



Institutional Complexity and Sustainable Development in the EU Electricity
Sector

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English Summary

Over the last decades the European Union (EU) electricity sector has undergone numerous radical changes, which have been engendered largely by two key factors. On the one hand, EU countries have increasingly adopted deregulation and privatization policies. By opening the electricity sector to competition and eliminating or diminishing state ownership of electric utilities, these measures have substantially reduced government intervention in this industry. On the other hand, societal concerns about the economic, social and environmental sustainability of electric utilities' activities have risen. Major concerns have been related in particular to CO₂ emissions released by power plants, energy affordability and security of electricity supply. These factors have caused substantial changes in the structure of the sector, challenged core practices and, lately, the very existence of the major European electric incumbents.

Institutions have played a key role in the transformations affecting the EU electricity sector. Institutions are defined as the "regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life". Due to the electricity sector's political saliency, regulative measures, such as deregulation policies or those limiting or incentivizing certain energy sources, have had a major impact on electric utilities. Norms and beliefs, in particular those related to acceptability of government intervention and to the sustainability of specific energy sources, have also affected electric utilities' behaviour, by complementing and influencing regulative pressures. The multiple institutional pressures electric utilities have been facing have often dictated 'incompatible prescriptions'. For example, electric utilities have been required, in order to be considered sustainable, to at the same time increase the amount of electricity from renewable energy sources, ensure a stable electricity supply and maintain low electricity prices. The World Energy Council has referred to this challenge as the 'Energy Trilemma'. Electric utilities also have been confronted with debates within and across EU countries on whether sustainable development objectives in the electricity sector should be reached through market forces or government intervention. As a consequence, electric utilities have had to deal with different degrees of implementation of deregulation and privatization policies across countries.

When organizations, such as electric utilities, are confronted with multiple incompatible institutional pressures, they face 'institutional complexity'. The numerous and divergent institutional pressures to which the EU electricity sector is exposed make it a particularly valuable research setting for investigating how firms manage sustainability-related institutional complexity within and/or across national organizational fields. By answering this research question, the dissertation aims to attain three main interrelated objectives. First, it aims to provide a contribution to institutional theory by increasing its explanatory power of institutional complexity in general and in the context of corporate sustainability in particular. Second, it seeks to contribute to the research of the electricity sector, institutions and sustainable development, by examining crucial phenomena that have revolutionized the industry in the last years and electric firms' responses to them. Third, it aims to shed light on a topic of societal relevance, by examining how firms operating in an industry that

provides a critical good for today's society, electricity, tackle multiple sustainable development issues. A more clear understanding of electric utilities' behaviour will help policy-makers design measures that are more effective in driving the electricity sector towards a more environmentally, socially and economically sustainable future.

The dissertation comprises six chapters. The first two chapters consist of extensive reviews of extant literature on sustainable development (chapter 2) and institutions (chapter 3) in the electricity sector. They are followed by two empirical studies, included in chapter 4 and 5, and a conceptual study, presented in chapter 6.

Chapter 2 presents and discusses the key features of management research exploring sustainable development in the electricity sector. The literature review is conducted by adopting three main lenses. First, since the attainment of sustainable development requires the fulfilment of three principles (i.e. environmental sustainability, social sustainability and economic sustainability), the types of sustainable development issues examined by extant literature have been assessed. This has shown the multifaceted nature of the sustainable development challenge experienced by electric utilities. At the same time, it has also revealed the limited attention assigned, by scholars, to the relationships and tensions between different sustainability issues. Second, as the electricity sector has faced the emergence of novel, greener technologies, subsectors and power producers, the literature adopting an industry emergence or a technological system perspective to the analysis of the electricity sector's sustainability has been examined. Third, since electricity incumbents are the most affected by pressures for more sustainable practices, the literature focusing on their responses to sustainable development demands has been examined, by identifying the range of responses and their drivers illustrated in the studies. Extant research depicts a wide array of responses adopted by incumbent electric utilities, from reactive, through defensive and accommodative, to proactive. Among the factors driving these different responses, market-based coordination or deregulation emerges as a significant but also contentious force, engendering alternatively more or less sustainable behaviours. Although extant literature has provided valuable insights on sustainability in the electricity sector, the chapter identifies three relevant underexplored research topics, which are addressed in chapters 4, 5 and 6. These are: a cross-country perspective to electric incumbents' responses to sustainable development challenges, the evolution of electric incumbents' responses to tensions between sustainable development issues and, finally, the nexus of market, state and sustainable development. As these topics represent critical phenomena that emerged in the electricity sector over the last decade, investigating them is necessary to have a comprehensive understanding of this industry.

