

Home (not so) sweet home

Domestic political uncertainty driving early internationalisation in the Spanish renewable energy context

The Spanish
renewable
energy context

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Alex Rialp-Criado

Empresa, Universitat Autònoma Barcelona, Bellaterra (Cerdanyola del Vallès), Spain and Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Trondheim, Norway

Seyed Meysam Zolfaghari Ejlal Manesh
Rowan University, Glassboro, New Jersey, USA, and

Øystein Moen
Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Trondheim, Norway

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Abstract

Purpose – This paper aims to elaborate on the crucial effects that a seemingly detrimental policy change in Spain has had on the international entrepreneurial activities of domestic renewable energy (RE) firms.

Design/methodology/approach – Primary data were collected from nine RE companies in Spain and then triangulated with secondary data and interviews from informants in other local institutions.

Findings – Domestic RE firms, due to an institutional scape driver action, reacted to an increasingly uncertain and generally more adverse renewable energy policy framework in this country by preferring to internationalise towards foreign markets that had lower political uncertainty than the domestic one.

Research limitations/implications – This paper complements previous research primarily on firm-specific factors that enhance internationalising firms' survival and growth through a focus on the impact of a changing institutional-political environment at the home country-level.

Practical implications – Practitioners in the RE sector should analyse the risk of focusing only on the home market, as it can be too dependent on uncontrolled variations in domestic energy policy.

Social implications – The findings indicate that a more stable and supportive, long-term perspective in the domestic RE policy is essential for the sustained growth and development of this emerging industry.

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Originality/value – To analyse the strategy by which a number of purposefully selected companies were able to use international expansion as a survival-seeking strategy against a drastic policy-level change in the domestic RE market.

Keywords International entrepreneurship, Sustainable entrepreneurship, Contextualization, Renewable energy industry, Energy policy

Paper type Research paper

1. Introduction

Policies and regulations, which are usually considered hard institutional factors, may play a key role in the development of green, sustainable technologies. Indeed, results from previous studies have shown that there is a tendency to emphasise the importance of an effective and favourable policy scheme in fostering sustainable industries (De Laurentis and Cooke, 2008; Lewis and Wiser, 2007; Lund, 2007). Within renewable energy (RE) industries in particular, as the cost of electricity based on RE is still not at a level to compete with other more conventional sources of energy, these newer technologies usually need to be supported by a favourable domestic policy scheme, particularly when system imperfections are detected in the marketplace (Negro *et al.*, 2012). Therefore, development and growth in the global RE industry is generally highly related to strong policy support, and public incentives seem to be especially important. For instance, several studies in the marine energy sector have found that firms that emerged with an international market outlook from their inception tended to begin the early allocation of their activities in countries with highly supportive public energy policies (Løvdal and Neumann, 2011; Løvdal and Moen, 2013; Bjørgum *et al.*, 2013).

Furthermore, the RE sector is also highly influenced by relevant institutional agreements at an international level, which then have to be locally implemented and reinforced. However, many different countries have diverse capacities and institutional regulatory systems (e.g. public policy) regarding RE investments (Gonzalez-Perez, 2016). Consequently, they usually design and implement domestic energy policies according to their own economic, legal and socio-political structure. This means that the RE sector is heavily influenced by the actions of local stakeholders and policymakers' in each country, thereby stressing the importance of the influence that domestic regulatory institutions may have on the global development of the RE sector. Therefore, different energy policies in different contexts have actually resulted in highly different outcomes.

In the particular case of Spain, which is the focus of our country-specific research contextualised in this study, a number of widely unexpected and increasingly unfavourable regulatory changes have occurred at the national energy policy-level in recent years. These changes, along with the fairly unpredictable domestic energy policy, have not only weakened the initially promising domestic RE market in the country, but also have ultimately forced many local companies to decide to enter foreign markets to look for a more favourable energy policy regime abroad. For example, companies such as the Spanish subsidiary Alstom-wind, which had started operations in the domestic wind power market, have finally reacted to this change in domestic energy policy by joining new international projects in other more favourable institutional contexts that promote growth for these technologies, such as Japan.

