Renewable energy in international business

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Abstract

Purpose – The purpose of this guest editorial is to introduce the special issue entitled "Renewable energy in international business."

Design/methodology/approach – This paper presents a research agenda for the topic of the special issue and provides an overview of the articles included.

Findings – This guest editorial contains a discussion of the themes related to the topic, with a particular focus on the global production and adoption of renewable energies and dark sides of international renewable energy.

Research limitations/implications – This guest editorial considers how the articles included in the special issue contribute to research on renewable energy in international business and provides an avenue for future studies for a broader impact.

Originality/value – The discussion raises two important research streams that have remained overlooked in international business research, namely, global production and adoption of renewable energies and dark sides of international renewable energy. This guest editorial also highlights the potential of international business research to become more relevant by incorporating conceptual, methodological and empirical insights that inform the multidisciplinary community of renewable energy researchers.

Keywords Renewable energy, Climate change, Fossil fuel phase-out, Corporate sustainability, Sustainable Development Goal 7, SDG 7

Paper type Literature review

Introduction

Renewable energy sources are continually restored by nature and derived directly (thermal and photovoltaics) or indirectly (wind and hydro) from the sun or other natural mechanisms of the environment (geothermal and tidal energy). Renewables are a fundamental factor for

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decarbonizing economies. Renewable energy excludes resources derived from fossil fuels, waste products from fossil sources and waste products from inorganic sources (Ellabban *et al.*, 2014). As a result, renewable energy is, to a large extent, climate-neutral and resource saving.

Access to renewable energy is not only an environmental issue but also crucial in achieving development and reducing poverty. Multinational enterprises (MNEs), especially those operating in institutionally weak countries, have great potential in contributing to the economic and social development of economies through their corporate social responsibility (CSR) portfolio (Barkemeyer and Figge, 2014; Forcadell and Aracil, 2019; Gonzalez-Perez and Leonard, 2013; Hamprecht and Schwarzkopf, 2014; Hult *et al.*, 2018; Pinkse and Kolk, 2012; Shinkle and William, 2012). After 2015, with the launch of the 17 United Nations' Sustainable Development Goals (SDGs) (United Nations, 2015), the governments of several countries oriented their national and regional development plans and a large number of companies aligned their corporate strategy to the SDGs (Gomez-Trujillo and Gonzalez-Perez, 2020; Hult *et al.*, 2018; Park *et al.*, 2020; van Zanten and van Tulder, 2018; Witte and Dilyard, 2017).

The development and adoption of renewable energy is one of the answers to the most unrelenting social and environmental challenges, especially those linked to climate change (Chaisse, 2016; Elliot, 2000; Gonzalez-Perez and Leonard, 2013; Guess, 2010; Pinkse and Kolk, 2008). Good news is that around US$300bn were invested in renewable energy worldwide in 2017, accounting for two-thirds of power generation spending (IEA, 2018). In state policies scenario, investment in renewables will reach around US$10tn between 2019 and 2040 (IEA, 2019). Nonetheless, after several years of growth in investment and the adoption of the use of renewable energy, in 2018, there was a slight decrease in global investment in renewable energy and energy efficiency (IEA, 2018). This decrease was associated with changes in the incentive policies for the adoption of photovoltaic solar energy in China and had worldwide repercussions (idem). The International Energy Agency (IEA, 2018) warned that if the decline in global investments continues, there is a threat that the goals set for climate change, air quality and energy security will not be met. Nevertheless, different studies have found that renewable energy could power the world by 2050 (Letcher, 2020; Wood, 2020). Therefore, more research is needed to support actions that can solve important societal and environmental questions that are associated with climate change.

International business (IB) scholars should not be free of such responsibility. IB researchers are invited to conduct more research to increase the understanding of some of the biggest questions of our lifetime (Dörrenbächer and Michailova, 2019). And this should be quite natural, given the international linkages that surround the renewable energy industries. Though the production and consumption of renewable energy may appear local, most of the production of technology and other resources, financing as well as regulation have international roots (Kaartemo, 2016). Further, several major MNEs such as Tata Motors, IKEA Group, AEON, Akso Nobel, H&M and many others have already announced their transition to renewable energy sources (RE100, 2018). Moreover, international agreements influence the global renewable energy market (the Paris Climate Change Agreement was signed by 194 nations in 2015). Nonetheless, these agreements have to be locally implemented and countries have different capacities and institutional regulatory environments for attracting (and sometimes distracting) renewable energy investments and to drive environmental innovations (Gonzalez-Perez, 2016). However, there is little evidence that these agreements between governments have achieved satisfactory results in the reduction of greenhouse gases (Aldy, 2015). The ineffectiveness of these multilateral

initiatives may be because of lack of strong guidelines to companies to develop and use technologies that dramatically reduce emissions (Patchell and Hayter, 2013).

