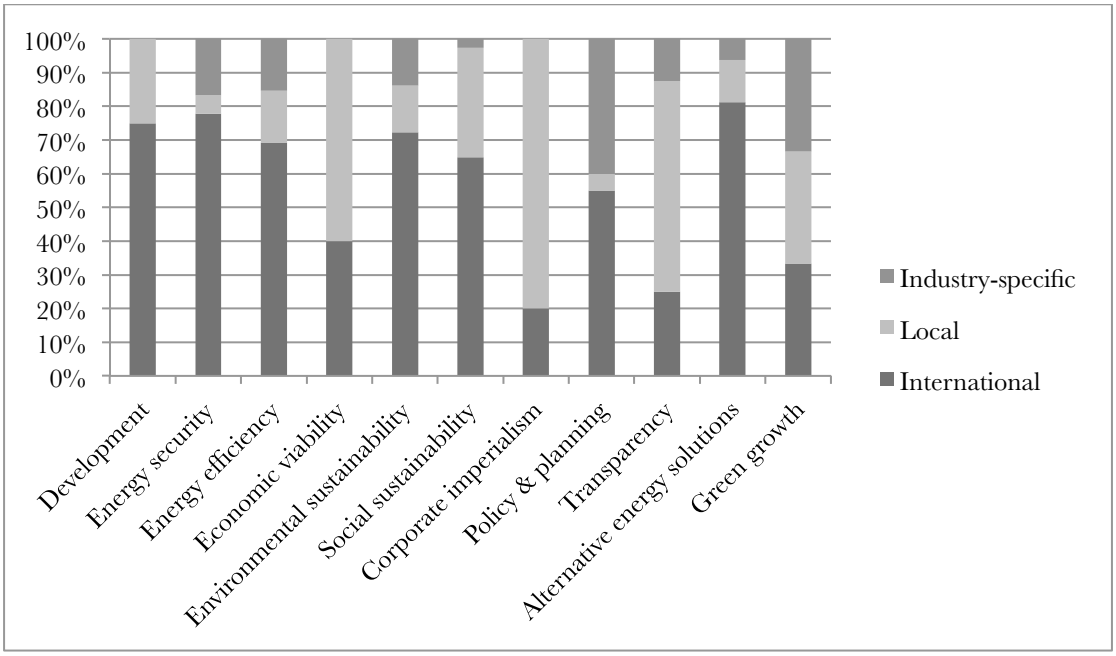


Figure 3 provides rather interesting insights from the media analysis. It shows a saturation of international media in all the main themes, with no exception. This confirms a strong international focus on the controversy in the Brazilian energy sector as well as the ability to report comprehensively on all major issues. In comparison, Brazilian media is overrepresented in themes such as 'economic viability', 'corporate imperialism' and 'transparency'. This finding confirms how local, Brazilian news coverage focused more on the socio-political issues related to hydroelectric power generation. Indeed, both the Folha de Sao Paulo and Reporter Brasil reports from the Belo Monte, Santo Antonio and Jirau complexes focused more on worker conditions and living standards in cities nearby, than on the energy economics of the dams. In Brazil, indigenous rights, poverty and corruption are sensitive topics and would draw a lot of headlines. This is reflected in the local news coverage and thus in Figure 3.

Industry-specific news sources naturally represent discourses on 'energy security' and 'energy efficiency'. These relate more to the technical capability of hydroelectric dams to deliver energy, which is in line with their editorial raison d'être on providing technical, expert insights. Additionally, industry-specific media represent nearly half of discourses on policy and planning, compared to a near zero for local media. Similarly, a third of discourses on green growth are by industry-specific media. The theme 'green growth' differs from 'alternative energy solutions' in that it has a stronger focus on the policy aspect of integrating renewable energy sources, where the latter simply promotes alternative renewable energy sources to hydropower.

The purpose of this analysis was partly to identify any signs that media played a part in maintaining competing discourses in a gridlock or helped solving it. In other words, were media, overall speaking, pro or anti hydropower? Taken out of context, a lot of data may be understood and coded as for-or-against statements on hydropower.

However, it is often complicated determining whether a given piece of data tells the argument of the stakeholder in the story, or the argument of the media reporting – or both. For example, when Folha de Sao Paulo reported from the Belo Monte construction site on how Altamira residents viewed the dam's social and economic impacts on their lives, it was a matter of language in the Folha report that hinted at whether the newspaper had positive or negative views of the situation. For the same reason, proposing pro and anti camps for media sources specifically would be a very subjective venture indeed.

Dominant discourses

The most interesting finding by far is the presence of dominant, or hegemonic, discourses. These might explain the gridlock proposed previously in the findings. For example, it is worth noticing the vast underrepresentation of local media in reporting on themes like 'energy security', 'energy efficiency' and 'policy and planning', as described previously. If these themes are practically absent in the local media, the national debate on hydropower becomes a narrow-minded discourse on social impact alone. This is problematic, as it impedes the facilitation of an objective and holistic debate on energy policy. Anti-hydropower stakeholders along with a majority of local newspapers may thus, unwillingly perhaps, have applied themes like 'environmental sustainability' and 'social sustainability' as dominant discourses.

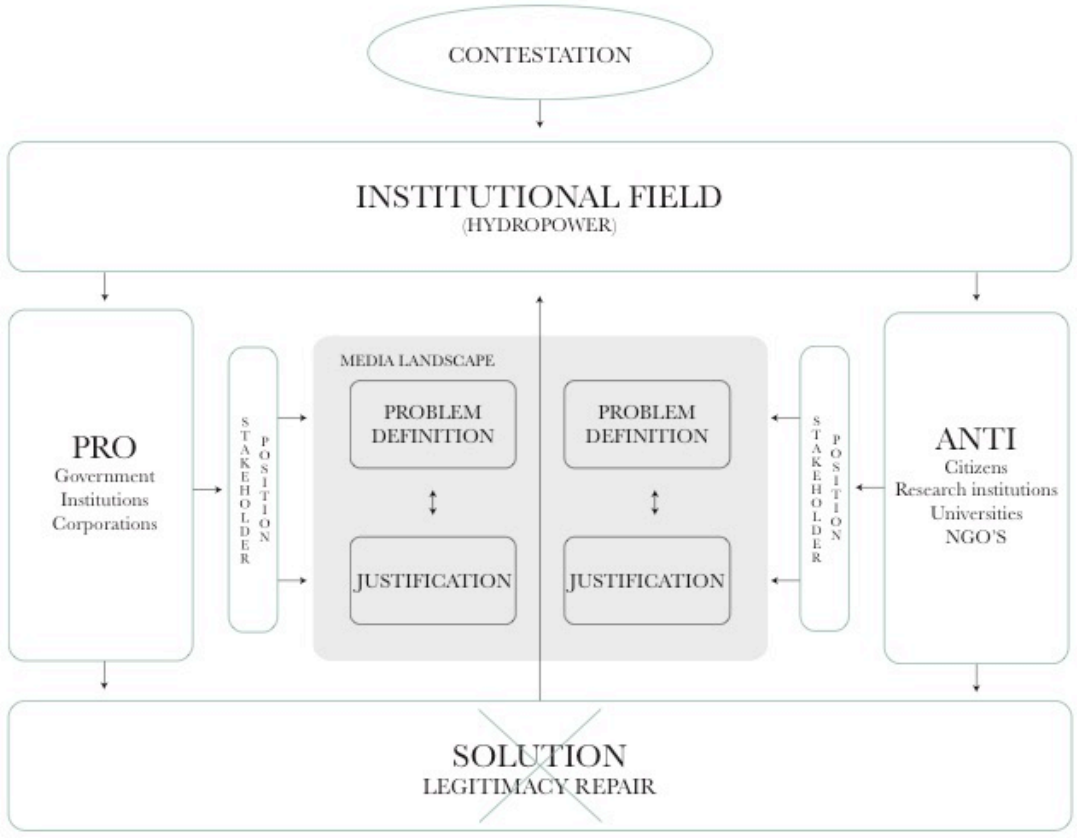
The data analysis also shows that pro-hydropower stakeholders, such as government officials and the construction consortia building the dams, maintained an 'ultimatum-style' discourse on energy in Brazil, which basically claimed that it is hydropower or no power at all. In February 2013, the Institutional Director with Norte Energia summed up this sentiment: *Without electricity we will go nowhere* (Gulf Times, 2013). Likewise, the president of Santo Antonio Energia has echoed President Rousseff's direct equation between water and energy: *Brazil is a country that's growing, developing, and it needs energy. And the potential in energy production is located, for the most part, in Amazonia* (Washington Post, 2013). The president herself responded to critics by saying they lived in a 'fantasy realm' if they thought living standards could be upheld without hydroelectric power generation: *I have to explain to people how they're going to eat, how they're going to have access to water, how they're going to have access to energy*, she said (New York Times, 2012).

More generally, the findings suggest the role of government in gridlocking the debate on energy in Brazil by imposing an ultimatum-discourse on the debate. Competing arguments were uncovered; of these several were applied, by both stakeholder camps, in such a way they came to dominate discourses on particular issues. In the following it is analyzed how this gridlock affects the dynamics of institutional repair and field formation in the Brazilian energy sector.

7. The dynamics of institutional repair

It has been shown in the findings how hydropower as an institutional field has come under threat and is being contested on various fronts by various stakeholders. The process ensuing since contestation against hydroelectric dams first gained steam in late 2010, commonly referred to in this paper as 'the controversy', progresses through several stages. The 'triggering event' of the controversy is less clear in this case, where contestation gradually picks up speed. However, the license approval of Belo Monte in June 2011 sparked considerable outrage and media coverage, and may well be considered a turning point for the legitimacy of hydropower. Figure 4 below summarizes the findings in a graphical overview of the controversy in the Brazilian energy sector.

Figure 4: The dynamics of institutional repair in a gridlock



The legitimacy tests that followed the initial contestation challenge the common orders on which the legitimacy of hydropower is built. The five main themes identified in the findings constitute for this case the 'orders of worth', which are values that *sustain the harmonious arrangement of things and persons in a state of general agreement* (Patriotta, Gond, & Schultz, 2011, p. 1805). Development of the Brazilian economy, a secure energy supply and an efficient energy production that does not harm the environment or the people living in it, are all values that, when fulfilled, make hydroelectric power generation a legitimate source of energy. As the findings showed, disagreement over all the legitimating orders of worth divided most stakeholder discourses into either pro or anti hydropower categories.

The model differs from the research of Patriotta et al., in which stakeholders eventually *(re) negotiate existing arrangements* (Patriotta, Gond, & Schultz, 2011, p. 1829) to settle on a new social order – a reproduction of the institutional environment. The controversy is still in the phase of public justification and has yet to reach any new social order. As previously described in the findings, the data does show signs of new discourses emerging on alternative energy solutions, yet it is premature to conclude these as a new social order, in which either hydropower or another energy source is established as a new, legitimate institutional field. The Brazilian energy situation remains that of an energy policy deeply reliant on hydropower, and it remains fiercely contested.

The model thus illustrates the paradox of absent discourses on alternative energy solutions as well as the issue of competing-discourses in the main debate provided by pro and anti stakeholder groups. Stakeholders in the two groupings are juxtaposed, each providing their own definitions of the issues relevant to their interests and justifying their views accordingly. A clash takes place in the center of the model in the public arena, mediated by local, international and industry-specific newspapers, and a solution to the controversy remains non-existent.

For the same reason, it cannot be concluded how institutional repair takes place in the case of the Brazilian energy controversy. Rather, it is necessary to first bridge the competing-discourses dilemma, by analyzing how legitimacy can be restored through corporate response strategies as introduced in the literature review. Solving the discursive gridlock by restoring legitimacy at both an organizational and industrial level is key in forming a new, legitimate institutional field to guide the planning of energy policy in Brazil.

A legitimate alternative to the current energy agenda must take into account the concerns and competing arguments from a multitude of stakeholders and forge its way past hegemonic discourses, which involves *an incumbent elite imposing a dominant ideology* (Van Bommel & Spicer, 2011, p. 1720). However, according to Van Bommel and Spicer, hegemony and the formation of institutional fields is more than just domination – it entails continuous dialectical struggle among competing stakeholders (Van Bommel & Spicer, 2011), which is why the argument for corporate response strategies is put forward here as a means to form a new legitimate institutional field in the Brazilian energy sector. This is discussed in section 9.

8. Green growth – an export perspective

This section offers a comparative take on green growth in the Danish and Brazilian markets. It introduces the political framework on energy and the environment from the Danish clean-tech sector and compares this to the business environment in the Brazilian energy sector. Through comparative analysis of this kind it is possible to identify key points of mutual industry interests, as well as barriers upon which corporate response strategies may be planned. These are finally discussed in section 9.

In the decades preceding the 1970s, the Danish economy was entirely dependent on imported oil. The oil crisis, which severely affected Denmark as it did the global economy, had the one positive impact that it motivated a public and political push for an alternative to fossil fuels. By 2050, Denmark will be the world's first country powered exclusively by clean and renewable energy and is today considered an industry leader in climate- and energy technologies (State of Green).

The organization State of Green, a public-private partnership representing the Danish climate and energy sector, showcases the various industries and success stories from Denmark and highlights, for example, how economic and environmental policies can indeed go hand in hand. Since green growth first became embedded in the Danish mindset after the oil crisis, the national economy has grown almost 80 percent without increasing gross energy consumption (State of Green). The result of a progressive policy framework has been a thriving green industry counting some of the biggest global energy players as well as a significant industry of small- and medium sized enterprises making up the energy supply chain in Denmark. Vestas is recognized worldwide for its wind energy systems, and Danfoss has supplied its smart energy technology to the Shanghai Tower – China's tallest building – to name but a few examples (Danfoss, 2014).

State of Green highlights in total 10 key sectors in which Danish companies, small or large, hold expertise: energy efficiency, heating and cooling, intelligent energy, wind energy, solar and other renewables, bioenergy, water, climate adaptation, environment and resources and sustainable transportation (State of Green). These ten sectors may be divided further into four categories: Energy efficiency, heating and cooling and intelligent energy can be placed under 'Intelligent Energy' as an overall category. Wind energy, solar and other renewables and bioenergy may be categorized as 'Renewable Energy Solutions'. Finally, water, climate adaptation, environment and resources and sustainable transportation may be categorized as 'Climate Adaptation'. In short, the major Danish clean-tech sectors focus on a) the production of energy, b) the saving of energy and c) adapting to the environment.

The Danish energy policy framework is planned by the Ministry of Energy, Utilities and Climate. The 'Energy Plan 2012-2020' was published in March 2012 to guide policy initiatives and investments, and to commit the government to a series of milestones in the course of its transition towards fossil fuel independence in 2050. The agreement ensures a 12 percent reduction in total energy consumption by 2020 compared to 2006, 35 percent renewable energy and almost 50 percent wind power for electricity in the energy matrix. Carbon emissions are reduced by 34 percent by 2020 as well (EFKM, 2012). The energy agreement is focused on energy efficiency, increased capacity in renewable energy (wind in particular), smart grids, improved frameworks for biomass production and research, development and demonstration of economic growth potential. The energy plan is funded through tariffs and savings from efficiency measures in the energy sector (EFKM, 2012).

Denmark is a founding member of the International Energy Agency, a strong advocate of climate change mitigation efforts and is considered a leader among OECD member countries for its well-designed energy policies (IEA). A central element in developing a thriving green sector has been the combined strengths of the public and the private sectors. As mentioned in the above, political intent and public awareness and support incentivized the private sector to develop the solutions necessary to meet political ambitions.

Today, public-private partnerships are essential in promoting green growth domestically as well as internationally. For example, the City of Copenhagen engages in partnerships with public-private institutions such as State of Green, consultancies such as Rambøll Management Group, as well as architectural firms and a host of private suppliers when developing city energy and infrastructure projects and offering these for private sector bidding. Furthermore, it is a partner in initiatives such as CLEAN (CLEAN) and the Danish Cleantech Hub (Danish Cleantech Hub).

CLEAN, formerly known as Copenhagen Cleantech Cluster, is an industry cluster for energy and environmental projects in Denmark and abroad. They claim Denmark is a *clean-tech superpower* (CLEAN) in spite of its relative size. Their 'business in sustainability' approach is a departure from the academic dogma on climate adaptation and sustainable energy production, insisting that business will play a key role in global sustainability efforts (CLEAN). Danish Cleantech Hub is a public-private partnership between the Confederation of Danish Industry (DI), the Danish Industry Foundation and State of Green. Located in New York, its purpose is to promote Danish clean-tech solutions in the United States market (Danish Cleantech Hub).

Both such initiatives seek to promote Danish green business interests abroad, along with the Foreign Ministry's Trade Councils worldwide. In 2014, Danish exports of energy- and climate technology totaled 75BN DKK (app. 10 billion USD), which amounted to 12 percent of the total exports of goods that year (DI, 2015). According to DI, that number may well double by 2030, as a result of global willingness to take climate adaptation seriously post COP21 in Paris last year (DI, 2015). The Trade Council in Brazil highlights 'environment and energy' as one of its sectors in focus, yet most demand and investments within this sector are for water infrastructure following the drought beginning in 2014 (UM). Overall, data shows that energy and climate technology accounts for very little of Danish exports of goods to Brazil. The top industry of exports of goods to Brazil is manufacturing, with exports worth 3,342.8BN DKK in 2015, of machinery and pharmaceuticals among others (DI, 2016). In DI's market report on Brazil, exports of climate- and energy technology is not included as a category of its own.

It should be noted that it has taken Denmark almost fifty years and an ambitious policy framework to achieve its status as a green frontrunner. Moreover, it may be argued how this policy framework was developed under very stable macroeconomic and political conditions. The same can hardly be said of many Latin American countries, including Brazil, which for long were subject to swift changes in political regimes. Additionally, Denmark was never endowed with a vast natural resource on which it could depend for its energy. In other words, there was a massive incentive in the seventies to explore clean energy solutions as an alternative to depending on imported oil.

8.1 The Growth-Sustainability Conundrum

In comparison, many emerging markets struggle with the so-called 'growth-sustainability conundrum'. In developing countries and emerging markets, economic growth has for long been used as the prime indicator as to whether a country was headed in the right direction. High growth in gross domestic product (GDP) looked good in market reports and helped attract global investments. For Brazil, the result has been an upward mobility of 29 million people being lifted out of poverty and into a growing middle class between 2003-2014, where the average income level of the poorest 40 percent of the population rose by 7.1 percent in real terms (World Bank). As emerging economies enjoy global recognition for such growth rates, it may understandably be a tough political decision to stop and rethink policies to encompass green growth adaptation, if this in any way endangers the newfound economic prosperity.

Developing countries and many emerging markets contribute the least to global climate emissions, yet they suffer the consequences hereof the hardest. Extreme weather events, such as drought and flooding in particular, are the result of a warmer global climate (Jäger & Sathe, 2015). The social and economic consequences of an increasingly extreme climate put countries like Brazil in a difficult situation. Should economic growth be sacrificed in the short term to adapt to a cleaner economy for the long-term benefits?

In such a market context, energy is a very different discussion from that in countries like Denmark, and clean energy is often reduced to merely an academic discussion. With millions of people still living in poverty, it seems less important what source of energy is being tapped, as long as affordable energy is provided along with basic services such as sanitation and clean drinking water. This mentality is evident from the 'energy security' theme found in the data collection. Brazil, however, seemed to have it figured out. Endowed with vast natural resources in the Amazon region the country's share of hydropower generation for electricity reached 82.5 percent in 2012. In comparison, Denmark's share of renewable energy for electricity was 48.3 percent that same year (World Bank). The question of who does better in terms of renewable energy eventually boils down to an argument over legitimacy. If hydroelectric power can legitimately be considered secure, clean and renewable energy, then Brazil has come a long way. If not, it has put all its eggs in one illegitimate basket.

Much the same way that Latin American countries long have been trying to shake off the 'resource-curse' – that is, dependency on commodity exports of for example iron ore, oil, soybean (Argentina, Brazil) and copper (Chile) to sustain the boom in China (Wharton University, 2016) – Brazil is now faced with the possibility of having to rid itself of dependency on water as a resource. However, the legitimacy crisis of hydropower has demonstrated far-reaching impacts on the political and economic spheres. The findings have revealed a rather elaborate connection between executive-level politics, energy policy-making and economic impact at both an institutional and individual level.

The energy policy doctrine under President Rousseff has upheld political belief in hydropower as an institution and proud tradition of clean energy in Brazil. Hydroelectric dam complexes are great design projects, which look impressive in every aspect from the number of megawatts per hour-capacity, to the physical size of the dams.

The Brazilian development bank (BNDES) provides up to two-thirds of financing for hydroelectric dams in Brazil. Consortia of both state-owned and private MNCs bid for the awarding of construction contracts to build the dams and finance part of the project themselves. The dams produce electricity that is sold at rate to the utilities, which sell this on to consumers at an extra cost – an add-on tariff. This generates revenue to repay both the consortia and the BNDES. However, as the findings revealed, there were severe delays in construction due to improper consultation and impact assessments, which provoked worker strikes and riots. Budget overruns and heavy fines for not delivering energy to the national grid on time fall, as mentioned, in part on the BNDES. As the development bank is a state-owned institution, the bill eventually falls on the taxpayers.