In general, there is a paucity of research focussed on the RE business sector, especially from a combination of international business, entrepreneurial and institutional perspectives (Kolk, 2015). This study, thus, aims to fill this gap by critically investigating the impact of a changing national RE policy in a highly developed country such as Spain. Indeed, the RE context in Spain constitutes a unique and almost paradigmatic setting for the conducting of

this research. This is due to the varied and highly uncertain shifts that occur in the sector at the policy-level over the time period studied. These changes ultimately generate reactive cross-border movements among domestic green companies that are looking for better opportunities and more stable institutional frameworks abroad, which are seen as a *scape path* for their survival and eventual growth.

Our study makes several contributions in this research field. Firstly, from a theoretical standpoint, our paper complements previous research primarily on firm-specific factors that enhance the internationalising firms' survival and growth (Autio *et al.*, 2000; Sapienza *et al.*, 2006; Mudambi and Zahra, 2007; Carr *et al.*, 2010; Meschi *et al.*, 2017; Patel *et al.*, 2018), such as focussing on the impact of a changing institutional-political environment on a home country-level, a factor that is largely out of firms' control (Peng, 2001; Cuervo-Cazurra *et al.*, 2018). Secondly, from a contextualising empirical perspective, our paper provides rich and unique context-specific evidence of the highly unstable political environment that affects the RE sector in Spain over the period studied, along with its key impact upon the sector's development in the country. As far as we know, despite the increased stream of research in this area, there are no previous studies that have similarly investigated how largely uncertain energy policy changes in the domestic RE sector can critically motivate local firms' desire to conduct international business (IB) activities. Overall, our results contribute to both the sustainable and international business/entrepreneurship fields and could also have relevant public policy implications by demonstrating how such a highly policy-sensitive (RE) industry can be conducive in the decision to internationalise as a survival-seeking business strategy.

This paper is structured as follows: we first build an initial literature and conceptual background regarding the internationalisation-firm survival relationship in general, and expound on the impact of a key institutional factor – domestic policy – on business internationalisation, particularly when it shows highly uncertain conditions in the home country. This will then be followed by a description of different policy-level effects in the context of the RE sector across several countries and, more particularly, of the generally unstable and uncertain RE policy present in Spain during the past decade. Next, we explain our research method to investigate how a selected number of local companies coped with the increasingly unfavourable RE policy regime enacted within the country. Finally, we present and discuss our key findings and end with some concluding remarks and relevant implications.

2. Literature and conceptual background

2.1 Impact of home political uncertainty on internationalisation

Based upon very recent research regarding the phenomenon of emerging market multinationals, such as the so-called “multilatinas” in Latin America (Cuervo-Cazurra, 2016), a relatively new trend in IB studies has sought to address the fundamental question of how a firm's home country (and not only the host ones) may influence its decision regarding internationalisation (García-Canal and Guillen, 2008; Cuervo-Cazurra *et al.*, 2018).

According to this approach, different dimensions of the environment of operation of a firm within its own home country, such as the political, social, economic or geographic dimensions (Ghemawat, 2001) usually result in either “learning drivers” (i.e. managers learning from the conditions of the home country and using this learning abroad) or “scape drivers” (i.e. managers taking their firms abroad to avoid the conditions of the home country), which could ultimately be a motivation for the foreign expansion of domestic firms (Cuervo-Cazurra, 2016; Cuervo-Cazurra *et al.*, 2018).

During specific examinations of the institutional and/or politico-legal dimensions of a given country, its level of political uncertainty has been found to be the key potential driver behind the influence of the home country on a firm's internationalisation (Cuervo-Cazurra,

2016; Cuervo-Cazurra *et al.*, 2018). According to these authors, this influence can be twofold. The first possible mechanism of influence is the (*institutional*) *political uncertainty learning*, whereby managers develop the ability to deal with high political uncertainty or risks at home (Holburn and Zelner, 2010) that can be useful abroad. This could lead to the decision to enter similar countries that also have frequent and sudden changes in government policies and/or become able to manage a high degree of political diversity across countries. The second one is (*institutional*) *political uncertainty escape*, whereby managers decide to move operations abroad to institutionally more stable countries with reduced political uncertainty, which usually tend to be the most advanced world economies, to avoid the higher level of uncertainty in the home country.