Chapter 3 reviews the literature focusing on the electricity sector and institutions, by adopting three main lenses. First, the institutional agents, i.e. the actors engaged in creating, maintaining or disrupting the institutions targeting the electricity sector, are analysed by examining their goals and the type of 'agency', i.e. the actions adopted to influence institutions. Government's agency with regards to deregulation and sustainable development has raised particular attention in extant research. The second lens, consisting of the 'institutional consequences', highlights the impact, on incumbents and new entrants in the electricity sector, of three main types of institutions: deregulation, sustainability-related institutional pressures and national institutional arrangements. The third lens, focusing on the 'institutional processes' (Scott, 2014), shows that those involving the relationship between state- and market-based coordination, the institutionalization of new sectors and sustainable development-related (de)institutionalization have raised the most scholarly

attention. The literature reviewed illustrates the critical role played by institutions and institutional change in the electricity sector, however it has left two relevant topics unexplored. These research topics, which are addressed in the following chapters are: the impact of cross-national institutional heterogeneity and the interaction between the three institutions of state, market and sustainable development.

Chapter 4, the first empirical study of the dissertation, addresses the gaps identified in the literature reviews while, at the same time, providing insights into multinational firms' (MNEs) responses to the institutional complexity faced across countries. The focus is on a key construct of institutional theory, isomorphism, which indicates the process by which organizations adopt behaviours or structures that 'resemble' the ones of other organizations operating in the same institutional environment. Scholars have posited that isomorphism cannot be applied to MNEs because, on one side, they operate in multiple institutional environments, i.e. in multiple countries, and, on the other side, they tend to actively engage in changing institutions instead of passively adapting to them. The challenge posed by MNEs to isomorphism is particularly critical during processes of institutional change i.e. during processes of change of regulations, norms, values or beliefs related to a practice. These changes are often triggered by disruptive events, such as political happenings or disasters. This chapter thus explores the responses of MNEs, embedded in multiple institutional environments, to institutional change after a disruptive event and examines how this challenges the concept of isomorphism. This question is addressed through a multiple case study design. The focal MNEs are German and French nuclear energy companies operating both in the home country and in a shared host country, the UK. In 2011, these companies faced a global disruptive event, the Fukushima nuclear disaster, which engendered different reactions, with regards to nuclear energy, in France, Germany and the UK. The study thus examines the responses of these focal companies to different institutional change processes, related to nuclear energy, enacted in the home and host country before and after the 2011 Fukushima nuclear disaster. The findings signal the limits of the current 'monolithic' conceptualization of isomorphism, which focuses on processes of passive adaptation within one institutional environment. The study suggests new categories of isomorphism, i.e. inter-country isomorphism, intra-country isomorphism and isomorphic agency, which incorporate the institutional complexity MNEs experience and MNEs' active agency. The study also contributes to research on institutions and the electricity sector, by providing insights on the impact of national institutional configurations' heterogeneity on electric MNEs. In addition, by examining countries with different beliefs and norms about nuclear energy's sustainability, it sheds light on how electric firms manage the misalignment of sustainability-related institutional pressures across countries. The study also signals other relevant phenomena which are explored extensively in chapter 5 and 6.