The industry's institutional environment (Mäkitie *et al.*, 2019) or consumers' choices on the market (Rommel *et al.*, 2016) can trigger the transformation of industries that have traditionally depended on fossil fuels. This argument underlines the importance of having a complementary approach between shaping consumers' preferences, regulatory frameworks and the policies that accompany the successful transition from fossil fuel to the penetration of renewable energies. This also highlights the potential of academic fields, such as IB and marketing, to play a crucial role in supporting market actors to change their behavior across the globe. In other words, there is a need for research streams that enable us to study the role of new renewable energy technologies in shaping markets.

Despite the need for understanding renewable energy business as a complex global phenomenon, linking both technology and social realms, there is a general shortage of research in addressing environmental challenges from an IB perspective. The existing research on renewable energy markets is mostly conducted within country boundaries, without interest in exploring the cross-border dynamics (Kardooni *et al.*, 2018; Kaplan, 2015; Lund, 2009; Renn and Marshall, 2016; Wiser and Pickle, 1997; Wüstenhagen and Biharz, 2006). These studies focus on the development of current status, public policies and future potential of individual countries. Only a few studies have been published on how IB practices or geopolitics influence the investments, competitiveness and MNE interaction in the era of "energy transition" (Kolk, 2015, 2016).

This is unfortunate. Studies on renewable energy can open up new perspectives on how international opportunities are discovered and created (Mainela *et al.*, 2014). Also, as renewable energy attracts impact investors (Bugg-Levine and Emerson, 2011), financiers who make investments to generate social or environmental impacts alongside a financial return, studies in renewable energy may challenge the current monetary-oriented focus in international finance research (Ockenden and Ye Zou, 2016). Furthermore, being heavily influenced by national decision-making and local stakeholders, studies on renewable energy can critically depict institutional work – how institutions are created, maintained and disrupted (Lawrence *et al.*, 2011) and how international markets are created and shaped. Instead of focusing primarily on local transformations, IB research could provide new insights on the global developments of renewable energy markets. Finally, the linkage between renewable energy and IB scholarship can further advance our understanding of CSR corporate sustainability and the thematic area of renewable energy, itself (Becker-Ritterspach *et al.*, 2019; Ling, 2019).

This guest editorial introduces the special issue entitled, "Renewable energy in international business" by presenting a research agenda for this topic and providing an overview of the articles included. The discussion aims at encouraging the IB community to do more to fight against climate change and highlights two essential research streams that have remained so far overlooked in research, namely, global production and adoption of renewable energy and dark sides of international renewable energy.

Global production and adoption of renewable energy

Evidence shows that climate change is unavoidable without a drastic reduction in greenhouse gases emissions from fossil fuels emissions. However, there are abundant market failures around greenhouse gases and constraining greenhouse gas emissions still heavily relies on good intentions (Covert *et al.*, 2016). Even though the share of electricity generated by renewables is growing faster than any other source (Berke, 2017), unfortunately, the era of oil and fossil fuels is not over (IEA, 2018). Fossil fuel subsidies

amounted US$5.3tn and it is equivalent to 6.5% of global GDP in 2015 (Coady *et al.*, 2017). Nevertheless, it is estimated that at least 40% of the planet's power will come from renewable sources by 2040 (IEA, 2018), and by 2050, the entire planet could be powered from renewables (Wood, 2020). While indicating a bright future for renewable energy, these statistics also reveal that there has been some lag in the production and adoption of renewable energy internationally.

Renewable energy and its technology is produced by MNEs from the most advanced countries. Attracted by the future potential, several multinationals from developing and emerging markets have succeeded in becoming global players in the renewable energy sectors (Lv and Spigarelli, 2016; Vaccarini *et al.*, 2017). For instance, the Chinese solar photovoltaic companies Hanergy and Trina Solar have rapidly been positioned both in China and abroad with substantial foreign direct investments in Asia, Africa and Latin America (Mathews and Tan, 2015). Also, there are major Indian firms such as Suzlon in the wind power industry. As a result, the field of renewable energy has become truly global by nature, from the production of technology to the generation of energy, which makes it particularly attractive to IB research.