2.2 Impact of internationalisation on firm long-term survival

The strategic decision regarding if and if so, when to initiate the internationalisation process is central to any firm's long-term performance (Peng, 2001). However, in the IB and international entrepreneurship (IE) literature, there appears to be two opposing approaches with regard to the earliness and subsequent speed of internationalisation after venture establishment in the domestic context, along with their consequences for firm survival and eventual growth (Casillas and Acedo, 2013; Meschi *et al.*, 2017).

The internationalisation process theory/Uppsala model (Johanson and Vahlne, 1977, 2009) or the so-called "gradualist approach", clearly argues for a slow and incremental internationalisation pattern due to both an increasing level of resource commitment by a firm and the experiential market knowledge that is being gradually acquired in subsequent foreign markets due to a gradually higher psychic distance from its home country. This more traditional approach regarding firm internationalisation also suggests that a significant time lag is required between the creation of a firm in its own domestic market and its first foreign entry (which usually includes targeting a very psychologically close country) to ensure it has secured all the necessary tangible and intangible resources needed for internationalisation (Luo and Peng, 1999). Therefore, from this theoretical approach, a relatively long period of domestic business activity prior to internationalisation is seen as the most secure way, if not the only way, for firms to eventually succeed in initial entry into the foreign market (Carr *et al.*, 2010).

However, the more recent international new venture (INV) and/or IE theory (Oviatt and McDougall, 1994; Madsen and Servais, 1997; Knight and Cavusgil, 2004) contrarily points out that an increasing number of new/young small and medium-sized enterprises are nowadays more capable than ever before of starting to expand abroad shortly after the foundation is established at home. This is achieved by quickly and effectively developing and leveraging key resources, capabilities, and networks abroad. Such INVs and/or born-global firms are generally defined as entrepreneurial, internationally-oriented start-ups that begin IB in foreign markets at inception or very shortly thereafter (Cavusgil and Knight, 2015; Coviello, 2015) and seem to be "ready out of the gate" to expand and leverage business opportunities across borders (almost) from the outset (Patel *et al.*, 2018). Compared to the dominant psychic distance logic that guides the incremental foreign market selection of the gradualist internationalisation process model of the firm, the IE approach suggests that, regardless of the psychic or cultural distance from the home country, early and rapid internationalisation, which is typical of INVs and/or born-globals, allows them to achieve international and/or sometimes even global outreach quickly by operating in highly specialised niche segments available in global markets that are often open to new technologies (Cavusgil and Knight, 2009).

In the light of these two theoretical approaches that offer conflicting arguments regarding the earliness and speed of internationalisation from a venture's inception, several authors consider that internationalisation that is too early may substantially increase the costs, risks and challenges, especially in a new/young organisation such as an INV, when compared to its more established and/or larger counterparts (Sapienza *et al.*, 2006; Sleuwaegen and Onkelinx, 2014). This is so because internationalising prematurely may reveal the inadequacy of the key firm resources and capabilities. However, it could also be argued that delaying the decision to internationalise for an unnecessarily long period may also entail huge opportunity costs for a firm (Patel *et al.*, 2018), particularly when increased foreign competition and/or more uncertain market conditions appear to be present in a firm's home country. This would also, therefore, threaten its future business performance and survival prospects (Chetty *et al.*, 2014). Accordingly, it could be argued that both extremes, either being too early or too late with internationalisation from venture inception, are likely lead to a higher risk of firm failure compared to identifying an optimal time to internationalise the given firm.

3. Policy-level effects in renewable energy development across countries

Institutional and entrepreneurship literature usually considers policy as a formal or hard institutional factor that affects the entrepreneurial activities of firms (Salimath and Cullen, 2010). Furthermore, the effect of regulatory institutional contexts on the internationalisation process of companies has been widely discussed elsewhere (Bevan, 2004; Aulakh and Kotabe, 2008; Coeurderoy and Murray, 2008; Kiss and Danis, 2008; Bruton *et al.*, 2009).