The issue of corruption and transparency in Brazil has throughout been considered secondary to the legitimacy of hydropower as an energy source. It was imperative the coding process of data on the controversy did not get sidetracked by an intense media coverage on corruption: The state-owned oil company Petrobras has generated massive amounts of headlines since the 'Lava Jato' investigation (operation Car Wash) first looked into an alleged kickback scheme between politicians and executives in Petrobras (Stauffer, 2015). The scandal has seen top corporate executives either resign or even incarcerated, including Marcelo Odebrecht, now former chief executive at Odebrecht SA, one of Latin America's largest multinational construction and engineering firms and the leading MNC in the Norte Energia consortium constructing the Belo Monte hydroelectric complex. Petrobras officials estimated the total of all bribes amounted to nearly 3BN USD (Segal, 2015).

However, Brazilian public prosecutors recently launched new investigations into similar corruption schemes within the hydro industry itself. Many of the same construction firms investigated in 'Lava Jato' were since hired to build hydroelectric dams. OAS, Quieroz Galvão and Galvão Engenharia, a trio of multinationals with a combined one-third stake in Belo Monte, are all implicated in the Petrobras case (Valor Economico, 2015). In general, a lack of transparency in the auctioning of large-scale energy projects is arguably an issue. The findings showed how internal political pressure and financial incentives have pressured officials in the energy ministry's licensing office, IBAMA, to fast-track approve environmental licenses for the Jirau, Santo Antonio and Belo Monte hydroelectric projects in spite of significant social and environmental concerns. Marina Silva, energy minister under President Lula da Silva and two IBAMA presidents have all stepped down after facing pressure from their political peers (Hurwitz, 2012).

To be sure, hydroelectric projects alone do not account for Brazil's current economic woes. Having boasted an average annual growth of 4.5 percent between 2006-2010, the economy contracted by 3.8 percent in 2015 (World Bank). A recent reduction in energy consumption is therefore unlikely the result of improved energy efficiency measures, but rather a natural consequence of the economy dipping into recession, combined with higher tariffs imposed due to energy shortages caused by severe drought (Brasileiro, 2015).

However, it is evident from the above that MNCs have played a crucial role at a top political level in influencing policy decisions. Adherence to the 'economic growth dogma' in the Brazilian energy sector has seen policymakers implement short-term solutions for long-term challenges, for the benefit of themselves and the corporations they collaborate with. The result has been a race to the bottom for the environment, the social welfare of citizens and the energy security of the country. As a Xingu Vivo coordinator said of the government and the MNC consortia in Belo Monte: *They want to repress any demonstration that seeks to defend our rights. This is a scandal and is the sort of thing you see in a dictatorship* (BNA, 2013).

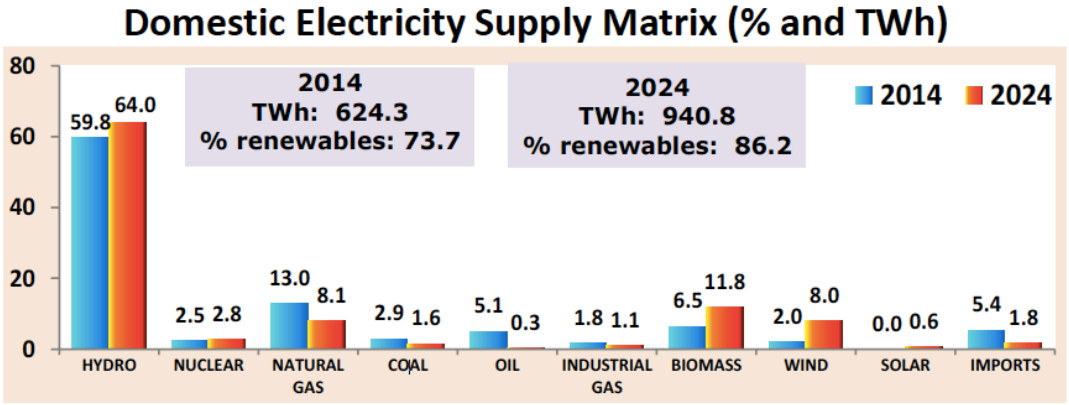
Drivers of change

The findings in this paper indicated a change in discourses late on in the controversy. During 2015, a growing number of arguments emerged on alternative energy solutions, on environmental sustainability and on green growth (see section 6.1). While it is no doubt premature to conclude these discourses the repair of institutional legitimacy in Brazil, they do represent a change in stakeholder attitudes. In April 2015 the new energy minister, Eduardo Braga, commented on the possibility of hydroelectric reservoirs reaching a critical low of 10 percent capacity during dry seasons and admitted that would be catastrophic for energy security (Investing.com, 2015).

Braga's comments were in line with several new discourses emerging during 2015 that promoted alternative, renewable energy sources and solar power in particular, in favor of hydropower (Amazon Watch, 2015); (Investing.com, 2015). The new plans, first suggested by the energy minister in 2015, include tax breaks for the production of photovoltaic panels and an increasing number of auctions for solar power. The first such auction ever held in Brazil, one of the sunniest countries in the world, took place in late 2014 where 31 plants were auctioned to deliver a total capacity of 1,048MW of solar power by 2017 (Investing.com, 2015). That is practically nothing for a country the size of Brazil, but if the 11,233MW Belo Monte hydroelectric complex will in fact only deliver around 40 percent of its capacity Brazil may finally explore the full potential in alternative solutions.

The central point is that change is appearing at a policy level. Still, it is uncertain how much to make of such change. For anti-dam campaigners, minister Braga's comments undoubtedly represent a refreshing attitude at a top political level. However, he will still be working under a policy framework, which is heavily invested in hydropower. President Rousseff has a lot of political capital at stake and cannot easily admit defeat after years of persistent hydropower advocacy.

The Brazilian energy framework is guided by the Ministry of Mines and Energy's (MME) 10-Year Energy Expansion Plan. This is produced by the MME's central energy planning unit 'Empresa de Presquisa Energética' (EPE) and revised on a near-yearly basis. In the latest available edition, the PDE2024, that includes policy initiatives between 2014-2024, hydropower is expected to remain supreme in 2024 with a 65.8 percent share of total electricity generation (MME EPE, 2015). Below is a graph with EPE's expected 2014-2024 domestic electricity supply matrix.



Source: (MME EPE, 2015)

The slightly lower share of hydropower in the mix compared with the 82.5 percent in 2012 is the result of increased production in wind and biomass in particular. Solar goes from a zero percent share to 0.6 percent in 2024, while natural gas, oil and coal are all gradually being phased out. With a total of 86.2 percent renewable energy previsioned for 2024, there is no doubt the Brazilian energy matrix is changing for the better. Depending on the success of exploring and implementing its solar and wind power potential, Brazil could have a truly impressive energy matrix for electricity consumption within the next ten years.

However, there is more to a clean and efficient economy than energy production. Modernization, optimization and efficiency, for industry as well as private households, are equally important buzzwords in a green growth paradigm. A dirty and inefficient energy economy may as well be the result of a polluting traffic and transportation sector, large and ineffective industry sites and losses of energy on the transmission lines. For example, Celio Bermann with the University of Sao Paulo noted that the debate on the size of hydropower reservoirs vs. backup generation was derailed, by saying that *the choice between reservoirs and gas is a false one. Reducing transmission losses and modernising older hydropower plants would cut the need for both* (The Economist, 2013).

Energy for industry is an equally important issue. Researchers with the federal university in Altamira criticized the Belo Monte complex for not even delivering energy to the people, as was promised by Norte Energia. They claimed the energy produced would support production of aluminum, which is exported to countries like Japan, and not the welfare of the local populations (Gulf Times, 2013).

For electricity, there is a host of policy initiatives aiming at integrating a greater share of renewables into the mix. In 2002, the PROINFA program was launched to develop 3,000MW of renewable energy generation, equally distributed between wind, biomass and small hydropower projects. The program included a 60 percent local content requirement, which means that sixty percent of equipment and services must be provided by Brazilian suppliers (IRENA, 2015). The BNDES would provide preferential financing, that is, low-interest financing, for renewable energy projects that meet local content requirements. This financing policy has since evolved from a quantitative approach of 60 percent, to a qualitative approach, where access to preferential financing depends on which elements of a project are local, rather than how many. In order to be considered 'local', suppliers must be pre-accredited by the BNDES (IRENA, 2015).

In 2013, the INNOVA ENERGIA program was launched, providing subsidies of up to 90 percent of project costs for R&D projects related to smart grids, renewable energy, hybrid vehicles and energy efficiency in transportation. The program has up to 924M USD in funding (IRENA, 2015). In April 2015, the Ministry of Mines and Energy announced a 20BN R$ (9.7BN USD) fund of public and private contributions to finance electricity generation in the Northeastern region, including 8,000 MW of wind and solar power (IRENA, 2015); (MME, 2015). Furthermore, import tax exemptions were provided in 2011 for the import of wind power equipment and similar tax exemptions for the import of solar photovoltaic (PV) equipment is pending legislation, so long as there is no equivalent local production (IRENA, 2015).

For other sectors, such as heating, transportation and energy access, there are similar legislative and financial incentives to promote energy efficiency measures. Again, the BNDES provides preferential financing for projects that use for example solar water heating in a social housing program (IRENA, 2015). As late as December 2015, the program for distributed energy production (Programa de Geracão Distribuída) was launched with the aim to have 2.7 million private consumers generating 23,500 MW – the equivalent energy of the Itaipu hydroelectric mega dam – by 2030. The program is focused on solar panels for private households and has 100BN R$ in funding for the project (MME, 2015).

The MME acknowledges the benefits of industrial diversification of such initiatives described above (MME, 2015). Beyond clean energy production, there are the linkages in manufacturing and technical expertise resulting from aggressively promoting a specific industry at a policy level. In other words, Brazil is hoping to attract investment, national and international, to nurture a service industry related to the production of e.g. solar power equipment and engage in an increased transfer of technologies with the international community (MME, 2015).

Opportunities & barriers for the transfer of technology

In summarizing the above it is evident the Brazilian market for climate- and energy technology is complicated to say the least. The economic outlook for Brazil for 2015-16 is very bleak and the political scene is suffering its worst legitimacy crisis ever, as President Rousseff is facing an impending impeachment vote (Jacobs, 2016). However, it is argued here that the country is at a crucial turning point in terms of securing long-term, sustainable development. Section 8.1 began by explaining the 'growth-sustainability conundrum' in which countries like Brazil supposedly must choose between economic growth or climate adaptation. During the period of 2010-2016, Brazil experienced all at once a rapid decline in economic growth into negative figures and a change in discourses toward promoting alternative energy solutions. The sacrifice of economic growth was hardly voluntarily, but is likely that the crisis is proving a silver lining in pushing the country toward a new energy agenda.

If anything, the institutional system of Brazilian government has passed the test. The incarceration of a number of prolific CEOs and ministers, as well as the latest probes into corruption in the hydropower industry, demonstrate the institutional strength of the system. The independence and capability of the Federal Police and the Brazilian High Court to indict politicians at a top level under circumstances of relative peace and order bodes well for the country. According to the void-sophistication theory by Doh et al., large multinational corporations in this context should be providers of citizens' rights and fill in with technology and services where governments fall short (Zhao, Tan, & Park, 2013). In this case, however, MNCs have been so entangled in politics and their own interests, that they have hardly helped boost the legitimacy of corporations, national or international, in Brazil.

The opportunity for Danish clean-tech corporations to engage in the transfer of knowledge and technology thus remains a challenging prospect. While the current market conditions are less inviting and the political environment unstable, the institutional strength of government bodies should provide reassurance for far-sighted companies. Additionally, the change in discourse at a political level, combined with a series of programs and funds for renewable energy projects, will be a key driver of change within the energy sector for the coming years. Table 2 below summarizes the opportunities and barriers for Danish clean-tech firms interested in the market.

Table 2: Opportunities and barriers for the transfer of technology

Table 2. Business Environment
Opportunities & barriers for Danish firms

OPPORTUNITIES	BARRIERS
Renewed institutional strength	Highly unstable political environment
Positive legislative indicators for green growth energy policy	Lack of transparency, high degree of corruption
Changes in preferential financing for local content requirements	Local content requirements still favor Brazilian firms
Import tax breaks for renewable energy technologies	Immature market, little experience with public-private collaboration
Increased funding for renewable energy projects	Public anti-sentiment towards MNCs
Sector – Grid optimization, smart grids	
Sector –Energy efficiency for industry	
Sector – Energy efficiency for households	
Sector – Water quality and management	
Sector – Wind and solar power	
Sector – Climate adaptation	

The least appealing market for Danish firms, at least in the short term, may be the market for energy production, as Brazil remains heavily invested in large-scale hydropower towards 2024. Among the three overall categories of Danish expertise identified in the beginning of section 8, the markets for energy efficiency and climate adaptation may be the most interesting. In the following it is discussed how Danish corporations can address these opportunities and barriers by strategically planning their corporate rhetoric according to the discourses and themes identified in the findings.

9. Discussion

This section discusses the findings and analyses from the sections 6, 7 and 8. First, the findings from the thematic analysis and code development are discussed against the literature on corporate legitimacy introduced in the literature review. This includes a criticism of the 'moral school' of legitimacy and the strategic perspective on legitimacy. Second, the section compares the findings of competing discourses to the alternative solutions from the Danish clean-tech industries to discuss potential MNC response strategies for legitimacy. Finally, green growth is discussed as a plausible new institutional field in Brazil and Latin America.

When the topic was first investigated at a preliminary level to form an idea of its nature and scope, it was instantly clear that certain issues played a more central role than others. Given the type of energy source and the geographical location in question, it was expected to find a great deal of controversy regarding natural resources and the environment. Also, indigenous' rights in the Amazon is traditionally a sensitive topic in Brazil, and the 'environmental sustainability' and 'social sustainability' themes are indeed the two largest in the data collection.

For a research paper on energy policy and renewable energy, it was less expected to see these issues dominate the debate, to the extent revealed in the findings. Hegemonic discourses on energy security versus the environmental and social sustainability of hydroelectric power generation have crowded out valid arguments both for and against hydropower. For example, the allegedly inadequate energy efficiency of dams is arguably a pragmatic argument policymakers should take seriously. Likewise, NGOs, development organizations and anti-dam activist groups ought to be open to a dialogue on development and energy security, as access to energy is a critical component in fighting poverty (World Bank). For this reason, the discursive gridlock between various stakeholders and their competing discourses is all the more intriguing.

The eleven themes identified in the process of coding and thematic analysis are representative of the controversy and its main components. These were categorized into the pragmatic, the environmental and the moral perspectives on legitimacy in the Brazilian energy sector. The three perspectives do not seem a far cry from Suchman's three fundamental forms of legitimacy; the pragmatic, cognitive and moral types of legitimacy (Suchman, 1995). Each do they refer to a particular understanding and approach to legitimacy, whether strategic or institutional. A point has been made throughout that the institutional perspective on legitimacy (Suchman, 1995) applies for this paper. The investigation has thus approached legitimacy from an industry perspective – an input-oriented and societal construct that ultimately affects the positioning of corporations. The literature has been criticized in section 2 for predominantly taking an organizational, or strategic perspective on legitimacy, especially in Latin America. In this context, stakeholders of all sorts across the Brazilian energy sector (de) legitimize hydropower as an energy source, by invoking arguments of the pragmatic, cognitive and moral types, thus providing inputs that affect legitimacy management.

The literature review showed that scholars have heralded new forms of legitimacy management based on Suchman's moral legitimacy, by which organizations can effectively build and maintain legitimacy through a dialogue-based approach to stakeholder communication (Palazzo & Scherer, 2006); (Castelló & Lozano, 2011). The findings of this thesis have shown a less straightforward reality, as the gridlock demonstrates. For this case, a dialogue between stakeholders has indeed taken place throughout the controversy, especially so for the government coalition of construction firms defending themselves from criticism from national and international stakeholders. Impact assessments, public hearings, compensation programs worth billions of dollars and the persistent reassurance that neither energy security, the environment, nor the people will suffer as a result of the current policy direction, has done little to alleviate criticism.

To be sure, the Petrobras scandal and political crisis may currently undermine everything any government official or MNC CEO says, but a suspicion remains nonetheless that the 'moral school' of legitimacy does not sufficiently account for the complex societal realities in emerging markets. Corporations can adopt a communications-driven approach to gain moral legitimacy, but they may in the end do so motivated by intrinsic factors relating to the pragmatic legitimacy of supporting the economic bottom-line (Suchman, 1995). It is not unlikely that an underlying strategic rhetoric has been sensed underneath the government's attempts to maintain legitimacy through dialogue. As one indigenous Brazilian put it: *The government consults, but it constructs, no matter what* (Folha de Sao Paulo, 2013). The Brazilian energy policy framework remains deeply embedded in large-scale, MNC-driven projects to project strength and progress to the global community, and, as the findings show, no dialogue has thus far repaired the legitimacy of such a policy.

Although the dialectic rhetoric for moral legitimacy definitely heralds a redefinition of the role of business in society (Castelló & Lozano, 2011), Suchman himself conceded the flaw in the moral perspective of legitimacy described previously (Suchman, 1995). Firms should thus be cautious to rely on just moral legitimacy for gaining legitimacy. The legitimation of business conduct in controversial industries, such as the extractive and renewable energy industries, entails complex inter-discursive dynamics, where contesting stakeholders provide alternative discourses to legitimize or de-legitimize particular actions (Joutsenvirta & Vaara, 2015). This is well documented in the findings, and such controversial industry provides for an interesting setting for discussing MNC legitimacy.

From an economy of worth perspective, the competing discourses become a little clearer. While higher order principles, or orders of worth, have not contributed to solving the legitimacy gridlock, they do help understand how stakeholders justify their positions vis-á-vis a public audience (Patriotta, Gond, & Schultz, 2011).

The main themes presented in the findings constitute the orders of worth that provide justification in this context. It has been shown how the pro-hydropower stakeholders mostly invoked the common orders of 'development' and 'energy security' in their justification of hydroelectric power generation. The argument is that energy is required to sustain the rise of Brazil's economy in the global sphere, which is in everyone's interest. With this higher order as backup, the readily available Amazon hydropower resource becomes a legitimate means to that end. The anti-hydropower stakeholders mostly invoked the common orders of 'energy efficiency', 'environmental sustainability' and 'social sustainability' in their justification against hydropower (see Figure 1). As previously discussed, hydroelectric dams may in fact be considered legitimate in spite of environmental and social concerns, as long as they provide the much-needed energy as promised. For this reason, it is peculiar that the argument of energy efficiency has not been more successful in countering a government-led coalition of discourses on energy security.

In addition to the theory of orders of worth and public justification, the dynamics of institutional repair have been depicted graphically in Figure 4 to better comprehend the discursive gridlock of competing discourses. This summarizes, in a simplified way, the findings of the research but does not provide suggestions for identifying a solution. While alternative discourses were indeed present in the data, the findings showed no consensus among stakeholders on addressing an alternative solution to the problem, and, as a result, legitimacy has not been repaired. This is reflected in Figure 4. The theory of hegemonic struggles (Van Bommel & Spicer, 2011) was then introduced to suggest how certain, powerful stakeholders successfully imposed hegemonic discourses during the controversy, which came to dominate the public debate. This finding was a key motivation in searching for potential response strategies that foreign clean-tech firms may implement to engage in hegemonic struggles and, ultimately, form a new, legitimate institutional field.

One of the key findings of this research showed how a lack of transparency at a policy level facilitated a 'race to the bottom' for environmental and social standards in the Brazilian energy sector. It also showed that large multinationals played a crucial role in this process, by means of bribery in the auctioning process for energy projects of below-acceptable environmental standards. Unethical MNC business standards like this are a major issue in Latin America, where corporation are often expected to fill institutional voids not covered by the government (Zhao, Tan, & Park, 2013). On the contrary, MNC CSR policies should ideally help *level the playing field among other market competitors by pressuring them to adopt similar standards, preventing the use of corruption to gain a market advantage* (Doh, Littell, & Quigley, 2015, p. 114).

Doh et al. highlight Odebrecht SA, Latin America's largest construction, energy and transportation conglomerate, as a case in point on how MNCs can raise social and industrial standards through CSR (Doh, Littell, & Quigley, 2015). This does not resonate with the findings in this paper, in which large corporations like Odebrecht itself were responsible for upholding unethical business practices and culminating in the previously mentioned incarceration of Odebrecht's, now former, chief executive officer. While the authors do address the theory of institutional voids and argue how MNCs can adeptly fill these through CSR programs, they exclude the notion of stakeholder sophistication from their discussion, which is a central element to the void-sophistication challenge in developing countries (Zhao, Tan, & Park, 2013). For example, an unnamed hydroelectric power project initiated by Odebrecht is used to illustrate environmental leadership that *countered the previous prevailing theory that the Amazon was unable to be responsibly developed and therefore untouchable* (Doh, Littell, & Quigley, 2015, p. 117). Published in 2015, the paper makes no mention of stakeholder responses to hydroelectric development in the Amazon in recent years.