Though being a nascent area of scholarly inquiry, there is already some evidence on that the successful global penetration of renewable energy depends on a complex myriad of factors. Amongst those are not only local contexts and experiences but also different renewable energy technologies (Abdmouleh *et al.*, 2015). In addition, there is a need for appropriate monetary incentives (subsidies and tariffs) for renewable energy production (Bunn and Muñoz, 2016; Freitas *et al.*, 2012; Nicolini and Tavoni, 2017). This is also related to the funding available for the internationalization of renewable energy companies (Manesh and Rialp-Criado, 2017). On the institutional side, there are still trade barriers and performance requirements that regulate the market and that influence the development of renewable energy (Chaisse, 2016). One solution could be government support to overcoming liabilities of foreignness in the renewable energy sector aiming internationalization (Schwens *et al.*, 2010; Zhang *et al.*, 2015).

We applaud these contributions for initiating the debate on international renewable energy. Notably, they highlight the importance of policymakers in the global renewable energy market. Altogether, this is a new and critical view on IB that, in the past, has firmly focused on MNEs, their subsidiaries and organizational capabilities to explain many of the IB phenomena. Aligned with the network view of IB (Sharma and Blomstermo, 2003), the research on renewable energy suggests that one can have a more holistic understanding of international markets, when the viewpoints of multiple actors are integrated into a single study.

Though there is some initial research that links renewable energy markets and IB, more is needed to have a broader understanding of global production and adoption of renewable energy. Hence, the guest editors would also like to encourage IB scholars to consider the dark sides of international renewable energy. While different viewpoints to the contexts, needs and benefits need to be incorporated in IB studies, there is a threat that the conflicts and tensions among market actors remain understudied. By incorporating the dark sides (Burmester *et al.*, 2019; Dörrenbächer and Gammelgaard, 2019; Enderwick, 2019), the research community could provide a more holistic and balanced view of renewable energy in IB.

Dark sides of international renewable energy

In general terms, renewable energy sources (solar, wind, ocean waves, hydropower, hydrogen, biofuels, biomass, waste and geothermal resources) have better credibility than

non-renewables (oil, natural gas, coal and petroleum). However, there is an on-going debate regarding the credibility of renewable energy production, which is linked to the intermittency, unreliability and variability in the supply to match the demand (Delucchi and Jacobson, 2011). Also, though the vast majority of people are in favor of renewable energies, there is resistance from various interest groups and stakeholders. This is understandable, as the communities where energy generation projects are located might be negatively affected by renewable energy projects (Gipe, 1995). These adverse effects are associated with unwanted displacements, deforestation and engineering interventions that affect the quality of life either during the construction time of the project or permanently. This is what is identified as the "not-in-my-back-yard syndrome" (NIMBY) (Dear, 2007).

Zarfl *et al.* (2015) identified that there were more than 3,700 major dams under construction in the world (mainly in countries with emerging economies), each with a capacity to generate more than 1 MW. Large hydroelectric dam projects lead to deforestation because of the building of dams, roads and energy transmission lines (Finer and Jenkins, 2012). This, according to IPBES (2018) implies a negative ecological impact and tremendous and irreparable losses of biodiversity and ecosystems. This is why, it is urgent to evaluate the serious adverse effects that the production of energy from renewable sources also have. Moreover, it is essential to identify early on how to mitigate the negative social, ecological, cultural and economic consequences of over exploitation. Both for planners, project developers, and local and international investors, maintaining good relations with the communities where they are going to operate, is part of the viability and sustainability of the projects. This is why it seems to be pressing to understand the NIMBY syndrome and seek to positively influence the communities. Not knowing the discontent of the communities increases the resistance to projects that, if strategically managed, can contribute positively to the reduction of greenhouse gases, an increase in an inclusive prosperity, improvement of the quality of life of the people and the stabilization of the supply and demand of energy from renewable sources.

The questions related to the dark sides of renewable energy are highly complex, presenting aspects of politics, economy, society and technology. As a result, the guest editors consider that IB scholars are well equipped to not only discuss the positive side of supporting the global production and adoption of renewable energy but also critically analyze the negative aspects of these projects, and thus help to make market actors behave more responsibly.