In the RE industry, due to the fact that the cost of electricity generated from it is still not competitive when compared to other more conventional energy sources, clean energies need to be supported by favourable policy schemes, such as stimulating feed-in-tariff programmes[1], where there is systemic failure or system imperfection (Negro *et al.*, 2012). Therefore, development and growth in the RE industry is often highly policy-sensitive and closely related to political support. However, the effects of the policy in the development of this industry is rather mixed across countries, as can be seen in several studies (Wüstenhagen *et al.*, 2003; Lewis and Wiser, 2007; Lund, 2007; De Laurentis and Cooke, 2008; Bürer and Wüstenhagen, 2009; Reddy *et al.*, 2009; Wüstenhagen and Bilharz, 2006; Wüstenhagen, Wüstenhagen and Menichetti, 2012) that emphasise the importance of an effective and favourable policy in the fostering of renewable energies. For instance, in the wind energy industry, a comparative study of the policy support systems of 12 countries suggests that a combination of direct (ex. finance and tax incentives) and indirect support mechanisms (mandatory renewable energy target) is necessary to establish an internationally competitive industry (Lewis and Wiser, 2007).

Governments across the world have also pursued several policies to reach their goals for the development of renewable energies and the confronting of environmental concerns. In the European Union, for instance, the 2020 programme forces member countries to increase their energy production that is derived from RE sources to 20 per cent by the end of 2020. Germany has designed and implemented advanced RE public policies, such as StrEG[2] and Erneuerbare-Energien-Gesetz (EEG[3]), which are known as feed-in tariff laws. In this country, years of consistent policy support has been an important driver for the increase of renewable electricity generation. No other country has been so successful in growing in new capacity as quickly as Germany, particularly in the wind power sector. Germany accounts for more than 40 per cent of installed wind power capacity, and nearly 60 per cent of the incremental capacity installed worldwide (Wüstenhagen and Bilharz, 2006).

A recent study by [Wüstenhagen and Menichetti \(2012\)](#) shows that supportive energy policies that effectively reduce the risk of investment in renewable energies, such as feed-in tariff programmes, actually help investors in the private sector when making decisions as to where the adjusted risk-return equation is more favourable for renewable energies. Accordingly, although feed-in tariff are usually the most expensive public policy choice, it has proven to be the most effective method, both for investors and end-users in many countries ([Bürer and Wüstenhagen, 2009](#)).

Deliberatively supportive and effective domestic policies can also foster RE firms to move across borders, thus, resulting in the establishment of internationally competitive industries ([Lewis and Wiser, 2007](#)). For example, in the wind energy industry, a sizable and stable home market can provide a long-term planning horizon for local providers, to develop more secure future investments. Furthermore, a more favourable policy at the national level can also push the outward internationalisation of RE companies. For example, in China, there has been a special focus on strategic industries – such as RE – since the late 1990s. In addition to this, export-driven growth policy during the 2000s has made the country a major player in international markets ([Liu and Goldstein, 2013](#)). Success stories of Chinese exporting companies in the photovoltaics and wind turbines sectors ([de la Tour et al., 2011](#); [Liu and Goldstein, 2013](#)) prove that there is a highly positive impact of effective domestic policies on the internationalisation of local companies. This supportive policy scheme has driven Chinese companies to proactively seek new international opportunities based on the highly favourable and dynamic renewable energy home market[4].

On the other hand, a supportive RE policy may also create an encouraging domestic context that can attract foreign investments as international RE firms look for better opportunities in countries with a better policy support for clean energy sources. An example of this is the case of Danish wind turbine company (Vesta) internationalising to the USA ([Wüstenhagen, 2003](#); [Lovdal and Neumann, 2011](#)) after a positive policy-level change in the state of California.