Chapter 5 presents the second empirical study of the dissertation. This research is inspired by the previous chapters, which have shown that electric utilities face multiple, and often conflicting, sustainable development-related demands and are confronted with critical institutional processes related to the framing of different energy sources, such as renewable energies or nuclear power, as economically, socially and/or environmentally (un)sustainable. Extant theoretical frameworks and constructs can only to a limited extent capture these phenomena. Indeed, despite the rising scholarly interest in firms' responses to numerous, incompatible sustainability-related demands, limited attention has been given to the conceptualization of the multiple sustainable development beliefs and related practices firms face and adopt. In addition, extant research has overlooked the dynamics related to firms' adoption of these different sustainable development principles during

strategic change processes, driven by transformations in the business environment. The study thus firstly integrates the corporate sustainability and the institutional logics literature, by conceptualizing a compound and multifaceted sustainable development logic both in terms of 'beliefs' and 'material practices' (Thornton and Ocasio, 1999). The sustainable development logic is constructed as composed of three sub-logics i.e. the environmental, social and economic sustainability logics. Then the sustainable development logic construct is adopted to investigate how firms respond to sustainability-related institutional complexity during a strategic change process engendered by transformations in the business environment. This question is investigated through a single case study research design, examining longitudinally the German electric utility multinational E.ON over 15 years from the date of its foundation. The study analyses whether and how E.ON addressed each sustainable development sub-logic both in terms of values and in terms of practices and what relationship, if any, the company established between the three logics over time. The findings from the E.ON case allow a process model to be developed that is composed of three main stages, each comprising a different type of response to sustainable development-related institutional complexity. These findings, by exploring the core features of sustainability-related institutional complexity in terms of values and practices, and by showing that the adoption of a 'single' and 'sustainable' response to institutional complexity is not always possible, help to provide a contribution to research on institutional complexity. The study contributes also to the literature on the electricity sector, institutions and sustainable development, by providing insights on the complexity electric utilities have been experiencing when called to respond to multiple and divergent sustainability-related demands. Finally, in terms of societal relevance, the study shows that, based on strategic evaluations, electric utilities may decide to abandon key responsibilities they have towards society and the environment. It thus signals the need for policy-makers to rapidly identify and address the changes electric utilities decide to undertake as regards their role in the society.

Chapter 6 consists of a conceptual study which draws from relevant dynamics regarding deregulation and sustainable development emerging in the previous chapters and from additional evidence. The previous chapters have signalled that, although in the last decade the EU electricity sector has been undergoing a deregulation and privatization process, the state-market relationship still presents a high degree of complexity both within and across EU member countries, in particular due to the rise of sustainable development-related concerns. Debates have arisen on whether a deregulated electricity sector would be able to address sustainability issues or, instead, government intervention would be needed. These phenomena in the EU electric field have been used as an illustration to investigate, more widely, the complexity engendered by the irruption of the sustainable development logic in a deregulating organizational field and the processes unfolding from this. Four main state-market-sustainable development logic configurations have emerged, which have provided the basis for a discussion of the interaction between state, market and sustainable development logics in three key contexts. First, the state-market-sustainable development configurations have been discussed with regards to fields where state-owned enterprises operate. Second, the interactions between market, state and sustainable development logics have been examined in a field which is experiencing intra-institutional complexity, due to the compound nature of sustainable development. Third, the state-market-sustainable development configurations have been discussed in the context of the relationship between different organizational fields. This study advances research on institutional complexity by developing insights

on complex and dynamic relationships between market and non-market logics within and across organizational fields. The chapter also contributes to the study of institutions and sustainability in the electricity sector. It sheds light on how a deregulation process may be destabilized by sustainable development concerns as well as on the dynamics unfolding, in a deregulating field, from the need to attain sustainable development objectives. Finally, as regards societal relevance, the study highlights the need for policy-makers in the EU member states to adopt a coherent approach, in terms of state-market balance, in the way they address multiple sustainable development objectives.

Chapter 7 presents the conclusions of this dissertation. It provides an overview of the dissertation and of its main contributions to institutional theory, to the study of the electricity sector and in terms of societal relevance. It also discusses the limitations of the dissertation and the areas that are deemed highly promising for future research both from an academic perspective and for reasons of societal relevance.

References

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