Summary of the articles featuring in this special issue

After the review process, four articles were accepted for this special issue of *critical perspectives on international business* on "Renewable energy in international business." These articles discuss both aspects of the aforementioned broader research themes: global production and adoption of renewable energy and dark sides of international renewable energy. They approach these topics on multiple levels, in several geographical contexts and with a methodological plurality. Further, we provide a summary of these articles and discuss their contributions to the nascent research on renewable energy in IB.

The article entitled "The Effect of Trade and Monetary Policy on the Development of Renewable Energy in Latin America," by Frutos-Bencze, Avdiu and Unger investigates the effect of monetary policies on Latin America's renewable energy development. The paper reveals a significant relationship between the clean energy share and governmental spending boosting GDP, as well as the linkage between governmental spending and foreign exchange reserves. Declining net energy imports indicate that countries in Latin America are getting more and more energy autonomous for the price of building up massive amounts

of foreign exchange reserves. The paper touches upon an interesting discussion on the international financing of energy imports and the importance of interest rates on the projected profitability and thus, the amount of new renewable energy projects. The authors illuminate the importance of portraying renewable energy markets as complex systems that are influenced by not only MNEs and local companies in Latin America but also the institutional environment that enables and constrains the production and adoption of energy. Interestingly, though government spending on renewable energy creates business opportunities for companies, the investments in locally sourced energy diminish the need for energy imports. This potentially creates a positive feedback loop that further attracts government spending on renewable energy and causes turmoil in companies and countries that used to rely on fossil fuel exports.

"Transforming Wood Energy in Sweden and Chile: Climate Change, Environmental Communication and a Critical Political Ecology of International Forestry Companies" is a study by Alarcón who critically analyzes and problematizes the relations between international forestry companies and wood energy actors in Chile and Sweden. On the positive side, the international forestry companies have incorporated the use of wood energy as a renewable energy and carbon neutral energy strategy and have advanced forestry development in these countries. However, there is also a dark side revealed by NGOs and activists that highlights the social-ecological conflicts related to industrial forestry development. The paper helps IB scholars to analyze the social-ecological nature of cross-border business activities to organize material practices and communicative meaning around renewable energy. It is vital to notice that renewable energy is not without problems and it is crucial to hear the vulnerable voices that may be negatively impacted by the urge to grow the renewable energy market. Hydroenergy projects disrupt natural ecosystems and may cause massive flash floods, resulting in negative value creation for the wildlife and people. Similarly, wind turbines may cause harm to birds and bats, and solar energy may result in environmental damage throughout its life cycle. While the potential adverse outcomes should not directly ban renewable energy projects, the author raises an essential aspect of communication in influencing decision-makers.

"Home (Not So) Sweet Home: Domestic Political Uncertainty Driving Early Internationalisation in the Spanish Renewable Energy Context" is the third article that features in this special issue. It is co-authored by Rialp-Criado, Zolfaghari and Moen and explores the effects a seemingly detrimental policy change in Spain has had on local renewable energy firms. The study reveals that domestic firms reacted to an increasingly uncertain institutional environment and generally more adverse renewable energy policy framework by internationalizing to more institutionally attractive foreign markets. The paper contributes to renewable energy in IB by showing how political changes in Spain can affect changes in the UK, Portuguese or Chilean markets, as Spanish companies found these markets more attractive. The paper also complements previous research that primarily focuses on firm-specific factors in internationalizing firms' survival and growth. The authors emphasize the importance of a changing institutional-political environment at the home country-level, which can also occur in more developed countries. The authors also raise an essential point of the dark side of the international renewable energy market. While conflict in a single market can diminish market opportunities locally, it can also encourage domestic companies to develop and internationalize. As a result, the study helps portraying international renewable markets as complex systems.

The article entitled "Renewable Energy Market SMEs: Antecedents of Internationalization," by Asemokha, Ahi, Torkkeli and Saarenketo provides a foundational understanding of internationalizing renewable energy SMEs by oscillating the foci between

the managerial, firm and environmental levels. The study reveals antecedents to the international expansion and helps understand the distinct context of SMEs' internationalization within the renewable energy market. The authors suggest that renewable energy companies are unique compared to firms in other industries because of market forces such as trends, networks and changing regulatory policies. The paper discusses the potential of renewable energy as an empirical context to question some well-established ideas in IB research. For instance, conventional thinking has led IB scholars to argue that profit seeking is driving internationalization decisions. The context of renewable energy may, on the other hand, reveal environmentally conscious firms that have other motives that drive their strategy. This opens an important debate that may have a broader impact on understanding IB and adds a new angle to the idea of portraying international markets as complex systems.