In summary, national governments often attempt to balance alternative political goals, which are related to the increased production of RE with budget limitations, home market economic activity and the development of new, internationally competitive industries. In the context of rapid technology development, along with changing support schemes and regulations in different countries, this creates a dynamic and often hard to predict environment for RE companies. Therefore, the ability to adjust to unexpected changes in the domestic regulations and support schemes becomes one of the most critical components for firms that compete within the RE sector.

4. Political uncertainty in the Spanish renewable energy context

In Spain, the Ministry of Industry, Tourism and Trade would be the one fully responsible for the implementation and monitoring of the RE policies and regulations at a country-level. In 1980, prior even to its joining the European Union, Spain passed the first law for *energy conservation* to support emerging RE technologies. Since then, and after joining the EU in 1986, Spain has implemented a variety of policies that support renewable electricity generation. In 2005 and 2010, the country's plans to achieve its RE targets and objectives were officially published. The European Union's binding law, called the *renewable energy directive*[5], stated that at least 20 per cent of total energy would be provided by renewable sources in the EU by 2020, and has also gradually forced all its member states to support the development of renewable technologies. To meet this long-term energy objective of EU, Spain followed the corresponding EU directive and published the *National renewable energy action plan* (PANER in Spanish) for 2011-2020 that explained how the country would achieve its RE targets by 2020[6]. These laws gave early and full priority to renewable sources for grid access, feed-in tariff, and market premium incentives at the national level ([Brown, 2013](#)).

The Spanish Government initially established large RE incentive programmes in the country, particularly since the mid-2000s. Accordingly, most of the RE firms that were established from the early and mid-2000s were expected to have very attractive demand conditions within their home market and have the potential to expand on a larger scale domestically. During that time, one of the most generous incentive programmes for the promotion of solar energy was established in Spain, and in 2008 it was largest global market for solar power installation.

However, these large incentive programmes were gradually and very significantly reduced in the following years, mostly due to the negative effects of the financial crisis that began in 2007, resulting in deep regulatory changes to drastically reduce costs for national budgets. During the financial crisis, the Spanish Government started reducing its high initial support for renewable energies sources by gradually reducing feed-in tariffs rates and by the end of 2012, all the remaining supports had been drastically cut. In 2013, due to a huge tariff deficit of nearly €30bn that had been accumulated since 2001, the Spanish Government suddenly decided to make retroactive cuts to the feed-in tariff programme for installed productions and extra taxes were introduced for generating electricity from RE sources, such as the so-called “sun tax” for photovoltaics energy self-consumption in 2015. These political decisions caused many local RE providers to sue the Spanish Government in the international courts over its retroactive decision to drastically cut the support programmes.

Policymakers’ “attention shift” is another key political challenge pertaining to RE development in Spain. This phenomenon occurs when the focus of policymakers suddenly changes from one given technology to another or towards other possible applications over time. Indeed, the newest trends in energy policy in Spain are currently very supportive of biomass and energy efficiency technologies, while other types of renewable energies lack any further support. Furthermore, it should also be noted that RE policy in Spain has been traditionally designed to mainly support domestic market consumption and that no specific policy, such as the aforementioned Chinese Government subsidies to solar photovoltaics, has been developed to heavily support the export activity of domestic RE firms.

Therefore, a key consequence of all these detrimental policy changes regarding RE production and consumption in the country is a huge reduction of capacity and employment in the sector, following a drastic reduction of domestic demand for these type of clean energy sources. According to a recent report published by the Spanish Renewable Energy Association (APPA, 2017), the development in installed capacity and employment (direct, indirect and total) in different parts of the renewable energy sector in Spain has decreased dramatically in the past few years. Including all renewable energy sectors, the number of employees has fallen from 127,548 in 2011 to 74,566 in 2016. However, large variations exist between the different types of renewable energy. An example can be seen within the solar thermoelectric industry, where the total number of employees was 33,555 in 2011, which fell to 5,216 by 2016 (APPA, 2017, p. 113) – a reduction of 84.5 per cent (Figure 1).