To be sure, Odebrecht has won numerous awards for its CSR programs, yet these have typically taken the form of rather self-serving, strategic initiatives. For example, a program for training engineers and other staff in relation to the construction of a hydroelectric power plant in Portugal eventually trained a lot more employees than Odebrecht needed for that particular project (Doh, Littell, & Quigley, 2015). Such discourse on MNC CSR may fit well within a framework of 'Shared Value' (Porter & Kramer, 2006), but from a legitimacy perspective it will require a lot more than strategic CSR efforts to repair legitimacy in the energy sector in Brazil. The notion that *CSR can serve as a sort of "insurance policy" to protect the firm from potential threats from government or other stakeholders* (Doh, Littell, & Quigley, 2015, p. 113) is outdated at best, even within a context of a developing country. The concept of CSR has long evolved into a much more sophisticated understanding of the role of business in society (Castelló & Lozano, 2011), which requires an equally complex approach to legitimacy management.

9.1 Response strategies

It is also worth noticing that a growing public sensitivity to unethical and unsustainable business practices has spurred corporations to engage with the 'sustainable development' (SD) discourse. Scherer and colleagues discuss the approaches to legitimacy undertaken so far, claiming they are *so contradictory that the discussion gives the impression that corporations have to choose one general legitimacy strategy from the three options, i.e. manipulation, adaptation, or moral reasoning* (Scherer, Palazzo, & Seidl, 2013, p. 261). They propose and discuss three different response strategies that corporations may use to effectively manage their legitimacy. The main argument of Scherer et al.'s theory is that corporations in fact have all three strategies, the strategic manipulation, isomorphic adaptation and the moral reasoning (Scherer, Palazzo, & Seidl, 2013), available when managing legitimacy challenges related to sustainable development.

First, the one-best-way approach assumes that firms can always apply one form of strategic rhetoric, in any given context. An example of this is when firms consistently apply strategic manipulation to emphasize its economic impact, regardless of what type of legitimacy challenge it faces. Second, the contingency-approach claims there is one-best-way for each situation. Thus, depending on the different types of legitimacy struggles the corporations face, there is one best solution for each, according to this perspective. Third, the paradox-approach dismisses both of the previous two approaches and suggests that firms, paradoxically, will have to engage all three strategies at once, to effectively manage their legitimacy in each situation (Scherer, Palazzo, & Seidl, 2013).

The paradox-approach was proposed in the face of hyper complex environments where competing demands render the first two approaches inadequate (Scherer, Palazzo, & Seidl, 2013). This discussion serves to weigh the three response strategies against one another, in the context of legitimacy struggles in the Brazilian energy sector. As such, the discussion is both descriptive and normative. It is descriptive to the extent that it explores potential approaches for foreign firms, with a point of departure in the case from the Danish clean-tech industries. However, this discussion will not abstain from applying a normative perspective as well, to try and identify the best possible solution.

The one-best-way approach

The findings showed how some discourses were consistently applied by certain stakeholders to become dominant discourses. A one-best-way approach would suggest that Danish firms should stress for example the energy security of their products and services when exporting to the Brazilian market. Energy security proved a key discourse in the debate on hydropower legitimacy, especially by pro-hydropower stakeholders. Government ministries and the consortia of MNCs overseeing hydroelectric development in the Amazon continuously invoked discourses on the necessity to meet energy demand, in order to secure the development of the country in their justification. From such a strategic rhetorical perspective, the one-best-way approach might indeed grant firms legitimacy within a context of doing business with official government entities.

Another example within this approach would be to adopt an institutional rhetorical strategy for cognitive legitimacy. Firms might choose to consistently adapt their legitimacy strategy to the higher order principles that society takes for granted as legitimating values. For example, a legitimacy strategy could be based on 'environmental protection' as the common order guiding corporate rhetoric. This would no doubt grant legitimacy with stakeholders in the anti-hydropower camp, such as International Rivers, Amazon Watch, WWF Brazil and other environmental groups.

Needless to say that both of the above scenarios leave very limited contextual maneuvering room for managing legitimacy. For example, adopting only the institutional strategy to appease environmental stakeholders would completely disregard the pragmatic perspective and its stakeholders. However, it may be argued that within a context of hegemonic discourses a one-best-way approach may in fact lead to legitimacy, as long as the rhetorical strategy is in line with the dominant discourse imposed by the previously mentioned incumbent elite. For this case, it would imply legitimacy for securing the operational license at a regulatory level, and not necessarily at a broad industry or societal level. In other words, a strategic rhetoric on energy security would please policy makers and facilitate collaboration, but it might not satisfy stakeholders from an environmental perspective.

The contingency approach

The one-best-way approach arguably has considerable shortcomings (Scherer, Palazzo, & Seidl, 2013), which has been confirmed in the above by drawing on examples from the findings to discuss its applicability as a response strategy. Acknowledging this, Scherer et al. proposed the contingency approach, which is far more nuanced in its scope. A contingency approach would have corporations adopt one response strategy for each different legitimacy challenge it faces. In this scenario, firms will need to find the best approach to deal with each specific situation, even if this creates tension and conflict between competing stakeholder demands.

The findings show numerous examples of stakeholders adopting a contingency approach throughout the controversy. The three construction consortia, Norte Energia (Belo Monte), ESBR (Jirau) and Santo Antonio Energia (Santo Antonio) were faced with a multitude of legitimacy challenges from a variety of stakeholders and would adopt different strategies depending on the criticism. For example, the environmental sustainability was a major concern among anti-hydropower stakeholders, yet this takes the form of many different legitimacy challenges. Deforestation has been a recurrent issue related to hydroelectric expansion, to which policy planners and MNCs consistently have responded by taking the institutional approach. The Institutional Director with ESBR said rigid requirements ensured that the environmental impacts of Jirau and Santo Antonio were minimized, and its Communications and Business Development Director added that *the real deforestation is maybe zero* since flooding from the dam would impact cattle ranches and not large areas of rainforest (Washington Post, 2013).

Another example of such strategic adaptation for cognitive legitimacy is found in the planning process of Belo Monte. Drawing plans for the dam complex had the construction site moved several miles from its originally planned position, to ensure less deforestation from the flooding the reservoir. This happened after criticism of Belo Monte's environmental impact, which also saw Norte Energia change the dam to a run-of-the-river design, which drastically reduced the size of the reservoir to minimize environmental impacts. This then sparked criticism from within the power industry itself, that such a design could not store enough water to meet demand during dry season, and thus the 'energy efficiency' theme emerged. The government and the consortia responded to this through a strategic rhetoric, insisting that the power supply was not at threat whatsoever. Given the national importance of energy security, it is no surprise the government chose a 'hardline' strategic rhetoric on the issue of energy efficiency.

The example above demonstrates the challenge of accommodating several competing demands at once. It also reveals the limitations of the contingency approach, however more sophisticated it may be, than the one-best-way approach. The case of pro-hydropower stakeholders applying a one-best-way-approach for each legitimacy challenge they faced, thus taking the contingency approach, ultimately resulted in conflict with a new set of constituents. Scherer et al. concede that *its limitations are apparent in cases characterized by extreme degrees of environmental dynamism, complexity, and heterogeneity of societal demands when corporations are confronted with a multitude of SD issues* (Scherer, Palazzo, & Seidl, 2013, p. 273).

In summarizing the contingency approach, Danish firms could decide to adopt one best strategic approach for each of the themes identified in the controversy. Indeed, it would be a far more manageable prospect than engaging with the paradox approach, as it will be discussed in the following. The inadequacy of both the one-best-way approach and the contingency approach has been demonstrated in the above. Additionally, the case of Odebrecht serves as a reminder that strategic, self-serving CSR policies no longer cut it in Latin America, or at least not in Brazil. For this paper, a far more sophisticated stakeholder environment has been revealed as a counterweight to any institutional voids, that MNCs may previously have exploited.

The paradox approach

The paradox approach is put forward here as the most complete response strategy for Danish clean-tech companies. Given the insufficient merits of the one-best-way and the contingency approaches in a context of *many institutional environments with incompatible demands* (Scherer, Palazzo, & Seidl, 2013, p. 274), the paradox approach replaces the either-or logic of the contingency approach, with a both-and perspective. In other words, by adopting the paradox approach corporations may employ all three rhetorical strategies simultaneously, even if these are in conflict with each other.

An example of this approach is found in the data for this paper. Critics of hydropower have protested the social impact of hydroelectric development in the Amazon, highlighting a number of issues. First, anti-hydropower stakeholders have claimed that hydroelectric dams will not benefit the people in terms of energy provided for development and overall economic prosperity. Government ministries and MNC consortia responded to this using a strategy of manipulating public perception through the 'development' and 'energy security' themes, saying that dams would add thousands of jobs during the construction phase and provide electricity for millions of consumers. For example, the consortium ESBR invoked the development discourse when defending the social impact of dam constructions, stressing that *the impacted population moves from slum without electricity; without sewage, and we put them in new cities built for them* (Washington Post, 2013).

Second, the legitimacy challenges on the social sustainability in the hydropower sector were simultaneously addressed through an accommodating discourse in the form of an institutional rhetorical strategy. The 'fast-track' licensing of hydroelectric dams was accompanied by fairly comprehensive compensation programs to be implemented by the construction consortia, to mitigate any resulting environmental or social damage. The consortia pointed to these compensation initiatives to justify the projects as a whole, adapting their discourses to fit with taken-for-granted societal expectations on human rights and indigenous affairs issues. An ESBR spokesman said that the project had *prompted the consortium building the dam to spend $600 million on social programs and housing for the 350 families that had to be relocated* (Washington Post, 2013). Former energy minister, Edison Lobão, added to the debate that *there is no better energy in the world. Nobody will be removed from where they are living or be in any way inconvenienced. There is a lot of misinformation that is deliberately circulated by people* (BNA, 2012).

Third, the government-led coalition of MNCs engaged in an overall moral evaluation of hydropower as an energy source, while at the same time maintaining both strategic and institutional discourses in their rhetoric. Through a series of public hearings and dialogue with indigenous communities and other stakeholder groups, ministry and MNC officials applied a dialectic rhetoric that should have resulted in the *positive, normative evaluation of the organization and its activities* (Suchman, 1995, p. 579). As the findings have shown, the application of the paradox approach as a response strategy has not resulted in the desired legitimacy.

It may be argued that the Brazilian energy sector is an extraordinary case. The findings reveal a great deal about the correlation between development, power and legitimacy. In the lifespan of a controversy between late 2010-2016, the rise and (relative) fall of hydropower as an institutional field for energy policy has seen competing discourses fight for legitimacy – and winning none. This begs the question of how hydropower for years was successfully maintained as an energy policy, amidst growing discontent from a large number of publics. It is argued here that there is a direct relationship between power and legitimacy, but not necessarily in that order. Scholars have dismissed the notion that power is an input that ensures control over discourse (Bartlett, 2009), yet the findings here suggest that a self-serving, strategic rhetoric is enough to impose hegemonic discourses, if the actor has a) power and b) a legitimate higher order construct. The Brazilian government possessed both until 2014.

As discussed in section 8.1, booming emerging economies may be reluctant to accept new paradigms of sustainable development if it endangers economic growth. Following very prosperous years between 2006-2010, the Brazilian government and the private-sector companies basically owned discourses on development and energy security. One Brazilian citizen contemplated moving from the Jirau construction site to Belo Monte in search for more work and reflected: *These are scary places, but what other choice do I have than to follow the money?* (New York Times, 2012).

In other words, the government coalition had power and a very legitimate higher order construct – economic growth. Thus, maintaining a dominant discourse on hydropower required little more than establishing and repeating the link between energy security and the economic prosperity that more and more Brazilians clamored for. Figure 2 in this paper shows a dip in overall discourses on the topic in 2014, and when the debate on energy picks up again in 2015 new discourses on alternative energy sources emerge stronger. This is most likely the result of the economic growth stagnating up to 2014, before hitting full recession in 2015 and stealing headlines in the process. When economic growth rates disappointed, the government lost its higher order construct that legitimized hydropower.

For this reason, it is argued here that power *is* legitimacy. At the very least, it is worth little in the long run without it. Joseph Nye Jr., a leading scholar on power theory in global affairs, equally acknowledges the role of legitimacy in defining power (Nye, 2011). For this paper's context, power may in fact be an input that ensures some control over discourses, but only to the extent that this is supported by legitimate societal values. As the above discussion on the paradox approach proves, gaining legitimacy is no straightforward matter.

Corporations seeking to apply the paradox approach are *faced with the dilemma of both fixing their own points of view as basis for changing the environment (strategic manipulation), of treating their own points of view as flexible and subject to environmental expectations (isomorphic adaptation) or as subject to an open deliberation (moral reasoning)* (Scherer, Palazzo, & Seidl, 2013, p. 274). Managing these internal tensions will necessarily require some organizational resources and competences. Still, the paradox approach is likely the most promising strategy for Danish clean-tech firms to create legitimacy in the Brazilian market.

As the findings show Danish firms operating in the Brazilian energy market are faced with a multitude of contrasting stakeholder demands and concerns. The 11 themes are illustrative of this. They range from concerns over energy security, energy efficiency and development, to environmental issues and social sustainability, which were also argued to be the five main themes in the controversy. However, if Danish firms are to successfully position themselves in the market as legitimate providers of energy solutions, they will need to address all eleven themes. It is argued here that this may be done using all three rhetorical strategies (of strategic manipulation, isomorphic adaptation and moral reasoning) at once, thus adopting the paradox approach.

For this discussion, the three types of rhetoric are evaluated against the three overall perspectives found in the debate on energy – the pragmatic, environmental and moral perspectives. The strategic rhetoric is discussed as a potential strategy for addressing stakeholder concerns within the pragmatic perspective, the institutional rhetoric for the environmental perspective and third the dialectic rhetoric for the moral perspective. In the following, each perspective is distilled into a number of strategic challenges based on the findings and analyses.

1) For the pragmatic perspective are found the following themes: 'development', 'energy security', 'energy efficiency' and 'economic viability'. As the findings and subsequent analysis found, Brazil needs to pay attention to its energy security to secure its development in the global economy, as energy is accepted as a basic premise for economic growth. Based on the findings, foreign firms will need to respect the fact that emerging markets and developing countries do not posses the same resources as developed countries, e.g. as those within the OECD, in their search for sustainable, green growth.

For the same reason, it is suggested that Danish firms do not rhetorically compromise on these topics. By adopting a strategic rhetoric, Danish clean-tech providers should stress the socio-economic and energy-specific benefits of their products, regardless of what other value proposition was originally intended. Thus, it is suggested that corporations here draw on development as the legitimating higher order construct to support this rhetoric. The pragmatic perspective represents the following strategic challenges in securing legitimacy in the energy sector:

- Secure industrial development and economic growth
- Secure energy supply
- Increase energy efficiency for households, industry and the national grid
- Provide cost-competitive, economically viable solutions

2) For the environmental perspective is found the theme 'environmental sustainability'. This theme was acknowledged as such a major issue in the controversy, and for the Amazon region in general, that is might be addressed as a challenge in itself. Issues such as greenhouse gas (GHG) emissions, natural resources such as water and biomass, flooding and deforestation were among the most prominent. Foreign firms may want to accept that for countries like Brazil, the environment is a resource both to be used and protected.

Therefore, it is suggested that Danish firms adapt to a variety of societal claims and expectations by adopting primarily the institutional rhetoric. New clean-tech actors in the market should stress for example the low-carbon impact of their solutions, and a willingness to conduct proper environmental impact assessments in their planning. The environmental perspective represents the following strategic challenges in securing legitimacy in the energy sector:

- Provide solutions of low GHG emission
- Minimize impact on natural resources
- Improve energy- and climate conditions for consumers
- Conduct proper feasibility studies of environmental impact

3) For the moral perspective the remaining six themes are found: 'social sustainability', 'corporate imperialism', 'policy and planning', 'transparency', 'alternative energy solutions' and 'green growth'. While this perspective may seem rather vague in terms of its content and characteristics, it is useful as a common denominator for engaging in an overall moral evaluation of a given legitimacy issue. Common to all the themes is thus a normative, moral reflection of whether the current energy policies in Brazil are headed in the 'right' direction.

Thus, it is suggested that Danish clean-tech corporations apply a dialectic rhetoric to engage in moral discussions of their role in the Brazilian market: is the service or product of the organization beneficial to the Brazilian economy and society? Are the organization's business ethics of high standard, transparent and open to dialogue, and will the new solution respect environmental and social concerns and local norms and values? The moral perspective represents the following strategic challenges in securing legitimacy in the energy sector:

- Engage in prior and fair consultation with relevant stakeholders
- Demonstrate willingness to respect local standards and values
- Secure open dialogue on workers' rights
- Raise awareness of alternative energy solutions
- Restore legitimacy of energy planning
- Promote green growth

The framework proposed in Table 3 below summarizes the discussion of response strategies vis-á-vis the findings on legitimacy challenges in the Brazilian energy sector.

Table 3: Response Strategy Framework

Response Strategy Framework
Market context: Brazil

Strategic challenge	**Response strategy**	**Solution**	**Higher order**
Secure industrial development & economic growth	Strategic rhetoric	Financial incentives, tax breaks to fund new projects; new technologies provide high-linkage economy and industrial diversification	Development
Secure energy supply	Strategic rhetoric	Grid optimization to include more renewables energy sources; energy efficiency reduces gross consumption	Energy security
Increase energy efficiency	Strategic rhetoric	Smart grid technology reduces transmission losses; metering software and other technology for industry and households	Energy efficiency
Cost-competitive, economically viable solutions	Strategic rhetoric	Smart financing between public funds, private investment and savings from improved energy efficiency	Economic viability
Provide solutions of low GHG emission	Institutional rhetoric	Buildings account for a majority of GHG emissions – retrofit for energy savings; no carbon or methane emissions from wind or solar	Climate
Minimize impact on natural resources	Institutional rhetoric	Circular economy at an industrial level; waste-to-energy; bioenergy	Climate
Improve energy- and climate conditions	Institutional rhetoric	Heating & cooling; smart thermostats; energy efficiency windows	Climate
Ensure proper environmental impact assessments	Institutional rhetoric	Transparent process of conducting feasibility studies; engage consultancies	Transparency
Engage in prior and fair consultation	Dialectic rhetoric	Include local stakeholders, citizens in planning and development from day one; greater livability with climate projects	Transparency

Respect local standards and values	Dialectic rhetoric	Avoid imperialistic rhetoric; consultation before compensation	Social sustainability
Secure workers' rights	Dialectic rhetoric	Work with local partners to secure labor rights; equal and fair pay	Social sustainability
Raise awareness of alternative solutions	Dialectic rhetoric	Showcases; delegations; knowledge sharing platforms; technology expos; pilot projects	Green growth
Restore legitimacy of energy planning	Dialectic rhetoric	Work through transparent public-private collaborations	Transparency
Promote green growth	Dialectic rhetoric	Danish economic growth and flat energy consumption since 1980; regulation and financial incentives spur new industries	Green growth

This framework may have the appearance of a contingency approach, identifying basically one ideal response strategy for each strategic challenge. This is the consequence of having to reduce complexity to further the practical applicability of the framework. In other words, it would be more a cause for confusion than for clarification of strategy deployment, if the framework attempted to apply all three rhetoric types for each strategic challenge. This is not a sudden dismissal of the paradox approach in favor of the contingency approach. On the contrary, *the paradox approach can be understood as an extension of the contingency approach, which can be applied in situations where corporations are simultaneously challenged by a multitude of SD issues and environmental demands are characterized by high dynamism, complexity, and heterogeneity* (Scherer, Palazzo, & Seidl, 2013, p. 275).

For example, Danish firms may apply a strategic rhetoric of energy efficiency, working in addition to the institutional rhetoric applied for cognitive legitimacy in a context where environmental demands are indeed characterized by complexity. As the findings and this discussion have shown, adapting to environmental claims might lead to criticism over energy security or energy efficiency instead. Thus, by combining strategies such claims could be countered.

Finally, it is worth noticing how the framework includes a variety of 'higher orders' in the right hand column of Table 3. From an economy of worth perspective, this paper has shown thus far that legitimacy strategies are only valid to the extent they are backed up by higher orders, which are accepted as desirable by the general public. The Brazilian government was a case in point of how an actor can dominate discourses by means of a) power and b) a legitimate higher order construct. In the absence of both power and a legitimate higher order construct, such as soaring economic growth rates, corporations may instead strategically invoke multiple higher orders to gain legitimacy for each legitimacy challenge they face.

9.2 Institutional repair & field formation

The formation of a concept takes time. Corporate social responsibility remains a disputed concept decades after it first emerged in the literature (Visser, 2014); (Maas & Reniers, 2014). Green growth is today no doubt a buzzword in the global agenda on climate change, but it will take time and effort before it is well understood and applied by scholars, corporations and policy makers alike. Even so, this study shows indications that green growth may in fact be emerging as a new institutional field in Brazil.