Conclusions

We have highlighted the potential of critical research on the global production and adoption of renewable energy as well as its dark sides. We have also introduced the papers that are included in this special issue and linked them to the debates we outlined in the beginning of this introduction. Altogether, the conceptual discussion and the papers portray renewable energy markets as complex systems. As a result, it is essential to acknowledge that focusing solely on the environmental or economic side of the phenomenon gives a myopic view of the market. If other fields follow this practice, we face the danger of the SDGs not being addressed holistically. The question we pose is: Does the IB discipline have the theoretical and methodological foundations to be the source of knowledge that overcomes the challenge of a myopic focus? We argue that if more IB scholars focused on the topics covered in this special issue, IB research could contribute to the understanding of the dynamics of renewable energy and become societally and environmentally more impactful. In other words, we would witness a change from renewable energy market being an exciting context feeding to IB research to IB research feeding back to the research and practice in renewable energy markets.

Overall, this special issue aims at drawing the attention of the IB research community toward fighting climate change. The editorial and the set of articles show the applicability of prevalent themes in IB, such as internationalization, institutions and international entrepreneurship, to the issue of renewable energy. While climate change might have traditionally been considered as a playing field for engineers and natural scientists, we, as guest editors of this special issue, see IB scholars in a critical position to support the production and adoption of renewable energy. Notably, we highlight the need for understanding how the choices of various market actors, regulatory frameworks and the policies are shaped to support the transition to renewable energy. This requires a holistic and balanced view of renewable energy markets, which IB scholars have presented in this special issue and hopefully use in the future for the benefit of the society and the environment. The renewable energy market can be perceived as a market that is driven by international actors that are simultaneously sharing and differentiated by the institutional arrangements and logics. By underlining the economic as well as social and environmental importance of renewable energy, IB scholars are encouraged to study the many open questions on the global production and adoption of renewable energy, as well as the dark sides of international renewable energy.

The discussion on the global adoption of renewable energies is different in the special issue compared to the conventional discussion that portrays adoption as an ability of an MNE or its subsidiary to adopt innovations (Ghoshal and Bartlett, 1988). This narrow view

on adoption neglects various other actors, who influence the process. The studies in this special issue highlight that it is not only MNEs but also their subsidiaries that affect whether innovations are adopted. Instead, there are multiple actors, such as political decision-makers, NGOs or activists that impact the global adoption of innovations, such as renewable energy technologies. Thus, the research on global adoption of technologies becomes more similar to the "market shaping and innovation" stream that has recently gained momentum in marketing (Baker *et al.*, 2019; Nenonen and Storbacka, 2018). This stream of literature notices that markets are driven by multiple actors, who have agency to shape the institutional arrangements that enable and constrain market actors. Also, the literature portrays markets as complex systems that evolve through time, as various solutions become institutionalized. The history of the photovoltaic market (Kaartemo, 2016) can be seen as an example of the long institutionalization process of solar energy technology in the realm of renewable energy.

Moreover, the discussion on the dark sides of international renewable energy introduces a dialectic processual view to approaching various IB phenomena. A dialectic view enables studying opposing forces that influence market dynamics simultaneously (Van De Ven and Poole, 1995). As a result, market development is not seen as a process that is designed and executed by a single company. Instead, international markets can rather be seen as an emergent result of tensions and conflicts between market actors who have diverse needs and expectations. For instance, Kaartemo *et al.* (2019) discuss how a dialectic process theory accepts that market actors are both influenced by the environment and proactively or reactively respond to disruptive events in the environment. Some of the conflicts introduce stability to the market, whereas other tensions drive toward changes. Though the focus on the dark side highlights the potential of dialectic process theory, it is important not to neglect other process theories to enable a holistic view of market dynamics (Kaartemo *et al.*, 2019).

By directing IB research toward renewable energy market dynamics, we reveal a fascinating, almost untouched empirical context in which researchers can generate novel findings and make IB research more relevant. Moreover, the renewable energy market can be used as a test bed for previously developed theories in IB. This enables not only validating earlier findings but also advancing the environmentally and societally relevant field of renewable energy. On the grounds of this, it is the responsibility that we all have as IB scholars to conduct rigorous IB studies that inform other fields about the international dynamics between various actors and institutions that influence the development of the field.

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