Furthermore, to illustrate the rather negative effects of this political instability and the uncertainty in the development of renewable energy technologies in Spain, we also show the recent evolution of the installed renewable energy capacity in the country according to data from the [International Renewable Energy Agency \(IRENA, 2017\)](#) (Figure 2). Due to the drastic governmental policy reform, which cut all forms of financial support to the renewable energy sector after the recession period, the stagnating and even declining number of installations in the country can be clearly observed across the given period of time.

5. Research method: exploratory multiple case study

To understand how and why policy-related factors could affect the internationalisation of renewable energy companies in our research context, the multiple case study methodology

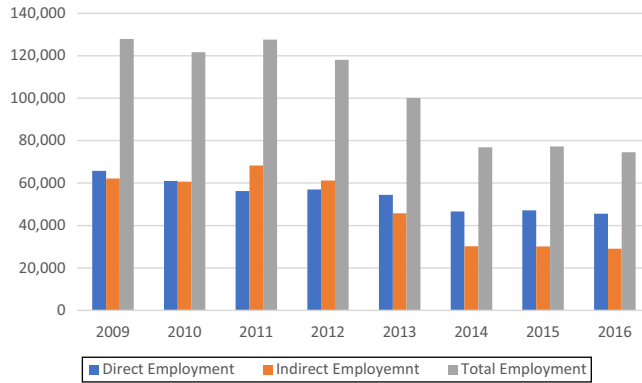


Figure 1.
Employment in Spain's Renewable Energy Industry*

Source: *Estudio del Impacto macroeconomico las Energías Renovables en España (p. 13), by Asociación de Empresas de Energías Renovables (APPA), December 12 2017, retrieved from www.APPA.es/ Copyright 2017 by APPA. Reprinted with permission

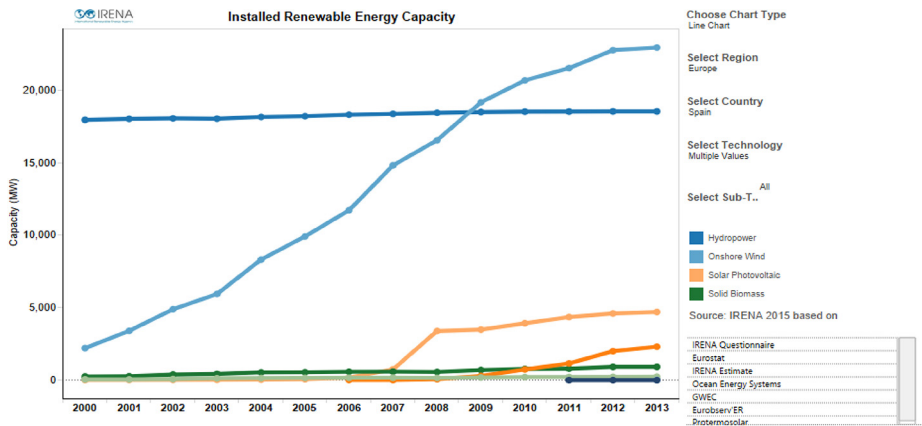


Figure 2.
Installed renewable energy capacity in Spain*

Source: “*Renewable Energy Capacity and Generation” by International Renewable Energy Agency (www.irena.org). Copyright 2017 by International Renewable Energy Agency (<http://resourceirena.irena.org/gateway/dashboard/?topic=4andsubTopic=9>). Reprinted with permission

was deemed to be the most efficient for this study. As empirical studies on the entrepreneurial internationalisation of firms in this emerging renewable energy industry are still scarce (Løvdaal and Neumann, 2011; Bjørgum *et al.*, 2013; Erikson *et al.*, 2015), we adopted a qualitative method that was capable of gathering rich and in-depth data from different case units. Moreover, the novelty of the subject, as it was at the intersection of sustainable and IE, clearly justified the selection of an exploratory methodological approach.

Furthermore, the choice of using multiple data sources allows for triangulation, thereby enhancing the validity of the study (Yin, 2009).