Scholars have researched how actors establish and extend new institutional fields by engaging in hegemonic struggles (Van Bommel & Spicer, 2011). For long, the dominant higher order construct of economic growth gridlocked the public debate in favor of continuous expansion of hydropower in Brazil. However, by invoking a large number of different orders of worth, anti-hydropower stakeholders seem to have managed to push the debate towards a discussion on alternative energy solutions. As the Response Strategy Framework in Table 3 shows, a variety of higher orders may be used to legitimize the justification of an alternative energy approach. Over time, clean-tech firms and other actors with a stake in green growth may hope to replace the many different higher orders with just the one: green growth.

However, it is doubtful that the competent agency of stakeholders alone is to be credited with the change in discourses. Anti-hydropower stakeholders and green growth advocates do not per se constitute a social movement with a common purpose. It is likely that 'external shocks', such as the economic crisis and the severe drought of 2014, have played a part in bringing about change at an institutional level (Van Bommel & Spicer, 2011).

A criticism is extended here of the strategic and institutional approaches to legitimacy, for not adequately encompassing the complexities of society and the dynamics of institutional repair. Still, Suchman's notion of the institutional perspective as 'the collective structuration of entire fields' can still be appreciated for this context (Suchman, 1995). This paper has sought to investigate in-depth what such a collective structuration of new fields looks like, from a discursive perspective. While the 'embedded agency' approach offers a more balanced view on the structure-agency issue, there are still under-theorized aspects of legitimacy management (Patriotta, Gond, & Schultz, 2011). Thus, this paper has offered an empirical study first on how stakeholders justify their positions vis-á-vis a public audience and second, how multiple institutional logics are deployed in the process of shifting *from one dominant logic to another* (Patriotta, Gond, & Schultz, 2011, p. 1808).

Figure 4 summarized the dynamics of institutional repair for this case and concluded a gridlock between competing dominant logics. In analyzing the justification processes in relation to a public audience, the media has been acknowledged as a key factor in the controversy and, thus, as a key factor in solving the gridlock. If green growth is to be institutionalized in the Brazilian energy sector, stakeholders must effectively manipulate public perception on green growth as a policy framework. The Financial Times reported on the court rulings of Belo Monte in 2011 and concluded that even *more important will be to win in the case in the court of public opinion – in Brazil and overseas* (Financial Times, 2011). To muster the necessary public support for green growth projects, organizations must acknowledge the media as a stakeholder in its own right.

Finally, it is argued that there are three main aspects that must be addressed before green growth can be institutionalized in Brazil: policy, industry and public support. The Danish story of climate adaptation and green growth emphasized the necessity of public support for the transition, and Brazil will be working hard in the coming years to restore public trust in the political landscape. Nonetheless, there are already positive signs at a policy level that Brazil is contemplating an alternative energy agenda for its development. New regulatory and financial incentives, along with increased funding for energy programs, will send the right signals and speak louder than any public hearing or press conference ever would. Energy Minister Braga's comments demonstrated a clear desire to diversify and strengthen the energy industry from the ground up.

For this, an international transfer of technology and expertise will be required, as Brazil does not yet possess the necessary resources to fully adapt to a clean and resilient economy. The first steps in securing this transfer have been taken, by making the necessary changes at a policy level and sending the right signals internationally of openness and collaboration. Public support may well depend on the early successes of new energy projects and their ability to deliver the promised change. In short, the formation and institutionalization of green growth as new institutional field in Brazil still seems a long way down the line. However, important first steps have been taken for the better as a result of new dominant logics changing the public debate on energy.

10. Managerial implications

It is the hope that this study will serve as practical recommendations for informing corporate strategy. A point has been made throughout that the findings of the research should have practical applicability for executives, managers and other decision-makers reading the paper. This is evident in the main research question, as well as the main theoretical framing. While the problem statement may sound descriptive in that it asks *how* international clean-tech corporations can create legitimacy in a foreign market, the real value lies in the analysis and interpretation of the findings, which are by no means descriptive in nature.

Considering the purpose of practical applicability, it is no coincidence that a theory of corporate response strategies has been used for discussing the findings. The reader of this paper should be able to recognize the guiding thread of 'threes' in the theory as well as the findings. Three types of legitimacy, three types of corporate rhetoric to grant legitimacy and three overall perspectives on legitimacy have been identified in the investigation. The complexity of a market such as the Brazilian must not be underestimated, and the market for climate and energy technology is particularly difficult due to its special role in securing national development. The focus sector of this paper is truly a highly political affair and will likely pose challenges not covered by this study.

Nonetheless, the distillation of a comprehensive data collection and coding process into a series of recommendations for strategy, should prove useful for both large multinationals and small and medium sized enterprises. For the sake of theoretical focus, the research has discussed MNCs exclusively. This is also a consequence of MNCs playing a special role in Latin American societies, as it has been discussed. However, it should be stressed that the results of this study are, from a practical perspective, aimed at any type of corporation with an interest in the climate and energy markets in Latin America.

A corporation of limited resources may use the Response Strategy Framework initially for simply mapping strategic challenges and their potential response strategy in a given market. If competing demands call for it, a paradox approach can be applied as an extension of the contingency approach, provided that the corporation has the internal resources to navigate such contrasting strategies.

At the very best, this study has provided executives and CSR managers with a framework for successfully gaining legitimacy and thus, market shares, in the Latin American energy markets. Indeed, it is argued that most developing and emerging markets worldwide are faced with the same three development challenges as Brazil: securing economic growth and energy supply, protecting precious environmental resources and promoting social inclusion to fight poverty. The findings of the thesis should thus have wider applicability in a broad Latin American context.

At the very least, the methodology of the paper should reverberate with corporate executives, CSR managers and the like. A parallel is drawn between thematic analysis and the field of PR and issues management, where scanning the foreign host market for trends and changes in stakeholder arguments seems highly compatible with the concept of recognizing patterns in information. Boyatzis argues that inductive pattern recognition is a process that is never fully finished (Boyatzis, 1998), and, to be sure, an on-going process of market monitoring will be required to judge the progress and potential of green growth in Brazil.

11. Conclusions

This paper has researched corporate response strategies for legitimacy management in Latin America. It has investigated the concept of legitimacy from a discursive perspective and analyzed how this is socially constructed through stakeholders' justification vis-á-vis a public audience. The role of multinational corporations (MNCs) has been investigated with the purpose of discussing potential response strategies that may grant corporations legitimacy through the application of various types of rhetoric.

The study found that Brazil provided an interesting setting for discussing controversies involving MNCs in contested industries. Latin America's largest economy has proven a paradox of being a green frontrunner as well as mired in domestic political scandals over energy policy at once. The study could thus conclude that stakeholders in the Brazilian energy sector are deeply torn over the pragmatic, the environmental and the overall moral legitimacy of the government's dependency on hydroelectric power generation. Noticeably, the process of data collection and thematic analysis concluded not only discursive division between stakeholders, but also an apparent lack of discourses on how to reach a consensus.

The main finding of the paper has thus been the presence of hegemonic discourses. The research could conclude that dominant discourses helped gridlock the public debate in a stalemate, which excluded any discourses on finding an alternative solution to hydropower. Anti-hydropower stakeholders fought in particular on environmental and human rights issues, while pro-hydropower stakeholders in particular managed to impose a discourse on energy security and development. Both sides seemingly became so entranced with fighting each their cause that they came to address the controversy from a series of micro-perspectives. As the debate did not address the root of the disease, it became enslaved by the symptoms of it.

The void-sophistication theory has been included to explain why corporations frequently encounter legitimacy crises in Latin America. For Brazil, the energy sector is indeed faced with a growing awareness and sensitivity from a multitude of stakeholders, and it has been evident how these put strain on firms through competing demands. At the same time, Brazilian institutions have proven stronger than many expected, amidst the worst political crisis in decades. MNCs thus have less freedom to exploit institutional voids and are subject to both high expectations and criticism from an increasingly sophisticated public.

A comparative market analysis concluded on both opportunities and barriers for Danish firms with an interest in the climate and energy sector in Brazil. From an export perspective, the Brazilian market looks both promising and highly challenging. It has thus been concluded how the current scandal-stricken political and regulatory environment will be difficult to navigate for foreign firms. Additionally, the analysis and discussion have shown that large MNCs played a central part in the controversy, which involved bribery and imperialist tactics in developing hydroelectric projects. Thus, public trust in both politicians and corporations is at a record low in Brazil. However, there are positive signs too that the legislative and regulatory environment is changing for the better, which makes the Brazilian market for climate and energy technology potentially lucrative for international firms with a steady hand and a long-term perspective.

Danish firms may engage this market by adopting the appropriate corporate rhetoric for each legitimacy challenge it faces. Where contrasting demands occur between different stakeholder claims, firms will need to implement several rhetorical strategies at once to effectively manage its legitimacy. The paradox approach is thus concluded as the most effective response strategy for gaining legitimacy within such complex market conditions.

However, it was also concluded that firms might consider applying the three types of rhetoric – the strategic, institutional and dialectic – for the three types of legitimacy challenges respectively that were found in the data. The strategic rhetoric proved useful in discourses on energy security and development within the pragmatic perspective; the institutional rhetoric was often used for cognitive legitimacy within the environmental perspective and dialectic rhetoric was applied to engage in moral reasoning with stakeholders within the moral perspective.

In short, adopting a contingency approach as a starting point was proposed due to its less demanding organizational requirements, as well as the acknowledgement that the paradox approach is 'merely' an extension of the contingency approach. The Response Strategy Framework has been put forward as a tool for mapping strategic challenges faced by corporations in a given market context. It is the result of distilling themes, or patterns of legitimacy challenges, into strategic challenges that each requires one or more rhetorical strategies. In developing the framework it was concluded that corporations will need to invoke a variety of higher order constructs to grant legitimacy for each strategic challenge they face.

In analyzing the dynamics of institutional repair in the controversy, the discursive gridlock proved a hindrance to the eventual establishment of a new social order. Hydropower as an institutional field has been challenged, yet hegemonic struggles have successfully maintained the current energy policies in place, in spite of continuous contestation. The paper has had the secondary objective of investigating the opportunity to institutionalize green growth as a new institutional field in Brazil. It was thus hypothesized that green growth might constitute a legitimate replacement for hydropower, and that Danish firms through the right rhetorical strategies could help provide the technology and knowledge required for the formation of the new field.

The findings have shown that Brazil remains a long way off establishing anything as a new social order. The legitimacy of the current energy policy and its dependence on hydropower has not been repaired, as the gridlock demonstrates. However, as for the opportunity to institutionalize green growth, there are clearly positive indications going forward. The paper can thus conclude progress at a policy level, which is argued to be a vital stepping-stone in subsequently securing industrial advancement and public support. It seems highly plausible that Danish firms could play a positive role in securing progress at an industrial level, while public support in Brazil ultimately may depend on whether the first new energy projects are successful.

Criticism & suggestions for further research

Finally, the paper can show a contribution to the literature on corporate legitimacy in emerging markets. It offers an empirical case study from the green growth industries and contributes to the understanding of legitimacy from a stakeholder perspective. Having synthesized literature on legitimacy, corporate rhetoric, economies of worth and response strategies, this study proposes the basic Response Strategy Framework for empirical testing of the results in a different Latin American context. As it has been argued, the challenges for green growth, such as securing energy supply, protecting environmental resources and fighting poverty are likely to be representative not only for Brazil, but for Latin America as a region.

Hence, it is suggested that future research combine the insights from this study with new theoretical framings to address the potential for green growth in Latin America as a whole. For example, this paper has superficially touched upon issues such as power and field formation. Given Latin America's history of military regimes, a study on power and field formation through social movements might contribute with understanding the region's capacity for change. Also, it is suggested that future studies should research the potential for green growth in Latin America without the bias of discussing and promoting Danish solutions. The framing of this paper has indeed run the risk of forfeiting objectivity in its discussion of green growth. Developing an explicit code has been intended as counterweight to any potential bias, and so the reliability, or consistency of judgment, will be the ultimate judge of the findings.

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Appendix

APPENDIX 1: The Codebook

DATA SAMPLE	ART. DATE	SOURCE	LINK	STAKEHOLDER	CODE	THEME
2010 / earlier						
More than any other major developing economy, Brazil has the natural resources to develop a low carbon energy system in tandem with rapid economic growth.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Energy Economist	**"Natural resources can provide low-carbon energy matrix with economic growth"**	GREEN GROWTH
Yet, according to a report from the country's Getulio Vargas Foundation (FGV), a leading economic research institute, and the UN Environment Program, **the government is not adopting policies and financing systems that allow the full realization of the country's abundant renewable energy resources**.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Getulio Vargas Foundation	**"Policy missed opportunity to realize renewable potential"**	POLICY & PLANNING
"Without changes in the way we look at energy, plan for it and finance it, we are going to dirty up our electricity matrix more than we have to," said Barbara Oliveira, an FGV researcher and one of the study's authors.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Getulio Vargas Foundation	**"Lack of planning and financing results in fossil-fuel based solutions"**	POLICY & PLANNING
"Brazil rightly has a reputation for renewable energy, but right now we are heading in a direction that will reduce or limit the growth of sustainability at a time when we should be increasing renewables."	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Getulio Vargas Foundation	**"Lack of planning limits sustainability"**	POLICY & PLANNING
"Considering the resources we have, the role of renewables in our energy future is very small, the expansion planned very timid," she added. "Solar power for instance is hardly mentioned." In a tropical country that straddles the equator, **solar energy doesn't even register as a separate category in the 10-year energy planning documents** produced by the Empresa de Pesquisa Energetica, the government's central energy planning unit.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Getulio Vargas Foundation	**"Renewables not properly included in planning of energy policy"**	POLICY & PLANNING
Given Brazil's rapid growth in power demand and the political damage that power shortages would have caused, **making sure there is power has been more important to her and her closest aides than where the power comes from**.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Energy Economist on Rousseff priorities	**"Meeting demand is key political focus"**	ENERGY SECURITY
For Adriano Pires, head of the Brazilian Infrastructure Institute, a Rio de Janeiro-based energy think tank, the dirtying up of Brazil's electricity system will be even bigger than the government projections suggest. He also thinks its a good thing. "I'm not saying that I want more carbon dioxide emissions," he said. **"What I'm saying is that even if we want to expand our hydroelectric and wind potential we are going to have to burn a lot more fossil fuels, primarily natural gas."**	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"Fossil fuels a necessity to power expansion of renewables"**	ENERGY SECURITY
Pires says that the giant new hydro dams under construction and planned for the Amazon region are different from the past. **The dams will have smaller reservoirs and require thermal power back-up during dry seasons**. The main new projects under way are the 11,000 MW Belo Monte dam system on the Xingu River and two dams on the Madeira River, with combined installed capacity of 6,400 MW.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"Modern dams require backup energy during dry season"**	ENERGY EFFICIENCY
"In the long term we cannot really expect to keep growing as a country without these dams," Pires said.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"Hydroelectric power needed to grow"**	ENERGY SECURITY
"The restrictions on them though mean they will make us both more sustainable and more dirty." All the dams will have smaller reservoirs than previous projects such as Itaipu, the 14,000 MW installed capacity dam on the Paraguayan border that is the world's second-largest hydrodam.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"Modern dams sustainable - in the long run"**	ENVIRONMENTAL SUSTAINABILITY
"It's a funny thing, we can't really have a bigger source of renewable, sustainable, reliable and cheap hydropower without building more thermal plants," Pires said. **"The new run-of-river dams won't produce at top levels all year round so you'll need gas power."**	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"New run-of-river dams need backup generation"**	ENERGY EFFICIENCY
Nor have they made efficiency, carbon reduction and environmental sustainability their main criteria, he added. **Worse yet, Brazilian energy spending is heavily biased toward building large new projects rather than promoting conservation, small-scale innovation or decentralized generation, he argues.**	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"No political focus on EE and small-scale projects"**	POLICY & PLANNING
"We are slanted to building big projects because the big companies with the power want big projects and they have political power," Pires said. **"Planning can resemble a scramble for the spoils."**	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Brazilian Infrastructure Institute	**"Big corporations influence political projects"**	POLICY & PLANNING

Oliveira agrees: **"For a government that values planning, the government has very little coordination between ministries between industries and between financial agents,"** she said. "The system is going to get dirtier, but we can do a lot more to keep it as clean as possible." As such, it faces the conundrum that all rapidly-developing countries face; how to create wealth and prosperity within the context of reducing carbon emissions. **Brazil is in many ways a leader in renewable energy, but the political heritage of the governing Workers Party remains one that is wedded to large-scale industrialization as the primary means of addressing the country's social inequalities. The 'green economy' has yet to penetrate the Party's consciousness**.	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	Getulio Vargas Foundation	**"Lack of planning and coordination between ministries"**	POLICY & PLANNING
	2010.12.01	Energy Economist	Factiva OD, BM, EN (21)	MEDIA / Energy Economist	**"Big business dominates politics"**	POLICY & PLANNING?

2011

Former President Lula and the current government of Dilma Rousseff have vowed to build Belo Monte, **arguing that it is crucial to Brazil's energy security**.	2011.02.21	IHS Global Insight	Factiva OD, BM, EN (21)	IHS on Rousseff policy	**"Belo Monte a necessity"**	ENERGY SECURITY
IBAMA is adamant that the project (must) not cause irreparable damages to the Amazon and to that end has named 40 different requirements that must be met before it gives final approval. By end January, only 20 had been met.	2011.02.21	IHS Global Insight	Factiva OD, BM, EN (21)	MEDIA / IHS	**"Stringent requirements to protect Amazon not fulfilled"**	ENVIRONMENTAL SUSTAINABILITY
"We really see the battle of the Xingu river as very symbolic," said Atossa Soltani, founder and executive director of Amazon Watch, a US-based activist group fighting the dam. **"Unless the Dilma administration is challenged on Belo Monte, what we're going to be seeing over the next four years is dozens of licences being issued for dams in the Amazon."**	2011.03.03	FT	Factiva OD, BM, EN (21)	Amazon Watch	**"Belo Monte struggle symbolic of future hydro"**	POLICY & PLANNING
Slated to be the world's third biggest hydroelectric facility, **Belo Monte is one of the flagship projects of Ms Rousseff's government, a keystone of her growth acceleration programme**, an ambitious plan to build hundreds of billions of dollars of new infrastructure projects to sustain the rise of Brazil's economy.	2011.03.03	FT	Factiva OD, BM, EN (21)	MEDIA / FT	**"Hydropower key to rise of Brazilian economy"**	DEVELOPMENT
"In order for the Brazilian economy to grow around 5 per cent per year in the next few years, **Brazil needs to add 5,000 megawatts per year to its installed capacity,"** says Mauricio Tolmasquim, of the Brazilian government's Energy Research Company	2011.03.03	FT	Factiva OD, BM, EN (21)	Government's Energy Research Company (part of MME)	**"Energy for economic growth"**	DEVELOPMENT
Brazil's power comes 90 per cent from renewable sources compared with 18 per cent for the world average, according to Mr Tolmasquim.	2011.03.03	FT	Factiva OD, BM, EN (21)	Government's Energy Research Company (part of MME)	**"Renewable energy economy"**	GREEN GROWTH
Protesters argue that Belo Monte will destroy the livelihoods of people living beside the Xingu. It will flood 516 sq km (201 sq miles) and will lower the river's level as it passes between two indigenous reservations.	2011.03.03	FT	Factiva OD, BM, EN (21)	MEDIA / FT	**"Dams destroy livelihoods of indigeneous"**	SOCIAL SUSTAINABILITY
The dam could also suffer from irregular rainfall, such as the drought presently afflicting the Amazon. **Opponents say it will only be able to produce at full capacity for three months of the year**.	2011.03.03	FT	Factiva OD, BM, EN (21)	MEDIA / FT	**"Large scale hydro ineffective; small-scale projects less damaging"**	ENERGY EFFICIENCY
The government should build smaller, less disruptive hydroelectric projects, they say. Environmentalists are also worried the project will attract nearly 100,000 outsiders - **migrant workers and their families, which will lead to conflict with indigenous communities**.	2011.03.03	FT	Factiva OD, BM, EN (21)	MEDIA / FT	**"Social conflict in construction area"**	SOCIAL SUSTAINABILITY
The government counters that the investors are planning to **provide $3.3bn as "social and environmental compensation"** in the area.	2011.03.03	FT	Factiva OD, BM, EN (21)	Government	**"Social and environmental compensation"**	SOCIAL SUSTAINABILITY
But both the government and Norte Energia, which declined to comment on the ruling, know that **more important will be to win the case in the court of public opinion - in Brazil and overseas**.	2011.03.03	FT	Factiva OD, BM, EN (21)	MEDIA / FT	**"Gaining public accept"**	POLICY & PLANNING
Under the most drastic of future climate scenarios, the Belo Monte hydroelectric dam project, which will require more than R$ 20 billion in investment (approximately US$ 12 billion), **might lose more than 80% of its annual revenues by 2050 as a result of diminishing river flow from the Xingu River**.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Climate change erodes hydro revenues"**	ENERGY EFFICIENCY
"As a result of climate change, the likely reductions in river flow in the Xingu will undermine Belo Monte's financial health", stated Carlos Rittl, coordinator of the Climate Change and Energy Program of WWFBrazil.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Financial sustainability threatened"**	ENERGY SECURITY
"Belo Monte could generate much less energy and much less revenue than expected, becoming a financial fiasco", he added. **"The high social, environmental and financial costs should draw the Brazilian government into a wider reflection on whether or not it is actually feasible** to go through with the project", he concluded.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"All eggs in one fragile basket"**	POLICY & PLANNING

By applying different climate models - such as the HadCM3 from the Hadley Center (Great Britain) and the ECHam4 from the Max-Planck-Institute für Meteorologie (Germany) - to these 4 different scenarios, **it is possible to identify a clear and significant reduction in river flow from the Xingu River by 2050**.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Climate change models; predictions of impact"**	ENVIRONMENTAL SUSTAINABILITY
"We had two severe droughts in the Amazon in less than 10 years, in 2005 and again in 2010. **We have to learn from these extreme climate events and adequately include the climate variable in the efforts to expand the electricity producing capacity of the country**.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Extreme climate events affect variables for power production"**	ENERGY SECURITY
Considering these results, **it becomes even clearer how attractive energy efficiency and nonconventional renewable energies, such as wind, solar and biomass, really are**. With the right investment, these alternatives can generate sufficient energy to satisfy the development needs of the country, while minimizing the climate risks of hydroelectric projects", concluded Scaramuzza.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Energy efficiency; alternative solutions attractive"**	ALTERNATIVE ENERGY SOLUTIONS
"The government tends to consider hydroelectric projects one-by-one, which is inefficient when considering all economical, social and environmental aspects", stated Denise Hamú, CEO of WWF-Brazil.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Inadequate energy planning"**	POLICY & PLANNING
WWF-Brazil considers **essential that hydroelectricy expansion be judged under a holistic view** of the entire Amazon basin. An integrated analysis is needed, considering the social and environmental risks involved throughout the rivers.	2011.04.01	WWF	http://www.wwf.org.br/?28983/serious-risks-expected-to-the-belo-m…electric-dam-project-due-to-climate-change-impacts-in-the-amazon	WWFBrazil	**"Integrated approach needed for sustainability"**	POLICY & PLANNING
The continued difficulties that all of these projects face, however, increase the risk of them not being completed on time **as well as raising questions about the wisdom of the government's energy policy, which relies so heavily on large hydro projects** in the Amazon basin to expand the country's generation capacity.	2011.04.06	IHS Global Insight	Factiva OD, BM, EN (21)	MEDIA / IHS	**"Debating government's energy policy"**	POLICY & PLANNING
The fact is pressures are mounting on Eletrobras that moved as partner in several major hydroelectric ventures. **For instance, it is a partner of GDF Suez in the Jirau project which budget was added R$1bil** and should raise the total investments to R$13bil, while the completion deadline would be delayed.	2011.05.24	Valor Economico	VE Factiva BR, BM, EN (9)	MEDIA / Valor Economico	**"Profitability of hydroelectric projects"**	ECONOMIC VIABILITY
But scientists say dams, especially those in the tropics, actually **produce so much methane that they may not be any "cleaner" than power from fossil fuel sources**.	2011.09.06	Deutsche Welle	Factiva BM, CE, BR (27)	MEDIA /Deutsche Welle	**"Hydro unclean climatic impact"**	ENVIRONMENTAL SUSTAINABILITY
The photosynthesis performed by trees takes carbon dioxide out of the atmosphere, storing it in woody mass, Fearnside explained. **"And then if it rots on the bottom of the reservoir, it goes back (into the atmosphere) as methane."**	2011.09.06	Deutsche Welle	Factiva BM, CE, BR (27)	National Institute for Amazon Research	**"Methane reservoirs"**	ENVIRONMENTAL SUSTAINABILITY
Fearnside estimates that a pair of dams on the Xingu River would emit "an average of 11.2 million tons of carbon-equivalent per year." That's more than the annual emissions of the entire city of Sao Paolo and about four times the amount of greenhouse gas emissions from equivalent fossil fuel production.	2011.09.06	Deutsche Welle	Factiva BM, CE, BR (27)	National Institute for Amazon Research	**"Hydroelectric energy heavy GHG emitter"**	ENVIRONMENTAL SUSTAINABILITY
Which means that **"dams like these are not green energy or clean energy,"** Fearnside said.	2011.09.06	Deutsche Welle	Factiva BM, CE, BR (27)	National Institute for Amazon Research	**"Hydro not clean energy"**	ENVIRONMENTAL SUSTAINABILITY
The Brazilian government should undertake **a process of 'free, prior, informed, in a good faith, and culturally appropriate' consultations and consent** with the indigenous people	2011.10.31	EarthRights International	http://www.earthrights.org/blog/when-indigenous-livelihoods-clash-public-energy-demands-who-should-bend	EarthRights International	**"Fair consultation"**	SOCIAL SUSTAINABILITY
They should provide access to a social and environmental impact assessment translated into their respective native languages, and take measures to 'protect their lives and personal integrity' as well as prevent the spread of diseases and crimes arising from the Belo Monte project or caused by a massive influx of outsiders if the project does go forward.	2011.10.31	EarthRights International	http://www.earthrights.org/blog/when-indigenous-livelihoods-clash-public-energy-demands-who-should-bend	EarthRights International	**"Fair impact assessment"**	SOCIAL SUSTAINABILITY
Clearly, there is **a major disconnect between the government's claims and the views of many local and indigenous people** that will be impacted by the dam.	2011.10.31	EarthRights International	http://www.earthrights.org/blog/when-indigenous-livelihoods-clash-public-energy-demands-who-should-bend	EarthRights International	**"Communicative disconnect"**	SOCIAL SUSTAINABILITY
Whether it is taking minerals or wood from the earth, or forever changing the flow of a river, **the impacts to the land and the people who live off that land are profound and permanent**.	2011.10.31	EarthRights International	http://www.earthrights.org/blog/when-indigenous-livelihoods-clash-public-energy-demands-who-should-bend	EarthRights International	**"Harmful extractive industries"**	SOCIAL SUSTAINABILITY

2012

Lower costs for wind power generating and the 9% stake held in the Belo Monte hydroelectric are meant to replace in Brazil coal fed thermal plants and eventually natural gas fossil fuelled utilities.	2012.03.09	Folha de Sao Paulo	"Vale focused in wind power sources"	MEDIA / Folha de Sao Paulo	**"Cost-competitive wind"**	ALTERNATIVE ENERGY SOURCES
Faced with strikes and riots, the government rushes to implement the commitment made by contractors Andrade Gutierrez, Odebrecht and Camargo Corrêa to improve working conditions, respectively, in Belo Monte, Santo Antônio and Jirau. The commitment was signed with President Dilma on March 1 from 12 companies and unions.	2012.03.30	O Globo	Factiva OD, BM, EN (21)	MEDIA / O Globo	**"Government intervention; MNC compliance"**	SOCIAL SUSTAINABILITY
"Brazil's environmental laws used to be strong," says investigative journalist Verena Glass of Reporter Brasil. "But since the Lula administration, they've been progressively weakened, especially in the area of project licensing. And Dilma is doing much of the same. **It's a right-wing philosophy: you have to grow the economy in order to redistribute wealth. This is what is changing our environmental laws, and it's dirty business." This shift in environmental policy is especially disturbing considering Brazil's legacy as a champion of the environment**.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	Verena Glass, Reporter Brasil	**"Right-wing economy is dirty business"**	POLICY & PLANNING
Beginning with the 1988 Constitution, Brazil's legislative branch has passed some of the world's strongest environmental legislation.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"Policy shift marks new regime"**	POLICY & PLANNING
Deforestation and forest degradation account for 45% of Brazil's total greenhouse-gas emissions and studies show that deforestation rates have begun to rise again, even without the alterations to Brazil's Forest Code.5	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"Deforestation harms environment"**	ENVIRONMENTAL SUSTAINABILITY
It would not be the first time that Rousseff had found a loophole around environmental legislation in order to quickly approve a large-scale hydroelectric project.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"Bypassing legislation"**	POLICY & PLANNING
The Movement of Dam-Affected People, however, **claimed that the model was partial to the hydroelectric sector**. Despite the assessment's failure to truly assess the basin-wide impacts of dams, the model was quickly embraced to justify the construction of multiple dams in other basins.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	Movement of Dam-Affected People	**"Legislation partial to industry"**	POLICY & PLANNING
As a result of the new, accelerated timelines, IBAMA is pressured to grant licenses faster, leaving the technicians with less time to correct developers' errors. When they are corrected, IBAMA superiors often eliminate information that could create a liability or a delay in the project timeline. **IBAMA staff are left with no recourse but to grant the license and mandate that the developer mitigate the impacts caused by their faulty impact assessment while they develop the project**.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"'Fast-track' environmental licensing"**	TRANSPARENCY
Largely as a result of this dysfunctional system and the overwhelming political pressure to weaken IBAMAs minimal capacity for environmental regulation, Marina Silva resigned as Lula's minister of the environment in 2008. **Since then, two IBAMA presidents have stepped down after also facing pressure from the Ministry of Mines and Energy to approve licenses for the contentious and highprofile Santo Antonio, Jirau, and Belo Monte dams**. The latter of the IBAMA resignations was in January 2011, during Rousseff's first month in office.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"Political pressure"**	CORRUPTION
THE MOTIVES BEHIND ROUSSeff 's steady campaign against environmental legislation and protection are clear. **She has consistently chosen to embrace development and economic growth over conservation**.	2012.04.01	NACLA Report on the Americas	Factiva OD, BM, EN (21)	MEDIA / NACLA Report	**"Economic growth vs sustainability"**	POLICY & PLANNING
According to Brazil's 10-year energy plan, the country will need to add 70GW to its national grid by 2020. Ventura said 63% of that figure had already been contracted. "The situation is comfortable; there is no reason to be anxious. **We are convinced that the energy demands of Brazil will be safely met."**	2012.04.10	BNA	Factiva AM, EN, JI (50)	Ventura, Planning and Development Sec., MME	**"Comfortable energy supply"**	ENERGY SECURITY
"There is no better energy in the world. Nobody will be removed from where they are living or be in anyway inconvenienced. **There is a lot of misinformation that is deliberately circulated by people,"** Lobão was quoted telling local media.	2012.04.26	BNA	Factiva AM, EN, JI (50)	Edison Lobao, Mining & Energy minister	**"Misinformation; hydro ideal energy source"**	SOCIAL SUSTAINABILITY
President Dilma Rousseff forcefully defended the projects in April, **accusing opponents of living in a "fantasy" realm if they thought Brazil could improve living standards with renewable energy alone**. "I have to explain to people how they're going to eat, how they're going to have access to water, how they're going to have access to energy," Ms. Rousseff said.	2012.05.06	New York Times	Factiva AM, EN, JI (50)	Rousseff	**"Renewable energy economy 'a fantasy'"**	ENERGY SECURITY

'Every effort is made to humanize the conditions for the thousands of men and women working here," said Jose Lucio de Arruda, a director of the venture that will operate Jirau, controlled by the French energy giant GDF Suez in partnership with two Brazilian state-owned electricity companies and Camargo Correa, a construction company.	2012.05.06	New York Times	Factiva AM, EN, JI (50)	ESBR consortium	**"Facilitating human conditions"**	SOCIAL SUSTAINABILITY
'These are scary places," Ms. Layanoya said, **"but what other choice do I have than to follow the money?"**	2012.05.06	New York Times	Factiva AM, EN, JI (50)	Private citizen	**"Hydro-projects an evil necessity"**	SOCIAL SUSTAINABILITY
"We're not anti-dam as a fundamental principal," says Brent Millikan, Brasília-based director of the Amazon program for the non-governmental organization International Rivers, Berkeley, Calif. **"But we do think it should be done responsibly**, with awareness of the effects large dams have on the environment and also on the indigenous people in the Amazon basin who depend on floodplain agriculture and the fisheries."	2012.08.27	Engineering News-Record	Factiva OD, BM, EN (21)	International Rivers	**"Responsible hydro production"**	ENVIRONMENTAL SUSTAINABILITY
"We're not anti-dam as a fundamental principal," says Brent Millikan, Brasília-based director of the Amazon program for the non-governmental organization International Rivers, Berkeley, Calif. **"But we do think it should be done responsibly**, with awareness of the effects large dams have on the environment and also on the indigenous people in the Amazon basin who depend on floodplain agriculture and the fisheries."	2012.08.27	Engineering News-Record	Factiva OD, BM, EN (21)	International Rivers	**"Responsible hydro production"**	SOCIAL SUSTAINABILITY
He says the country's policymakers ignore inconvenient scientific studies, brook no dissent, override injunctive relief with prolonged delays **and guarantee windfall profits for contractors while effectively transferring financial risks to Brazilian taxpayers**.	2012.08.27	Engineering News-Record	Factiva OD, BM, EN (21)	International Rivers	**"Financial risk of public concern"**	TRANSPARENCY
Projects currently under construction include 11 hydroelectric dams totaling 18.7GW, 28 thermoelectric plants (6.87GW) and 87 wind farms (2.29GW), the mining and energy ministry said in a note.	2012.11.20	BNA	Factiva AM, EN, JI (50)	MEDIA / BNA	**"Hydro part of 'renewable projects'"**	POLICY & PLANNING
Located in Porto Velho, Rondônia state (Santo Antonio), the facility's installed capacity is now 644MW, **enough to supply energy to 3mn consumers, the consortium said** in a statement.	2012.12.31	BNA	Factiva AM, EN, SA (21)	Santo Antonio Energia - consortium	**"Energy to consumers"**	ENERGY SECURITY

2013

Below-normal rains since November have depleted reservoirs at hydroelectric facilities to critical levels while consumption hits its seasonal peak. The current situation has brought back memories of Brazil's 2001 energy crisis, when factories and residences were forced to slash consumption amid country-wide blackouts.	2013.01.15	Reuters	Factiva BM, CE, BR (27)	MEDIA / Reuters	**"Drought critical impact on energy"**	ENERGY SECURITY
But that network, which was only meant to be used occasionally, is in full swing today, **with Brazil scrambling to secure supplies of diesel and natural gas, or paying premiums for expensive cargoes of liquefied natural gas (LNG)** in the international market.	2013.01.15	Reuters	Factiva BM, CE, BR (27)	MEDIA / Reuters	**"Dirty, expensive backup generation"**	ENERGY SECURITY
"We have big wind farms ready to operate in the Northeastern, but they still cannot be connected to the grid for lack of transmission lines," said Adriano Pires, an energy expert heading the think tank Brazilian Infrastructure Center.	2013.01.15	Reuters	Factiva BM, CE, BR (27)	Brazilian Infrastructure Institute	**"Lost potential"**	ALTERNATIVE ENERGY SOLUTIONS
"Brazil holds a firm and secure energy stock, fully capable of responding to demand," said energy minister Edison Lobao last week in a disputed press conference in Brasilia.	2013.01.15	Reuters	Factiva BM, CE, BR (27)	Lobao, Energy Minister	**"No threat to energy supply"**	ENERGY SECURITY
Indigenous tribes and environmental groups have cried out against the dam for reasons local and global; the tribes depend on the mighty Xingu River - one of the Amazon's largest tributaries - for transportation, and their livelihoods.	2013.02.05	Gulf Times	Factiva AM, EN, SA (21)	MEDIA/Gulf Times on indigeneous groups	**"Amazon rivers key to local and global wellbeing"**	ENVIRONMENTAL SUSTAINABILITY
Environmental groups say the dam will destroy rain forest that the world needs to breathe. **The builders counter that millions of Brazilians need the electricity**, and construction continues.	2013.02.05	Gulf Times	Factiva AM, EN, SA (21)	Consortia	**"High energy demand"**	ENERGY SECURITY
"Electricity is development," said Joao Pimentel, director of institutional relations for Norte Energia, a consortium of private and state-held companies that plans to begin operating Belo Monte in 2015. **"Without electricity we will go nowhere."**	2013.02.05	Gulf Times	Factiva AM, EN, SA (21)	Norte Energia	**"Electricity equals development"**	DEVELOPMENT
As much as 70% of the dam's power (Belo Monte) will flow to public utilities, sold on the national grid for business and domestic consumption. The other 30% will be divided between shareholders. So how many Brazilian citizens will receive electricity once it trickles down? "It's difficult to say," Pimentel said.	2013.02.05	Gulf Times	Factiva AM, EN, SA (21)	Norte Energia	**"Unclear public energy benefits"**	DEVELOPMENT

"This energy is not for homes, it is for mining." As Brazil expands its economic reach in the world, Salm said, it exports more goods. Aluminum, for instance. "It takes a lot of energy to produce aluminum," he said. "In Japan, they need aluminum but have an energy shortage. So what we are really doing is exporting energy."	2013.02.05	Gulf Times	Factiva AM, EN, SA (21)	Federal University, Altamira	**"Dishonest motivations; energy for industry**	DEVELOPMENT
"The investment to build these plants is very high, and they are to be put in a region which is an icon for environmental preservation, the Amazon," said Paulo Domingues, energy planning director for the Ministry of Mines and Energy. "So that has worldwide repercussions."	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MME	**"Hydroelectric projects have worldwide repercussions"**	ENVIRONMENTAL SUSTAINABILITY
But Brazil is undertaking one of the world's largest public works projects, one that will cost more than $150 billion and harness the force of this continent's great rivers. **The objective is to help the country of 199 million people achieve what Brazilian leaders call its destiny: becoming a modern and efficient world-class economy with an ample supply of energy for office towers, assembly lines, refineries and iron works.**	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MEDIA / Washington Post	**"Public hydroelectric projects to fulfil destiny"**	DEVELOPMENT
"Brazil is a country that's growing, developing, and it needs energy," said Eduardo de Melo Pinto, president of Santo Antonio Energia. **"And the potential in energy production in Brazil is located, for the most part, in Amazonia. And that's why this is important for this project to be developed."**	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	Santo Antonio Energia	**"Amazon (hydropower) is key to meeting energy demands"**	ENERGY SECURITY
But whether the dams are large or small, homesteaders and Indian leaders say **they will cause irreversible changes in a forest that plays a vital role in absorbing the world's carbon emissions and regulating its climate**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MEDIA / "Indian leaders"	**"Dams cause changes in vital forest"**	ENVIRONMENTAL SUSTAINABILITY
Environmentalists say the dams are a throwback, not the kind of projects a modern, democratic country should be aggressively pursuing. **They say Brazil should focus instead on developing wind and solar energy while overhauling existing plants and instituting other reforms to reduce electrical demand**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MEDIA / "Environmentalists"	**"Alternative energy sources like wind and solar are key "**	ALTERNATIVE ENERGY SOLUTIONS
"This is a sort of 1950s development mentality that often proceeds in a very authoritarian way, in terms of not respecting human rights, not respecting environmental law, **not really looking at the alternatives**," said Brent Millikan, Amazon program director in Brazil for International Rivers.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	International Rivers	**"Hydroelectric projects old-fashioned, authoritarian"**	POLICY & PLANNING
Telma Santos Pinto, 53, said she had to leave her home of 36 years, receiving $18,000 as compensation from the companies building Jirau. **"The compensation was very, very low," she said**. "And we were obligated to accept that."	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	Private citizen	**"Insufficient compensation an ultimatum"**	CORPORATE IMPERIALISM
Such laments come up against the hard economic realities that Brazil faces. By 2021, the economy is projected to expand by 63 percent, the energy ministry says. Hundreds of thousands of people are receiving electricity for the first time each year, and a ballooning middle class is consuming more. **Economic planners also predict that Brazil could become the world's fifth-largest economy in a few years.**	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MME	**"Growing energy demand"**	DEVELOPMENT
She (Rousseff) says that Brazil is "privileged" to have so much water and that **it is logical for the country to rely heavily on hydropower**. She counters environmentalists by **arguing that Brazil's energy mix - the country also relies on solar, wind and biomass, all renewable energy sources - is among the world's cleanest**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	Rousseff	**"Hydropower the obvious choice for water-rich Brazil"**	ENERGY SECURITY
"Economic growth is not contrary to the best environmental practices," Rousseff said at the inauguration of one huge dam in October. **"We are proving that it's possible to increase electrical generation and at the same time respect the environment."**	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	Rousseff	**"Energy generation compatible with environmental compliance"**	GREEN GROWTH
The proposed Belo Monte project on the Xingu, a huge dam that has galvanized environmentalists and Hollywood luminaries, **will flood fives times less land than the 29-year-old Tucurui dam**, Brazil's second-biggest, said Domingues, the energy ministry planner.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MME	**"Less flooding from modern dams"**	ENVIRONMENTAL SUSTAINABILITY
Gil Maranhao, the Jirau dam's communications and business development director, said **"the real deforestation is maybe zero" because the flooding has taken out cattle ranches and small subsistence farms rather than large swaths of forest**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	ESBR	**"Near-zero deforestation"**	ENVIRONMENTAL SUSTAINABILITY
He said the $7.7 billion project has created jobs and prompted the consortium building the dam to **spend $600 million on social programs and housing for the 350 families that had to be relocated**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	ESBR	**"Jobs, housing and social programs for affected communities"**	SOCIAL SUSTAINABILITY
"The impacted population move from slums without electricity, without sewage, **and we put them in new cities built for them,"** he said, pointing to Nova Mutum.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	ESBR	**"New cities for affected communities"**	SOCIAL SUSTAINABILITY