The sample population for the study comprises of entrepreneurial Spanish firms that are developing international activity in the renewable energy sector. The firms were selected using purposeful sampling suggestions (Eisenhardt, 1989; Patton, 2002; Yin, 2009). This strategy involving the selection of firm cases implies maximal variation sampling, thereby enabling the triangulation of multiple data sources by including different perspectives of the key phenomenon that is under study, e.g. internationalisation in the Spanish renewable energy sector. Accordingly, we used a multiple case design that was based upon our key research criteria in the purposeful selection of relevant firm cases. These criteria included: being a company active in any main technology within the renewable energy industry; having been founded and/or being legally registered in Spain; and having developed a certain level of international activity. According to these selection criteria, we firstly identified over 50 potential companies from the IDAE[7] public database and sent them a formal invitation to form a part of the research project, with around 15 of them initially becoming interested. To increase the diversity and the heterogeneity of our data, we ended up choosing nine internationalising companies of different size, all of which were already established in the Spanish renewable energy industry and at various levels of technological development. Some key descriptive information about these investigated cases, such as the firm's age, size, technology level and first year of international activity, is summarised in Table I.

We gathered our data from multiple sources to gain in-depth information from each single case and make a more systematic comparison between the firm cases. Several potential informants, including eco-entrepreneurs, energy policy authorities and experts from local institutions supporting renewable energy development in the country, were chosen and duly contacted due to their potentially diverse perspectives regarding the conducting of (international) business in the sector.

According to the following interview procedures previously outlined by Eisenhardt (1989), Eisenhardt and Graebner (2007) and Yin, 2009, a total of 18 interviews were conducted with different internal and external informants. Most were face-to-face interviews that were conducted with the eco-entrepreneurs of the selected companies (usually the founder, CEO or senior manager/s), and the questions were semi-structured regarding their firms' characteristics and internationalisation activities. However, several interviews were also conducted with local energy policymakers and energy experts from ICAEN (Catalan Institute for Energy Policy), ACCIO (Catalan Agency of Business Competitiveness) and Solartys (centre for the international promotion of renewable energies). The interviews usually lasted between 60 and 100 min on average, and were sometimes held with more than one interviewee at a time. All interviews were conducted physically in each firm or institution location and/or eventually completed through follow-up calls. All interviews were fully recorded and transcribed, and a database was created for each firm case. Altogether, this amounted to more than 20 h of recordings, and approximately 230 pages of transcripts were collected during the period of data collection (2014). After each interview process, a copy of the transcripts and case reports was sent to the interviewees to check for any possible error or misunderstanding, and to ensure the validity and reliability of the primary data that were collected. These data were also triangulated with other multiple sources of evidence, such as observations or secondary information available from online reports, the websites of the investigated firms and institutions, news releases and materials provided by the informants (e.g. company brochures, internal memos, archival data, etc.). Therefore, the validity of the study was established based on the key principle of the triangulation of data sources (Yin, 2009).

In our data analysis, especially in the cross-case analysis phase, potential similarities and differences that existed both within and between case units were fully examined (Bourgeois

Table I.
The nine
investigated case
firms

Company name	Interviewees	No. of employees	Renewable energy technology	Founding year	First year of foreign entry and international expansion	Level of firm's technological maturity
<i>Vidurgalss</i>	Technical and sales manager Co-founder	100-200	Building integrated PV-solar Energy efficiency	2004-2006	2008 (10 countries)	Growth stage
<i>OpenDomo</i>	Co-founder	5	Energy efficiency	2011	2013 (UK, France, United Arab Emirates)	Growth stage
<i>Tecno Turbine</i>	Co-founder	5	Hydraulic electric turbine	2012	2014 (Germany, Tunisia, Kenya)	Introduction stage
<i>Mira Energia</i>	Founder	2	Solar cooling and renewable energy projects	2011	2011 (Germany, Austria, Tunisia)	Introduction-growth stage
<i>Alstom wind</i>	Head of the innovation department and sales manager Founder and CEO	500 and before	Wind energy	2007	2007 (30 Countries)	Growth-maturity stage
<i>Energea</i>	Founder and CEO	10	ESCO, biomass cogeneration, absorption systems and solar energy	2010	2012 (Italy, Chile, Brazil)	Growth stage
<i>E-consultant</i>	Founder and CEO	2	Wind energy	2000	2006 (Denmark, Germany, Norway)	Growth-maturity stage
<i>Smalle Technologies</i>	CFO and Cofounder	12 (6 full time and 6 part-time)	Wave energy	2012	2013 (Portugal, UK, USA, China)	Introduction stage
<i>Waty</i>	CFO and Founder	7 (50% in Italy and the rest in Spain)	Solar energy	2013	2014 (Italy, USA, Cameron, Ghana)	Growth stage