Jose Gomes, a civil engineer who is the project's institutional director, **said rigid requirements ensured that the environmental impacts of Jirau and Santo Antonio were minimized**. Building dams, he said, here and elsewhere, is a major priority that will not be derailed.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	ESBR	**"Formal requirements for minimized environmental impact"**	ENVIRONMENTAL SUSTAINABILITY
"Brazil needs two hydroelectric dams like this to provide power each and every year," Gomes said. "We're going to have energy guaranteed."	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	ESBR	**"Hydropower guarantee energy"**	ENERGY SECURITY
Upriver, more than 100 square miles of land were underwater. It was clear that **the mighty Madeira, the biggest tributary of the Amazon, had been tamed**.	2013.02.10	Washington Post	Factiva AM, EN, SA (21)	MEDIA / Washington Post	**"Taming natural resources"**	ENVIRONMENTAL SUSTAINABILITY
"They [the government] want to repress any demonstration that seeks to defend our rights," Xingo Vivo coordinator Antônia Melo da Silva said. "This is a scandal and is the sort of thing you see in a dictatorship."	2013.03.25	BNA	Factiva BM, NE, scandal (6)	Xingo Vivo	**"Repression of civil rights, dictatorship"**	SOCIAL SUSTAINABILITY
An Amazonian community has threatened to "go to war" with the Brazilian government after **what they say is a military incursion into their land by dam builders.**	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	MEDIA / "Amazonian community"	**"Dam projects are military incursion"**	SOCIAL SUSTAINABILITY
The Munduruku indigenous group in Para state **say they have been betrayed by the authorities**, who are pushing ahead with plans to build a cascade of hydropower plants on the Tapajós river without their permission	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	Munduruku Indigeneous Group	**"Betrayal by authorities"**	SOCIAL SUSTAINABILITY
Public prosecutors, human rights groups, environmental organisations and Christian missionaries have **condemned what they call the government's strong-arm tactics**.	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	MEDIA / Hrgroups; environmental orgs.; public prosecutors	**"Strong-arm tactics"**	SOCIAL SUSTAINABILITY
Under Brazilian law, **major infrastructure projects require prior consultation with indigenous communities**. Federal prosecutors say this has not happened and urge the courts to block the scheme which, they fear, could lead to bloodshed.	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	MEDIA / Federal prosecutors	**"Mandatory consultation with indigeneous communities omitted"**	SOCIAL SUSTAINABILITY
"The Munduruku have already stated on several occasions that **they do not support studies for hydroelectric plants on their land unless there is full prior consultation,"** the prosecutors noted in a statement.	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	Munduruku Indigeneous Group	**"Full prior consultation required"**	SOCIAL SUSTAINABILITY
Government officials say that neither researchers nor logistical and support teams will enter indigenous villages. The closest they will get is about 30 miles from the nearest village, Sawré Maybu.	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	MEDIA / "Government officials"	**"Hydropower assessment respectful of indigeneous lands"**	SOCIAL SUSTAINABILITY
Missionaries said the presence of armed troops near Sawré Maybu village, Itaituba, **was intimidating, degrading and an unacceptable violation of the rights of the residents.**	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	MEDIA / "Missionaries"	**"Military presence a violation of residents' rights"**	SOCIAL SUSTAINABILITY
"In this operation, the federal government has been threatening the lives of the people," the Indigenous Missionary Council said. **"It is unacceptable and illegitimate for the government to impose dialogue at the tip of a bayonet."**	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	Indigeneous Missionary Council	**"Illegitimate government engagement"**	SOCIAL SUSTAINABILITY
One of the community's leaders, Valdenir Munduruku, has **warned that locals will take action if the government does not withdraw its taskforce by 10 April, when the two sides are set to talk**. He has called for support from other indigenous groups, such as the Xingu, facing similar threats from hydroelectric dams.	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	Munduruku Indigeneous Group	**"Declaration of war"**	SOCIAL SUSTAINABILITY
With similar conflicts over other proposed dams in the Amazon, such as those at Belo Monte, Teles Pires, Santo Antônio and Jirau, **some compare the use of force to the last great expansion of hydropower during the military dictatorship.**	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	International Rivers	**"Hydropower expansion like military dictatorship"**	SOCIAL SUSTAINABILITY
"The Brazilian government is making political decisions about the dams before the environmental impact assessment is done," said Brent Millikan of the International Rivers environmental group. **"The recent military operations illustrate that the federal government is willing to disregard existing legal instruments intended to foster dialogue between government and civil society."**	2013.04.04	The Guardian	Factiva AM, EN, SA (21)	International Rivers	**"Government willing to disregard existing legal instruments"**	SOCIAL SUSTAINABILITY
"The capacity to store energy - that is, water - is now small for the size of the system." - Mauricio Tolmasquim, Energy Research Agency	2013.05.04	The Economist	http://www.economist.com/node/21577073/print	Energy Research Agency (MME)	**"Capacity for energy storage low"**	ENERGY EFFICIENCY
"The choice between reservoirs and gas is a false one. Reducing transmission losses and modernising older hydropower plants would cut the need for both." - Célio Bermann, USP	2013.05.04	The Economist	http://www.economist.com/node/21577073/print	USP	**"Energy efficiency & grid optimization"**	ALTERNATIVE ENERGY SOLUTIONS
The indigenous protesters are demanding a prior consultation over the environmental impact of the project. The Belo Monte project is located in the Amazonian state of Pará.	2013.05.30	IHS Global Insight	Factiva AM, EN, SA (21)	MEDIA / "Indigeneous protesters"	**"Consultation over environmental impact"**	ENVIRONMENTAL SUSTAINABILITY
Norte Energia has said in the past that **no indigenous lands will be flooded** as a result of the project although it has **conceded there will be an indirect impact on indigenous communities living in the region**.	2013.05.30	IHS Global Insight	Factiva AM, EN, SA (21)	Norte Energia	**"No flooding; indirect impact"**	ENVIRONMENTAL SUSTAINABILITY

Soltani contradicts Brazilian claims of hydro "clean energy." Unlike in New Zealand, large dams in the tropics cause methane emissions, decomposing vegetation and soil in reservoirs. **Amazon Watch is instead promoting a wind and solar energy direction for the entire region**.	2013.06.05	The Press	Factiva BM, Env, Def (40)	Amazon Watch	**"Wind, solar for new energy direction"**	ALTERNATIVE ENERGY SOLUTIONS
"The operating consortiums are responsible and it is their duty to resolve the issue," he said. **"If there is a reduction in energy generation, they are the ones that will lose out financially."**	2013.08.13	BNA	Factiva AM, EN, SA (21)	Lobao, Energy Minister	**"Consortiums responsible are financially responsible"**	ENERGY EFFICIENCY
Untapped natural gas resources in the Amazon basin could be used to reduce Brazil's dependence on hydroelectric power, according to Rondônia state governor Confucio Moura.	2013.08.23	BNA	Factiva AM, EN, SA (21)	Governor Moura of Rondonia	**"Natural gas; reduce dependency on hydroelectric power"**	ALTERNATIVE ENERGY SOLUTIONS
"It would be an excellent solution because **the transmission line is going to be underutilized during periods of low hydroelectric dam levels**," Moura said.	2013.08.23	BNA	Factiva AM, EN, SA (21)	Governor Moura of Rondonia	**"Periodically low hydroelectric energy levels"**	ENERGY EFFICIENCY
Moura added that the 6.9GW Rio Madeira hydroelectric complex, comprising **the Jirau and Santo Antônio plants, could not alone guarantee year-round power supply**.	2013.08.23	BNA	Factiva AM, EN, SA (21)	Governor Moura of Rondonia	**"Failure to guarantee year-round supply"**	ENERGY EFFICIENCY
Santo Antônio is one of two hydroelectric projects under way on the Madeira River. The other, Jirau, started commercial operations at its first turbine earlier this month. Once complete it will have an installed capacity of 3,300 MW. **The two projects are included in the government's growth acceleration programme PAC 2 and are regarded as key projects for ensuring that power supplies expand sufficiently to keep up with demand growth beyond 2015**.	2013.09.25	IHS Global Insight	Factiva AM, EN, SA (21)	MEDIA / IHS	**"Madeira hydropower projects key part of PAC to meet demand"**	ENERGY SECURITY
Even after studying the project for 35 years, the Federal Accounts Tribunal (TCU), the equivalent of the U.S. Government Accountability Office, pointed out, before the dam's concession auction in 2010, that **the Belo Monte project entailed "an elevated level of uncertainty incompatible with the size of the undertaking"**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 1)	TCU	**"Poor risk assessment"**	TRANSPARENCY
"What the consumer cares about is the final price [he pays for energy]. Our estimates are irrelevant", says Maurício Tolmasquim, the president of the state-run Energy Planning Company, responsible for setting the rules of the auction.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 1)	Energy Research Agency (MME)	**"Hydroelectric output; consumer price key in auction"**	POLICY & PLANNING
Never in the history of dam construction in Brazil has a project developer had to concern itself with such an ambitious and, as one would expect, **problematic program to mitigate the environmental and social impacts of a hydroelectric plant**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Unprecedented impact mitigation"**	TRANSPARENCY
Indians, riverbank dwellers, and Altamira residents complain of **not having been adequately consulted about how the Xingu is being utilized**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / "Indians, Altamira residents"	**"Inadequate consultation"**	SOCIAL SUSTAINABILITY
The federal government's answer is to have held 142 events, including four public hearings (in Belém, Altamira, Vitória do Xingu and Brasil Novo) that have attracted 6,000 people; 30 meetings in indigenous people's villages (1,700 participants); and 61 meetings in rural communities (2,100 attendees).	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / "Federal Government"	**"Dialogue; public hearings"**	SOCIAL SUSTAINABILITY
No one expects Ibama's administrators to take this step (and deny the dam an operational license). The federal government is, after all, on both sides of the counter. **The Norte Energia consortium is almost completely comprised of state-owned companies and would suffer economic losses if there were a delay in the project**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Conflict of interest"**	TRANSPARENCY
Within the 130 km² of the reservoir between the Pimental dam and the main powerhouse, **a back-of-the-envelope calculation indicates that 3 million trees are bound to be cut**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Deforestation of construction site"**	ENVIRONMENTAL SUSTAINABILITY
Only in mid-2013 two sawmills began to be commissioned at the construction sites, each with the capacity to process 80 m³ of logs per day. In their absence, until December 2012, **17,700 m³ of timber had been bought by the companies on the market, even though they should, in fact, be selling it**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Ressource efficiency"**	ENVIRONMENTAL SUSTAINABILITY
Pará state accounted for most of the Amazon's deforestation during the 2012-2013 period, with 2,379 km² clear-cut (41% of the total amount of deforestation in Brazil).	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Belo Monte construction impacts deforestation"**	ENVIRONMENTAL SUSTAINABILITY
"Anyone who says that they know what will happen is lying", he (Antonio Neto, Norte Energia) said. In other words, Belo Monte is one big experiment with the fauna and flora of the Big Bend –not to speak of the human local populations who rely on the river for food or recreation and the myriad of doubts about the energy efficiency and the economics of the hydroelectric plant.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	Norte Energia	**"Impact of rainfall patterns unknown"**	ENERGY EFFICIENCY

For the federal and Pará state governments, along with the mayors' offices of the region, **what counts is the influx of billions of dollars in investments and the creation of thousands of jobs** (albeit temporary ones), and the feeling of progress that has galvanized the region.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 2)	MEDIA / Folha de Sao Paulo	**"Money drives motivations"**	DEVELOPMENT
"Chaos", however, is the word most people use, even those who defend the undertaking: chaotic traffic and public security and almost daily energy breakdowns that burn out home appliances.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Chaos"**	SOCIAL SUSTAINABILITY
There is a clear perception that the dam's main positive aspect is job creation (according to 66% of the residents).	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Job creation"**	DEVELOPMENT
44% of the residents think that the city will be worse off when construction ends, a percentage nearly equal to those who believe it will be better off (43%). It's not by chance that this is the same share of residents (43%) who believe that Norte Energia is only partially complying with the improvements and compensatory benefits promised for Altamira.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Social divison"**	DEVELOPMENT
"It's the biggest, ongoing social-environmental project in the world", said Cassandra Molisani, the head of the consortium's social-environmental department. "In the history of Brazilian dams, **there is no record of as extensive and detailed a list [of such projects] as the one required for Belo Monte"**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Norte Energia	**"Social compensatory projects"**	CORPORATE IMPERIALISM
"In any case, the current hospital is big enough to care for 200,000, in accordance with public health standards", says Norte Energia's health manager. Municipal health secretary Maia disagrees: This could statistically be true, but I welcome Norte Energia to spend one day at the hospital with me. **For primary care, a good beginning would be for them [Norte Energia officials] to care for those at construction sites**, without sending their workers to the city".	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Norte Energia	**"Health care system overload"**	CORPORATE IMPERIALISM
"We're already nearing the end of 2013, two years after the company came to the region, and the key pre-conditions are, practically speaking, only now just beginning", complains mayor Domingos Juvenil of the Brazilian Democratic Movement Party (PMDB), elected in 2012.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Mayor Juvenil, PMDB	**"Overdue consortium preparation"**	CORPORATE IMPERIALISM
Norte Energia defends itself by saying that the mayor's office delayed in designating sites and approving construction at them.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Norte Energia	**"Community slowing progress"**	CORPORATE IMPERIALISM
The number of arrests for bodily injury has increased by 40% since 2010, says Cristiano Marcelo do Nascimento, the regional head of the Civil Police.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Civil Police, Altamira	**"Spiking violence"**	SOCIAL SUSTAINABILITY
Deaths caused by traffic accidents are another worsening problem. The road system remains unchanged, even though in three years the fleet of 10,000 vehicles has increased to 40,000, 68% of which are motorcycles. There are few sidewalks and lots of dust. **"In the past, there were four [traffic-related] deaths per year. Now there are three to four per month"**, says Flavio Carneiro, head of the city's Transit Department.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Transit Dept., Altamira	**"Infrastructure; traffic issues"**	SOCIAL SUSTAINABILITY
"I used to earn R$ 1,600 ($695) per month and now I earn R$ 3,200 ($1,390) per month. **I miss the classroom, but I had no perspective [of increasing my income].**	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Private citizen	**"Economic mobility"**	DEVELOPMENT
Middle-class buying power has shot up in the city, thanks to Belo Monte. "Sales have increased by an average of 35%", celebrates Odair Pinho, vice-president of Acepa (the commercial association) in Altamira.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Acepa, Altamira	**"Growing middle-class"**	DEVELOPMENT
The cost of living has increased, with real estate setting the pace: an 80m² house in the heart of Altamira that once cost R$ 200,000 ($87,000), now can't be bought for less than R$ 400,000 ($174,000).	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Rising living costs"**	DEVELOPMENT
Quite a novelty for the northern region of Brazil, in which only 22% of urban residences have basic sanitation. In Altamira, more than two years after the beginning of dam construction, **the basic sanitation works are far from completed.**	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Delays in basic sanitation delivery"**	CORPORATE IMPERIALISM
Public defender Andreia Barreto estimates that around 2,000 families who depended on fishing and agriculture were adversely affected by the dam and most of them indemnified. **"Some were well paid and others were not. Many lost the livelihoods and lifestyles to which they were accustomed.** They don't know what to do with the money", she said.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Barreto, Public Defender	**"Indemnation of local communities; futile compensation"**	SOCIAL SUSTAINABILITY
So she was evicted from the property. "I went to town for a doctor's check-up and **when I returned, my house had been demolished"**, she said.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	Private citizen	**"Forceful eviction"**	CORPORATE IMPERIALISM

The relocation of families is among the Belo Monte compensatory actions facing the longest delays. The original forecast was to begin construction of the houses in 2011, but, once again, the mayor's office delayed in choosing where and on what type of terrain the housing would be built. All of these potters are squatters who plan to demand R$ 200,000 ($87,000) apiece in indemnities, **despite their not having land titles to prove legal occupation. Negotiations with Norte Energia have barely begun. The flooding is forecast for December 2014**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Delayed relocation compensation"**	CORPORATE IMPERIALISM
	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	MEDIA / Folha de Sao Paulo	**"Indemnation; impending flooding"**	CORPORATE IMPERIALISM
"We decided to accept the project as a reality, in part, because its [the dam and reservoir's] original design was much more [socially and environmentally] deleterious. We thought it was time to give up our zealous resistance. We were widely criticized for doing so, but we decided to adopt a spirit of negotiation", justified João Baptista Uchoa Pereira, the foundation's (FVPP) coordinator.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	FVPP - Foundation to Live, Produce and Preserve	**"New hydro projects the lesser evil"**	SOCIAL SUSTAINABILITY
"Belo Monte always concerns us. It brings good things, like the possibility of transforming the municipality, and it brings bad things", says coordinator Uchoa Pereira.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 3)	FVPP - Foundation to Live, Produce and Preserve	**"Hydro projects double-edged sword"**	SOCIAL SUSTAINABILITY
Cassava root cultivation and the flour ground it from are the Indian's main culinary contribution to Brazilian cuisine. **To depend on the white man to put cassava flour on their plates (actually eating bowls made from gourds) is the worst symptom of dependency that the region's Indians, impacted by the dam, have developed in relation to it and Norte Energia**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	MEDIA / Folha de Sao Paulo	**"Power relations; dependency"**	CORPORATE IMPERIALISM
"I pray that the government honors its commitment not to mess with the river anymore, **but in Belo Monte's case history, there's an anthology of commitments made, but not honored"**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	Social Environmental Institute (ISA), Altamira	**"Promises unkept"**	CORPORATE IMPERIALISM
"The government consults, but it constructs, no matter what. When the next dam [on the Xingu] is built, there will be war".	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	Indigeneous citizen	**"False consulting"**	SOCIAL SUSTAINABILITY
Other Kayapó from Pará state began to negotiate with the electric sector, but the deals being discussed foundered this past March. **In a letter addressed to the Eletrobras holding company, they renounced the promise of R$ 4.5 million ($2 million) a year in "dirty money"**, for 26 indigenous communities.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	Kayapó Community	**"Negotiations; bribery"**	CORPORATE IMPERIALISM
"Your word means nothing. End of conversation", says the text. **"Our river doesn't have a price tag. The Xingu is our home and you are not welcome"**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	Kayapó Community	**"Energy not for sale"**	CORPORATE IMPERIALISM
"The Indians let themselves be had. **Many chiefs were bought"**, says a disapproving Elza Xipaya, from Funai in Altamira.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	FUNAI	**"Aversion to avarice"**	CORPORATE IMPERIALISM
"The Indians of the Big Bend were increasingly forgetting that they were Indians. With Belo Monte they discovered that, juridically speaking, they are Indians and began to fight for their rights. **As paradoxical as this seems, this is positive. They developed a political identity"**.	2013.12.21	Folha de Sao Paulo	"The Battle of Belo Monte (chap. 4)	Viveiros, University of Rio de Janeiro	**"Identity politics"**	SOCIAL SUSTAINABILITY
"The way in which houses were built shows that the intended compensation for the harm the dam caused is, in fact, another type of impact. **By sawing timber inside indigenous lands and bringing tons of construction materials to villages, Norte Energia causes an impact rather than compensates for it, as should be the case"**.	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 4)	Heurich, University of Rio de Janeiro	**"Futile compensation"**	CORPORATE IMPERIALISM
Whatever similarity exists between this relationship pattern and that of the Emergency Plan is not coincidental. **It reflects the nature of the white man's attitude: the company gives what it wants and the Indians end up accepting it**.	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 4)	MEDIA / Folha de Sao Paulo	**"Corporate imperialism"**	CORPORATE IMPERIALISM
The geologist Pedro Bignelli, 52, a former Ibama licensing director who now coordinates Norte Energia's indigenous department, is in charge of negotiating a truce and putting the village improvement program back on track. **"I spoke with the Xikrin: 'You are becoming a dependent people,** like those in wheelchairs'", he recalls. "It was a tense meeting, but they understood".	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 4)	Norte Energia	**"Dependency"**	CORPORATE IMPERIALISM
"I was already saying, at that time, that **Brazil had only one alternative, Belo Monte or nuclear energy**. Now both have to be developed".	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 5)	Muniz, engineer	**"Energy required"**	ENERGY SECURITY
At this point (1988), the image being spread was that of a war waged by a powerful state against a group of defenseless Indians, a David vs. Goliath battle that attracted attention and sympathy (for the Indians) from many corners of the globe.	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 5)	MEDIA / Folha de Sao Paulo	**"Media influence"**	SOCIAL SUSTAINABILITY

Flávio Miguez, the deacon of engineers sitting on the influential Brazilian Dam Committee, **affirms that Belo Monte always had an Achilles' heal: its low energy-generating capacity**. That is, the fact that, each year, it would only be able to generate less than half of the energy that its turbines were theoretically capable of producing, were there enough water.	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 5)	Brazilian Dam Committee	**"Low energy-generating capacity"**	ENERGY EFFICIENCY
Weeks before the concession auction, the consortium led by Odebrecht, **announced that it would not be a bidder, alleging that it had calculated that the project would cost R$ 30 billion ($13 billion), 50% more than the official estimate at the time**. The maximum energy tariff accepted by the government for selling energy would not be sufficient to cover that cost.	2013.12.21	Folha de Sao Paulo	The Battle of Belo Monte (chap. 5)	Odebrecht/Norte Energia	**"Economically non-viable"**	ECONOMIC VIABILITY
2014						
Some argue that hydroelectric power has green credentials because it makes use of water - **a free abundant and inherently benign medium**.	2014.06.03	Energy Monitor Worldwide	Factiva BM, CE, BR (27)	MEDIA / Energy Monitor Worldwide	**"Water an abundant ressource"**	ENVIRONMENTAL SUSTAINABILITY
Part of this unease is rooted in a sense that the displacement of thousands of people and the logging of huge areas, the gouging out and crushing of rocks - **in short, the systematic alteration of an ancient landscape with unpredictable final consequences - is not exactly 'clean', either environmentally or, indeed, morally**.	2014.06.03	Energy Monitor Worldwide	Factiva BM, CE, BR (27)	MEDIA / Energy Monitor Worldwide	**"Environmentally, morally unclean energy"**	ENVIRONMENTAL SUSTAINABILITY
The words we use also reflect a moral orientation. In my view, **the crucial and central ingredient of the concept of 'renewable' should be a clear and overt recognition of this moral orientation**, without any lingering taste of guilt.	2014.06.03	Energy Monitor Worldwide	Factiva BM, CE, BR (27)	Internation Water Management Institute	**"Greenwashing concept of 'renewable' energy"**	ENVIRONMENTAL SUSTAINABILITY
The difficulty in covering power demand in the past two years, caused by **a fall in water levels in hydropower reservoirs, creates a need to reorientate energy policy towards a long-term matrix that takes into consideration the complementarity of different sources.**	2014.08.05	Energy Monitor Worldwide	Factiva BR, EP, RE, HY (3)	MEDIA / Energy Monitor Worldwide	**"Rethinking energy matrix"**	ALTERNATIVE ENERGY SOLUTIONS
The dynamics and economics of our industry have changed enormously in the past decade. **Add government policy decisions, the imperative to tackle climate change and the holy grail of affordable, sustainable electricity in emerging as well as developed markets, and the playing field is tilting in favour of green energy**	2014.08.05	Energy Monitor Worldwide	Factiva BR, EP, RE, HY (3)	MEDIA / Energy Monitor Worldwide	**"Drivers of change"**	GREEN GROWTH
The new auctions don't clearly represent a fresh direction in energy policy that takes into consideration the abundant offer of renewable sources and the differences in their technologies and costs. **But there is a favourable expectation in the market that a "new order in energy contracting" will be implemented**, in which not just the price per MWh is taken into consideration in the auctions, but above all the importance of the source, its place in the mix and its complementarity with other sources. **Such a policy will allow the construction of a competitive energy matrix that is secure and sustainable from both the economic and environmental points of view.**	2014.08.05	Energy Monitor Worldwide	Factiva BR, EP, RE, HY (3)	MEDIA / Energy Monitor Worldwide	**"New policies for economically and evironmentally sustainable energy matrices"**	GREEN GROWTH
Ultimately, although there may be some economic and energy benefits to the dam's construction, **when considering the environmental consequences, the human rights costs, and the dam's probable inefficiency, the Belo Monte Dam is not a valuable and just investment**.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Unsatisfactory cost-benefit analysis"**	GREEN GROWTH
Therefore, the deterioration of this prized natural resource will **shake the very foundation of their communities** and be a detriment to their cultural customs and social beliefs.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"River the foundation of communities"**	SOCIAL SUSTAINABILITY
According to some estimates, the Belo Monte will only achieve 40 percent of its potential output.[39] Yet, the government fails to acknowledge this limitation, instead promoting the idea that the dam will supply electricity to 40 percent of Brazil's households with full capacity.[40] Nevertheless, this inefficiency brings up the question of economic viability.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Questionable economic viability"**	ECONOMIC VIABILITY
Furthermore, Norte Energia is a state-owned company, not a private institution; **therefore adding insult to injury, the burden of increased costs will fall on the taxpayers**. Although the government claims that the costs are solely Norte Energia's problem, taxpayers are indirectly funding the project.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Budget overruns burden taxpayers"**	ECONOMIC VIABILITY
Former energy minister and current president, Dilma Rousseff, is **adamant that the project will benefit the Amazonian communities**, referring to it as a "social investment."	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA on Rousseff	**"Hydro projects a 'social investment'"**	DEVELOPMENT

Maintaining a positive stance on the project, Norte Energia and the Brazilian government have effectively negated criticism from the international community and the Brazilian population. **The government "guarantees that no negative impact on these populations will exist."**	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA on Government	**"Guaranteed welfare in hydro projects"**	DEVELOPMENT
Belo Monte and hydroelectricity in general are critical components in solving Brazil's growing energy demands. **In order to reduce emissions and match the country's growing energy demands, the country needs to find renewable energy sources**.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Hydro provides clean and secure energy supply"**	DEVELOPMENT
According to a study undertaken by the energy ministry, **hydropower is appealing because it is readily available, cheap, and renewable**.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA on MME	**"Hydropower easy energy"**	DEVELOPMENT
The largest gain from the construction of the dam is the number of employment opportunities it is creating. There are currently 25,000 people working to build the third largest dam in the world.[53] Fifty four percent of those employed are from Pará, and within that, 32 percent are from the city of Altamira. **Therefore, Norte Energía is offering employment to the local people**.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Job creation; prosperity"**	DEVELOPMENT
Moreover, the dam's **investment and construction will inherently create an economic chain effect** that will boost both the local and national economies.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Economic spill-over effect"**	DEVELOPMENT
However, the jobs will only be present while the dam is still under construction. **Therefore, although there are short-term gains, long-term employment will be non-existent**. Despite this, as of mid-2013, the local population is calling for more jobs and income, and technically, the dam project does indeed provide opportunities.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Dams a short-term economic solution"**	DEVELOPMENT
With the dam's large scale and its destruction of 500 square miles of the Amazon rainforest and rivers, the potential yearly output is much too low. **Norte Energia is undertaking an unnecessarily large operation, when a smaller dam could very well produce similar amounts of electricity**.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Inefficient energy operation"**	ENERGY EFFICIENCY
The final area of disagreement is the 'green' nature of the dam. As previously mentioned, the hydroelectric power plants are part of the initiative to reduce carbon emissions and lead Brazil to a 'greener' future. **Despite the Belo Monte's contribution to renewable energy, the dam seems to create more environmental problems than it fixes**. It might constitute a grander plan to decrease emissions, but it also will injure the environment by felling trees and diverting rivers.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Questionable 'green' energy projects"**	ENVIRONMENTAL SUSTAINABILITY
Ultimately, the hydroelectric plant is not as environmentally friendly as it should be. In light of this situation, **Brazil must utilize its other renewable energy (wind and solar) potential, and reduce the number of already planned hydroelectric power plants**. Brazil's energy security can profit from wind and solar energy sources, even when combined with fewer dams overall.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Utilization of other renewables; solar, wind"**	ALTERNATIVE ENERGY SOLUTIONS
In March at the 25th United Nations Human Rights Council in Geneva, the national coordinator of Brazil's Association of Indigenous Peoples Sônia Guajajara made clear the extent to which human rights have been violated in stating that **"The alliance of economic interests and political power represent a major crisis for the implementation of indigenous rights in today's Brazil."**	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	Brazil Association of Indigeneous Peoples	**"Human rights crisis in Brazil"**	SOCIAL SUSTAINABILITY
There are other solutions to the increased energy demand and the pressing need for greenhouse gas reduction. It is better to explore those, before destroying the most diverse ecosystem on the planet.	2014.08.20	Council on Hemispheric Affairs	Factiva BM, Env, Def (40)	MEDIA / Council on Hemispheric Affairs	**"Explore alternative energy solutions first"**	ALTERNATIVE ENERGY SOLUTIONS
The Energy Ministry said that although the consortium of companies planning the project (Tapajós), including federally run energy company Eletrobras, had completed an economic and environmental impact study, **the consortium had not fully addressed the concerns of nearby indigenous communities.**	2014.09.17	Reuters	Factiva AM, EN, SA (21)	MEDIA on MME	**"Inadequate indigeneous community consulting"**	SOCIAL SUSTAINABILITY
"We understand that these delays are not putting the electric energy market in a tight spot in Brazil," Ventura said.	2014.09.17	Reuters	Factiva AM, EN, SA (21)	Ventura, MME	**"No harm to electric energy market by hydro delays"**	ENERGY SECURITY

2015

Brazilian journalist Claudio Angelo notes that the latest news regarding corruption in Belo Monte and other megadam projects in the Amazon irrefutably demonstrates how **"huge projects that violate environmental legislation, economic order, human rights and good sense, are designed to generate money (for corruption), not energy."**	2015.03.19	International Rivers	http://www.internationalrivers.org/blogs/260	International Rivers	**"Corrupt energy designs"**	TRANSPARENCY

"Energy sources must be diversified and we have to reduce dependency on hydroelectric stations and fossil fuel-powered thermoelectric plants, in order to deal with more and more frequent extreme climate events," the vice president of the non-governmental Vitae Civilis Institute, Delcio Rodrigues, told Tierramérica	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Vitae Civilis Institute	**"Diversified energy sources; reduced dependency on hydroelectric stations"**	ALTERNATIVE ENERGY SOLUTIONS
But **"the biggest reservoir of water is forests,"** said Rodrigues, explaining that **without deforestation, which affects all watersheds, more water would be retained in the soil, which would keep levels up in the rivers**	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Vitae Civilis Institute	**"Deforestation; reservoirs"**	ENVIRONMENTAL SUSTAINABILITY
"Forests are a source, means and end of water flows, because **they produce continental atmospheric moisture and help rain infiltrate the soil, which accumulates water, and they protect reservoirs,"** said climate researcher Antonio Donato Nobre with the Amazon Research Institute.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Amazon Research Institute	**"Deforestation; reservoirs"**	ENVIRONMENTAL SUSTAINABILITY
"In the Amazon, 27 percent of the forest is affected by degradation and 20 percent by total clear-cutting," said Nobre, with the Amazon Research Institute and the National Institute for Space Research	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Amazon Research Institute	**"Degradation; deforestation"**	ENVIRONMENTAL SUSTAINABILITY
"Studies are needed to quantify the moisture transported to different watersheds, in order to assess the climate relationship between the Amazon and other regions," he said. **But in the eastern Amazon region, where the destruction and degradation of the rainforest are concentrated, climate alterations are already visible, such as a drop in rainfall and a lengthening of the dry season**, he noted.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Amazon Research Institute	**"Deforestation; climate alterations; dry season"**	ENVIRONMENTAL SUSTAINABILITY
But the plant's (Belo Monte) **generation capacity could fall by nearly 40 percent by 2050, with respect to the projected total, if deforestation continues at the current pace**, according to a study by eight Brazilian and U.S. researchers published in 2013 by the journal Proceedings of the National Academy of Sciences of the United States	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Brazilian/US researchers - National Academy of Sciences	**"Generation capacity; energy sustainability"**	ENERGY EFFICIENCY
The tendency in the southern part of the Amazon basin is **"more intense events, with more marked low and high water levels"** such as the severe droughts of 2005 and 2010 and worse than usual flooding in 2009 and 2012, said Naziano Filizola, a hydrologist at the Federal University of Amazonas	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Federal University of Amazones	**"Extreme weather events"**	ENVIRONMENTAL SUSTAINABILITY
"Besides modifying water flows, deforestation is linked to agriculture, which dumps pesticides in the river, such as in the Xingú River, where indigenous people have noticed a reduction in water quality," he told Tierramérica	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Federal University of Amazones	**"Deforestation; pollution; water quality"**	ENVIRONMENTAL SUSTAINABILITY
Those two rivers drive the two biggest hydropower stations currently operating in Brazil: Itaipú, which is shared with Paraguay, and Tucuruí. Both are among the five largest in the world. Another example is the São Francisco River, the main source of energy in the semiarid Northeast: **94 percent of its flow comes from the Cerrado**.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	MEDIA / Investing	**"Dry season; hydropower potential"**	DEVELOPMENT
"But **data and studies are needed to verify the link between deforestation in the Amazon and changes in the rainfall patterns** in Brazil's west-central and southeast regions," he said.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	EMBRAPA Cerrado	**"Data and studies; verification"**	ENVIRONMENTAL SUSTAINABILITY
Forests provide a variety of ecological services, **but it is not possible to assert that they produce and conserve water on a large scale**, he said. The treetops "keep 25 percent of the rain from reaching the ground, and evapotranspiration reduces the amount of water that reaches the rivers, where we need it," he added.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	EMBRAPA Cerrado	**"Forsts and water retention; ecological services"**	ENVIRONMENTAL SUSTAINABILITY
"Assessing the hydrology of forests remains a challenge," he said.	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	EMBRAPA Cerrado	**"Hydrology of forests a challenge"**	ENVIRONMENTAL SUSTAINABILITY
But Nobre says **large forests are "biotic bombs" that attract and produce rain**. In his opinion, it is not enough to prevent deforestation in the Amazon; **it is urgently necessary to reforest, in order to recuperate the rainforest's climate services**	2015.04.04	Investing.com	Factiva AM, EN, SA (21)	Amazon Research Institute	**"Reforest to recuperate climatic services"**	ENVIRONMENTAL SUSTAINABILITY
Brazil's devastating drought could have the unexpected consequence of **finally prompting one of the sunniest countries in the world to take solar power seriously**.	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	MEDIA / Investing	**"Climate change forces solar change"**	ALTERNATIVE ENERGY SOLUTIONS
As Brazil now begins the seven-month dry period, when rain is traditionally sparse, the reservoirs in the drought-affected region could fall to as little as 10% of their capacity, which the **new Mines and Energy Minister, Eduardo Braga, admits would be "catastrophic" for energy security.**	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	Braga, Energy Minister MME	**"Drought catastrophic for energy supply"**	ENERGY SECURITY

Ministry officials have calculated they (solar panels) could add up to 15,000 megawatts (MW) of power, which is higher than the maximum capacity of two of Brazil´s latest Amazon megadams Jirau, on the Madeira river, and the controversial Belo Monte, on the Xingu.	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	MEDIA on government officials	**"Solar potential larger than hydro"**	ALTERNATIVE ENERGY SOLUTIONS
Tax breaks for the production of photovoltaic panels have also been promised by Brazil's Energy Minister, who also plans to introduce new rules to encourage the use of solar panels on buildings with large roof areas.	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	Braga, Energy Minister MME	**"Financial incentives for alternatives"**	ALTERNATIVE ENERGY SOLUTIONS
Two more auctions for solar power will be held this year. In the first such auction, held at the end of last year, 31 solar plants were chosen to provide a total capacity of 1,048 MW by 2017. **The price was just under US$90 per MW, among the lowest in the world**.	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	MEDIA / Investing	**"Cost-competitive alternatives"**	ALTERNATIVE ENERGY SOLUTIONS
The 20-year contracts for energy supply involve investments of US$1.67 billion, and **many foreign companies are already jostling to get a place in the Brazilian sun**, in what promises to be a rapidly expanding market in a few years' time.	2015.04.07	Investing.com	Factiva AM, EN, JI (50)	MEDIA / Investing	**"Market opportunity for solar, renewables"**	ALTERNATIVE ENERGY SOLUTIONS
The decision will affect the necessity of covering the high financial costs of the delays in energy which is due to be generated by the plants, **with the consortia responsible for the plants having indicated that the losses caused could be irrecoverable and compromise the economic balance of the contracts**. All three plants were affected by delays in the issuing of licenses, strike action and suspension of work due to protests from indigenous peoples.	2015.04.15	Valor Economico	Factiva AM, EN, JI (50)	MEDIA / Valor Economic	**"Delays compromise economic balance"**	ECONOMIC VIABILITY
The agreement prevents the operator from seeing its cash flow drastically reduced, thus compromising project execution and delivery. **It has emerged that Aneel has left the door open for a similar agreement in the case of the Jirau unit and declared the same would occur with the other two plants** as soon as their appeal requests were processed.	2015.05.11	Valor Economico	Factiva AM, EN, JI (50)	MEDIA / Valor Economic	**"Institutional favoring of consortia"**	TRANSPARENCY
Last week, it was publically disclosed that Dalton Avancini, ex-president of Camargo Correa, testified to public prosecutors that his company paid R$30 million (US$9.6 million) to President Dilma Rousseff's Workers Party (PT) and to Brazil's largest political party, the PMDB, part of the government's ruling coalition, **in exchange for its 15% share of the construction contract for Belo Monte**.	2015.07.02	Amazon Watch	http://amazonwatch.org/news/2015/0702-dirty-business-unraveling-connections-between-brazils-dam-industry-and-corruption-scandal	MEDIA / Amazon Watch	**"Bidding process bribed"**	TRANSPARENCY
Last week, a similar confession was made by Gerson Almada, **a partner in Engevix Engenharia, who paid R$2.2 million to Milton Pascowitch, an operative of the Workers' Party** jailed since May as a result of Operation Lava Jato, in exchange for contracts in the construction of Belo Monte.	2015.07.02	Amazon Watch	http://amazonwatch.org/news/2015/0702-dirty-business-unraveling-connections-between-brazils-dam-industry-and-corruption-scandal	MEDIA / Amazon Watch	**"Bidding process bribed"**	TRANSPARENCY
Meanwhile, ex-President Lula and other high-ranking members of the Workers' Party (PT) have pressured Minister of Justice José Eduardo Cardozo to reign in the Federal Police, putting the brakes on operation Lava Jato. Some party bosses threatened to demand that the minister be fired. **Cardozo has attempted to explain to Lula and his cohorts that the Federal Police is an autonomous institution, and that he doesn't have the authority to interrupt investigations**.	2015.07.02	Amazon Watch	http://amazonwatch.org/news/2015/0702-dirty-business-unraveling-connections-between-brazils-dam-industry-and-corruption-scandal	MEDIA / Amazon Watch	**"Strength of independent institutions"**	TRANSPARENCY
If investigations and criminal indictments contribute to effectively strengthening democratic institutions and the rule of law in Brazil, especially with regard to human rights and environmental legislation, a major victory will have been achieved for the threatened rivers and populations of the Amazon.	2015.07.02	Amazon Watch	http://amazonwatch.org/news/2015/0702-dirty-business-unraveling-connections-between-brazils-dam-industry-and-corruption-scandal	MEDIA / Amazon Watch	**"Corruption charges show institutional strength"**	TRANSPARENCY
The problem is that Ibama does not inspect, "says Arthur Moret, a physicist at the Federal University of Rondônia. **"The company only cut wood that has market value. If you have no value, they leave (it) there (all the) same"**. According to Moret, this is a general problem in building hydroelectric plants in Brazil.	2015.07.30	Reporter Brasil	http://reporterbrasil.org.br/2015/07/amazonia-apodrece-em-lagos-de-novas-hidreletricas/	Federal University of Rondonia	**"Lack of inspection; market rules environment"**	ENVIRONMENTAL SUSTAINABILITY
Socioenvironmental Institute states that **if the government's construction plans for the 2005-2030 period are implemented, the hydro-power dams in the Amazon will account for 67.5 percent of the new power generation** in this country of 203 million people.	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	Socioenvironmental Institute	**"Hydropower generation"**	POLICY & PLANNING
The public **prosecutor's office accuses the company that is building the dam, Norte Energía, of ethnocide** and of failing to live up to requirements regarding indigenous communities, who in protest occupied and damaged some of the dam's installations on several occasions.	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	MPF - Federal Public Prosecutor's Office	**"Ethnocide"**	SOCIAL SUSTAINABILITY
"My family was promised three houses, because we have two married sons," said José de Ribamar do Nascimento, 62, resettled in the neighbourhood of Jatobá, on the north side of Altamira, the first one built for families relocated from areas to be flooded by the reservoir.	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	Private citizen	**"Compensation"**	CORPORATE IMPERIALISM

"We live much better here," said his wife, 61-year-old Anerita Trindade. "Our old house would get cut off by the water when it rained; we had to wade through the water, on little walkways made of rotten boards. **Sometimes there's no water or transportation to get downtown, but now we're on dry land**."	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	Private citizen	**"Social development"**	CORPORATE IMPERIALISM
But Norte Energía has been criticised for delays in providing the promised schools, buses and health posts in the five new neighbourhoods, and for what many say was **an unfair distribution of new housing**.	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	MEDIA / Mehr News	**"Lack of social development; unfair compensation"**	CORPORATE IMPERIALISM
A third challenge for Belo Monte is to effectively combat criticism from voices within the power industry itself, who are opposed to run-of-the-river hydroelectric plants, where **water flows in and out quickly, the reservoirs are small, and during the dry season the power generation is low**.	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	MEDIA / Mehr News	**"Low power generation per capacity; seasonal impact"**	ENERGY EFFICIENCY
Belo Monte will generate on average only 40 percent of its 11,233 MW of installed capacity. To avoid flooding indigenous lands, it reduced the size of the reservoir to 478 square kilometres - 39 percent of what was envisaged in the original plan drawn up in the 1980s	2015.08.01	Mehr News	Factiva AM, EN, SA (21)	MEDIA / Mehr News	**"Low power generation per capacity"**	ENERGY EFFICIENCY
"This guarantees visibility in a strategic area," Rousseff said. **"It allows businesses to plan for the next few years so that they can organize themselves knowing they won't lack energy**. I am certain this plan will help our economic recovery."	2015.08.11	BNA	Factiva OD, BM, EN (21)	Rousseff	**"Energy for economic recovery"**	DEVELOPMENT
"We are in a better situation," Rousseff said. "Prices will progressively be diminished. **We have started to turn off thermoelectric plants thanks to higher reservoir levels."**	2015.08.11	BNA	Factiva OD, BM, EN (21)	Rousseff	**"Hydro regaining strength"**	DEVELOPMENT
Rousseff also outlined plans to speed up permit processes for energy projects in an effort attract private developers. **"We need to improve regulations. The government needs to give the right signals to the private sector,"** she said. "We have to overcome the bottlenecks and we are putting our efforts into that."	2015.08.11	BNA	Factiva OD, BM, EN (21)	Rousseff	**"Competitive, private sector bidding"**	DEVELOPMENT
Paulo Stark president Siemens Brazil, sees growing efficiency pressures in the electric sector **opening windows for new technologies as smart grids and microgeneration of power**, with the company have solutions for both	2015.08.20	Valor Economico	VE Factiva BR, EP (2)	Siemens	**"Opportunities for new technologies"**	ALTERNATIVE ENERGY SOLUTIONS
Nabor Bulhões, Odebrecht's attorney, told Folha that Moro's decision was an affront to the Supreme Court, **arguing that Moro has presented no new evidence justifying the latest custodial order. The new order is "illegal, unconstitutional and abusive,"** he added.	2015.10.20	Folha de Sao Paulo	http://www1.folha.uol.com.br/internacional/en/brazil/2015/10/169608…candal-judge-orders-detention-of-odebrecht-ceo-for-third-time.shtml	Odebrecht	**"Unconstitutional detention"**	TRANSPARENCY
Norte Energia, the consortium responsible for the construction of Belo Monte, denies that the arrival of the plant, manpower and infrastructure have caused increased logging in the region. **"The hypothesis (of) secondary deforestation due to an injection of resources in local economy did not materialize,"** said the plant, in a note sent to Reporter Brasil.	2015.11.28	Reporter Brasil	http://reporterbrasil.org.br/2015/11/derrubar-arvores-para-erguer-hidreletricas/	Norte Energia	**"No 'secondary' deforestation from human activities"**	ENVIRONMENTAL SUSTAINABILITY
Large hydropower projects are not always an effective tool to expand energy access for poor people. **In contrast to wind, solar and micro hydropower, large hydropower dams depend on central electric grids, which are not a cost-effective tool to reach rural populations**, particularly in Sub-Saharan Africa and the Himalayas. Large hydropower projects are often built to meet the demands of mining and industrial projects, despite developers' claims that the energy is intended for the poor.	2015.12.03	Amazon Watch	http://amazonwatch.org/news/2015/1203-10-reasons-why-climate-initiatives-should-not-include-large-hydropower-projects	MEDIA / Amazon Watch	**"Large-scale hydro undemocratic"**	POLICY & PLANNING
Unlike with solar power, **climate funding for large hydropower projects will not bring about further economies of scale, and does not encourage a transfer of new technologies to Southern countries**.	2015.12.03	Amazon Watch	http://amazonwatch.org/news/2015/1203-10-reasons-why-climate-initiatives-should-not-include-large-hydropower-projects	MEDIA / Amazon Watch	**"Large hydro lacks economies of scale"**	POLICY & PLANNING
Wind and solar power have become readily available and financially competitive, and have overtaken large hydropower in the addition of new capacity. As grids become smarter and the cost of battery storage drops, new hydropower projects are no longer needed to balance intermittent sources of renewable energy.	2015.12.03	Amazon Watch	http://amazonwatch.org/news/2015/1203-10-reasons-why-climate-initiatives-should-not-include-large-hydropower-projects	MEDIA / Amazon Watch	**"Renewables render large hydro obsolete"**	ALTERNATIVE ENERGY SOLUTIONS
"Including them in climate initiatives crowds out support for true climate solutions such as wind and solar power, which have become readily available, can be built more quickly than large dams, and have a smaller social and environmental footprint."	2015.12.03	Amazon Watch	http://amazonwatch.org/news/2015/1203-global-coalition-says-mega-dams-should-be-kept-out-of-climate-initiatives	MEDIA / Amazon Watch	**"Hydro crowds out true climate solutions"**	ALTERNATIVE ENERGY SOLUTIONS
"Dam building has exacerbated flood disasters in fragile mountain areas. **At the same time, more extreme droughts increase the economic risks of hydropower**, and have greatly affected countries that depend on hydropower dams for most of their electricity."	2015.12.03	Amazon Watch	http://amazonwatch.org/news/2015/1203-global-coalition-says-mega-dams-should-be-kept-out-of-climate-initiatives	MEDIA / Amazon Watch	**"Fragile environment exacerbates economic risk"**	ECONOMIC VIABILITY

Distributed generation benefits the consumer and the electricity sector: at the center of consumption, **which reduces the need for electrical transmission structure and prevents losses**.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	MME	**"Distributed energy generation efficient"**	ALTERNATIVE ENERGY SOLUTIONS
"This is a bold project, which aims to move investments of R $ 100 billion in the scenario of the current macroeconomics, the next 15 years, **it takes a project built with the contribution, with the participation, and more than that, with the confidence of all who participated**.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	MME	**"Cross-institutional collaborations"**	GREEN GROWTH
In the proposal, which will be thorough and structured by ProGD, **technical schools develop as consideration specific courses designed to prepare human resources able to meet this new market of distributed generation** for design, installation and maintenance.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	MME	**"Ripple effect of new programs"**	GREEN GROWTH
According to the Photovoltaic Solar Energy Brazilian Association (ABSOLAR), every 1 MW of installed solar photovoltaic (centralized and distributed), are made possible between 25 and 30 direct jobs, and the expansion of distributed generation can help to energize and heat the economies of municipalities, states and the Union.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	ABSOLAR	**"Production chains for job creation"**	GREEN GROWTH
The expansion of generation distributed also allows new investments in centralized generation (such as the construction of power plants and wind farms and transmission lines) can be resized and reallocated in time.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	MME	**"Distributed generation a catalyst"**	GREEN GROWTH
The expectation is that the actions to stimulate Distributed Generation do drop by half the cost of the systems installed in 2030, **which will allow the investment return fully to consumers within 10 years**.	2015.12.15	Ministry of Mines and Energy (MME)	http://www.mme.gov.br/en/web/guest/pagina-inicial/outras-notica…os-ate2030;jsessionid=5C4785597614CDAA345AE027CAEF134D.srv154	MME	**"Competitve return on investment"**	GREEN GROWTH

2016

Only between November and December, following approval of the changes in Aneel Normative Resolution 482/2012 and the Program Launch Development of Distributed Power Generation (ProGD) **there was growth of 73% in the projects, which recorded thousand units in October**.	2016.01.27	Diario Oficial	http://www.brasil.gov.br/infraestrutura/2016/01/residencias-que-produzem-sua-propria-energia-eletrica-quadruplica-em-2015	MEDIA / Diario Oficial	**"Regulatory changes spur new energy models"**	GREEN GROWTH
The new rules begin to be worth from 1 March 2016. To deepen actions to stimulate the generation of energy by the consumers themselves, based on sources renewable energy, **the Ministry of Mines and Energy (MME), launched in December 2015, the program Development of Distributed Power Generation (ProGD)**.	2016.01.27	Diario Oficial	http://www.brasil.gov.br/infraestrutura/2016/01/residencias-que-produzem-sua-propria-energia-eletrica-quadruplica-em-2015	MEDIA / Diario Oficial	**"Stimulating distributed power generation; renewable energy sources"**	GREEN GROWTH
With an investment of just over US $ 100 billion by 2030, the program envisages that 2.7 million units consumers may have energy generated by themselves, between homes, businesses, industries and the sector agricultural, which might result in 23,500 MW (about 48 TWh produced annually) of clean energy and renewable, equivalent to half the annual generation of the Itaipu Hydroelectric Plant.	2016.01.27	Diario Oficial	http://www.brasil.gov.br/infraestrutura/2016/01/residencias-que-produzem-sua-propria-energia-eletrica-quadruplica-em-2015	MEDIA / Diario Oficial	**"Investing in new energy models"**	GREEN GROWTH

APPENDIX 2: The Code

CODING & THEMATIC ANALYSIS

"Structure of a Useful, Meaningful Code" (Boyatzis, Richard)

Theme	Definition	Description of theme + special conditions or exclusions	Examples
DEVELOPMENT	Concerns the government's plans to create economic growth and development	Any mention of energy and, particularly, hydropower as a means or necessity to foster development and economic growth. It also includes discourses on economic mobility as a result of construction jobs at dam sites. It excludes discourses particular to meeting energy demand (see instead 'energy security').	"Without electricity we will go nowhere" (Joao Pimentel, Norte Energia); "In order for the Brazilian economy to grow around 5 per cent per year in the next few years, Brazil needs to add 5,000 megawatts per year to its installed capacity." (Mauricio Tolmasquim, Energy Research Agency); "Belo Monte is one of the flagship projects of Ms Rousseff's government, a keystone of her growth acceleration programme, an ambitious plan to build hundreds of billions of dollars of new infrastructure projects to sustain the rise of Brazil's economy" (Financial Times)
ENERGY SECURITY	Concerns the issue of securing energy supply for a growing demand	Any mention of the necessity of producing energy to meet demand, regardless of its type or environmental impact. This includes discourses on hydropower as a vital energy source and the justification of using fossil fuels as short term solution. It relates in particular to the vital role of hydropower in meeting energy demand.	"In the long term we cannot really expect to keep growing as a country without these dams" (Adriano Pires, Brazilian Infrastructure Institute); "Brazil needs two hydroelectric dams like this to provide power each and every year" (Jose Gomes, ESBR); "I was already saying, at that time, that Brazil had only one alternative, Belo Monte or nuclear energy. Now both have to be developed" (Antonio Muni Lopez, Eletrobras)
ENERGY EFFICIENCY	Concerns the issue of installed capacity vs. the actual energy output	Mentions of the expected capability of hydropower to actually deliver the energy required to meet current and future demand. This includes debates on the impact of season rainfall-patterns (dry-season) and the capacity of run-of-the-river turbines.	"The new run-of-river dams won't produce at top levels all year round so you'll need gas power" (Adriano Pires, Brazilian Infrastructure Institute); "The capacity to store energy - that is, water - is now small for the size of the system" (Mauricio Tolmasquim, Energy Research Agency); "Belo Monte always had an Achilles heel: its low energy-generating capacity" (Flávio Miguez, Brazilian Dam Committee)
ECONOMIC VIABILITY	Concerns the potentially unsustainable economic model of hydroelectric power generation	Mentions of how low power generation will not generate the necessary profits from energy production to repay the BNDES. This includes discourses on how budget overruns threaten the economic viability but excludes discourses relating this to corruption (see instead 'transparency').	"As a result of climate change, the likely reductions in river flow in the Xingu will undermine Belo Monte's financial health" (Carlos Rittl, WWF Brazil); "Furthermore, Norte Energia is a state-owned company, not a private institution; therefore adding insult to injury, the burden of increased costs will fall on the taxpayers" (Council on Hemispheric Affairs);
ENVIRONMENTAL SUSTAINABILITY	Concerns the environmental impact on the Amazon ecosystem	Any mention of deforestation, the impact of flooding and methane emissions vs. CO_2 emissions on the environment. This includes discourses debating whether hydroenergy is clean energy. It excludes discourses on the impact on Amerindians affected by dam construction. (see instead 'social sustainability' theme).	"Dams like these are not green energy or clean energy" (Philip Fearnside, National Institute for Amazon Research); "The investment to build these plants is very high, and they are to be put in a region which is an icon for environmental preservation, the Amazon... so that has worldwide repercussions" (Paulo Domingues, Ministry of Mines and Energy); "The real deforestation is maybe zero" (Gil Maranhao, ESBR)
SOCIAL SUSTAINABILITY	Concerns the violations of human right and inadequate consulting with indigeneous communities	Mentions of the impact on livelihood of indigenous tribes affected by the hydropower dam construction projects. It includes discourses on military-style government and the dialogue and communication between policy planners and indigenous communities. It excludes how construction consortia compensate affected communities for dam impact (see instead 'corporate imperialism').	"The Brazilian government should undertake a process of 'free, prior, informed, in a good faith, and culturally appropriate' consultations and consent with the indigenous people" (EarthRights International); "There is no better energy in the world. Nobody will be removed from where they are living or be in anyway inconvenienced. There is a lot of misinformation that is deliberately circulated by people," (Edison Lobão, Energy Minister); "They [the government] want to repress any demonstration that seeks to defend our rights. This is a scandal and is the sort of thing you see in a dictatorship" (Antônia Melo da Silva, Xingo Vivo)
CORPORATE IMPERIALISM	Concerns MNCs' handling of compensation for affected communities	Mentions of construction consortia's suppression of indigenous rights; forceful eviction, bribery programs, strong-armed negotiation tactics. It includes discourses on the ignorance of social and economic compensation. It relates specifically to the consortia's compensation programs, and it excludes how a dam in itself impacts livelihoods (see instead 'social sustainability').	"I went to town for a doctor's check-up and when I returned, my house had been demolished" (Altamira citizen); "The relocation of families is among the Belo Monte compensatory actions facing the longest delays" (Folha de Sao Paulo)
POLICY & PLANNING	Concerns the effects of policy and regulatory planning on the energy sector	Any mention of the impact policy and government planning has on the energy matrix; mentions of business influence on policy. It includes discourses on development and economic growth vs. sustainability, but it excludes discourses on the potential and initiatives for green growth (see instead 'green growth').	"The government is not adopting policies and financing systems that allow the full realization of the country's abundant renewable energy resources" (Getulio Vargas Foundation); "The government tends to consider hydroelectric projects one-by-one, which is inefficient when considering all economical, social and environmental aspects" (Denise Hamú, WWF Brazil); "Worse yet, Brazilian energy spending is heavily biased toward building large new projects rather than promoting conservation, small-scale innovation or decentralized generation" (Brazilian Infrastructure Institute); "It's a right-wing philosophy: you have to grow the economy in order to redistribute wealth. This is what is changing our environmental laws, and it's dirty business" (Verena Glass, Reporter Brasil)

TRANSPARENCY	Concerns the process of auctioning and approving a hydropower project to meet environmental, economic and social standards	Mentions of the process of auctioning and approving the dam projects. This includes discourses on corrupted auctioning processes, contract awardings and investigations into alleged kickback schemes between politicians and construction firms. It excludes discourses on the Petrobras corruption case specifically.	"Since then, two IBAMA presidents have stepped down after also facing pressure from the Ministry of Mines and Energy to approve licenses for the contentious and highprofile Santo Antonio, Jirau, and Belo Monte dams" (NACLA Report on the Americas); "Dalton Avancini, ex-president of Camargo Correa, testified to public prosecutors that his company paid R$30 million (US$9.6 million) to President Dilma Rousseff's Workers Party (PT) and to Brazil's largest political party, the PMDB, part of the government's ruling coalition, in exchange for its 15% share of the construction contract for Belo Monte" (Amazon Watch)
ALTERNATIVE ENERGY SOLUTIONS	Concerns the advocacy of alternative solutions to the current energy policy	Any mention of alternative energy sources being discussed as an alternative to hydropower. This includes discourses de-legitimizing hydropower by stating the cost-competitiveness of e.g. wind and solar. This excludes arguments on environmental impact, as this is categorized under 'environmental sustainability'.	"We have big wind farms ready to operate in the Northeastern, but they still cannot be connected to the grid for lack of transmission lines" (Adriano Pires, Brazilian Infrastructure Institute); "The choice between reservoirs and gas is a false one. Reducing transmission losses and modernising older hydropower plants would cut the need for both" (Célio Bermann, University of Sao Paulo); "The difficulty in covering power demand in the past two years, caused by a fall in water levels in hydropower reservoirs, creates a need to reorientate energy policy towards a long-term matrix that takes into consideration the complementarity of different sources" (Energy Monitor Worldwide)
GREEN GROWTH	Concerns the regulatory and market drivers for green growth	Mentions of policy initiatives for green growth. This includes discourses on Brazil's potential for economic growth combined with high environmental standards. It excludes discourses promoting specific alternative energy sources (see instead 'alternative energy sources').	"Economic growth is not contrary to the best environmental practices" (Dilma Rousseff, President); "More than any other major developing economy, Brazil has the natural resources to develop a low carbon energy system in tandem with rapid economic growth" (Energy Economist); "But there is a favourable expectation in the market that a "new order in energy contracting" will be implemented, in which not just the price per MWh is taken into consideration in the auctions, but above all the importance of the source, its place in the mix and its complementarity with other sources" (Energy Monitor Worldwide)

APPENDIX 3: Media

Media/newspaper

International	*Local*	*Industry-specific*
Buenos Aires Herald	**Folha de Sao Paulo**	Renewable Energy News
Business News America	**Valor Economico**	ReCharge News
Esmerk Latin American News	Agencia Brasil	Energy Economist (Platts)
Reuters	**Reporter Brasil**	**Greenwire News Agency**
New York Times	Agencia Estado	**ENR Engineering News-Record**
The Economist	The Rio Times	Extremetech.com
The Guardian	Diario Oficial da Uniao (Federal Gazette)	HydroWorld.com
Washington Post	Global Post (Brazil news)	**Energy Monitor Worldwide**
Latin Trade Magazine	O Globo	
NACLA Reporting on the Americas	Environmental Law	
Newsweek		
Agence France Presse		
Financial Times		
Dow Jones Global News		
Dow Jones Business News		
Dow Jones News Service		
Mehr News Agency		
Economics Week		
Investing.com		
IHS Global Insight		
Power Finance & Risk		
Gulf Times		
The Press		
Platts Commodity News		
Deutsche Welle		
The New Zealand Herald		
The Canadian Press		
Geographical Magazine		
Conde Nast Traveler		
Foreign Affairs.co.nz		
The Globe and Mail		
Manila Bulletin		
The Irish Times		
The Africa Report		
NPR		
IPS Inter Press Service		

APPENDIX 4: Stakeholders

Government	Belo Monte	Jirau	Santo Antonio	Research inst./Uni/think tanks	Indig. groups/NGOs	Dev. Banks/Int. Org.
MME - Ministry for Mines & Energy	*Norte Energia*	*Energia Sustentavel do Brasil (ESBR)*	*Santo Antonio Energia*	Instituto Acende Brazil	WWF Brazil	BNDES (Brazil Development Bank
EPE (Empresa de Presquisa Energética) (Govt.'s central energy planning unit)	*Eletrobras (state-run utility) & Petros (pension fund)*	Engie SA (former GDF Suez) (40% stake)	Eletrobras (subsidiaries):	Instituto de Energia e Ambiente	International Rivers.org	IMF
MMA - Ministry for the Environment	Andrade Gutierrez (head of CCBM)	Mitsui (20% stake)	Furnas (federal generator) (39% stake)	IEA	CASA	World Bank
Ibama - part of MME, granting licenses for construction	Odebrecht	Eletrobras - Eletrosul (20% stake)	Caixa FIP Amazonia Energia (20% stake)	Energy Monitor Worldwide	AmazonWatch.org	World Bank Climate Investment Fund
Federal Accounts Tribunal (Tribunal de Contas da Uniao - TCU) - investigating how public money is spent	Camargo Correa (15% stake)	Eletrobras - CHESF (20% stake)	Odebrecht (18.6% stake)	Latin American Energy Organization (OLADE)	FUNAI - national indigenous affairs agency	Clean Development Mechanism (CDM)
ANEEL (Agencia Nacional de Energia Eléctrica) - Brazilian Electricity Regulatory Agency	OAS (11.5% stake)	Camargo Correa	Cemig Geracao e Transmissao (controlled by Minas Gerais) (10% stake)	Electrotechnical Energy Institute USP - University of Sao Paulo	Xingu Vivo	Organization of American States' Inter-American Commission on Human Rights
MPF - Federal Public Prosecutors Office	Queiroz Galvao		SAAG Investimentos (12.4% stake)	National Institute for Amazonian Research (note - government body)	Munduruku community (of Tapajós river)	
Center for Energy Research (CEPEL)	Galvao Engenharia			Getulio Vargas Foundation (FGV) (economic research)	Greenpeace International	
Electric Energy Trading Chamber (CCEE)	Engevix (60% stake for turbines)			Brazilian Infrastructure Institute (energy think tank)	Avaaz.org	
	CCBM (Belo Monte Construction Consortium)			ISA - Social-Environmental Institute	Jaguar Institute (Odebrecht partner)	
	Eletrobras (49% stake)			Ethos Institute	Vitae Cvilis Institute	
				Fundacao dom Cabrai (business school)	Amazon Research Institute	
					Socioenvironmental Institute (ISA)	
					Imazon (research NGO)	
					FVPP (Foundation to Live, Produce and Preserve)	
					World Commission on Dams	
					Association of Indigeneous Peoples	