and Eisenhardt, 1988). We critically explored and compared the timing and motives for the internationalisation of multiple firm cases based mostly upon their interaction with the increasingly unstable political environment in the renewable energy sector in the home country. In particular, the key policy-level effects of the changing renewable energy regulation in the country and their eventual consequences for the nine selected firms were investigated at three different stages: pre-policy reform, at policy-reform time and post-policy reform. In addition, several strategic actions undertaken by these firms to better cope with this volatile and politically uncertain domestic environment were further identified. Thus, the whole analysis and extracted facts were guided by the research objectives, and key analytical dimensions derived from the conceptual background, and the rising themes that began to emerge from the data seemed to be pertinent for our interpretation. The main results of the study are presented in the following section.

6. Findings

As mentioned above, a supportive governmental policy in the home market appears to be essential for the growth and development of competitive and sustainable companies (Lewis and Wiser, 2007; Lund, 2007; De Laurentis and Cooke, 2008). In the case of the emerging renewable energy, this seems to be particularly true. Several countries, such as Denmark and Germany, first started actively supporting this sector by creating internal and strong industrial clusters in the domestic market. This ultimately helped local firms to foster the development of these technologies in the international arena.

According to our case-based results, one of the key factors that motivated the internationalisation of the investigated Spanish firms was the sudden, uncertain and rather detrimental changes made to the domestic renewable energy policy. In the following paragraphs, we discuss the effects of an initially supportive renewable energy policy in Spain from the perspective of the several firm cases we examined, and then show how they had to begin dealing with an increasingly unfavourable policy regime for renewable energy development at home.

In the mid-2000s, one of the most attractive feed-in tariff programmes for the stimulation of renewable energy generation (especially solar power) was established in Spain, and it had an even higher than the feed-in tariff system that existed in Germany, which was curiously high for a country with much lower sun radiation compared to Spain. As an example, in 2007, the feed-in tariff for solar technologies in Spain was €46.58 Cent/kWh while it was €33.3 Cent/kWh in Germany. Thus, over 2,600 MW of solar capacity was installed in Spain in 2008, which was much higher than the expected 400 MW installation (Zhang *et al.*, 2014). Evidence from the firm cases indicates that most of these companies actually started their business when the domestic policy regarding renewable energies was extremely favourable and within the country, mostly due to the very generous feed-in-tariff system in play. For example, Vidurglass was created in 2006 due to the highly supportive renewable energy regulation in Spain at that time. They noted:

Actually, by then [before subsequent policy change], local RE new and established companies did not even think of neither need to go abroad because they had a huge and very promising domestic market (Solartys' informant).

Indeed, according to TecnoTurbine's founder, the renewable energy policy framework was apparently so favourable in Spain that other international companies were attracted and entered the Spanish market. These included, for instance, E.On and RWE from Germany, Eni from Italy and other Japanese and Chinese providers. The informant from ACCIO also commented on this "institutional call effect" that promoted foreign competition entry to take advantage of such an attractive renewable energy policy in the country. This could be seen as an inward internationalisation process (Welch and Luostarinen, 1993), which occurred in the Spanish

renewable energy sector during that time. However, as an expert from ICAEN mentioned, despite such favourable initial regulation, it was unfortunate that Spanish policymakers never focussed on truly looking to create a powerful local manufacturing industry that could produce the equipment required for the emerging power plants, an oversight that has always been considered one of the main gaps in the development of the renewable energy industry in Spain. Another informant from Mira Energia expressed a similar concern:

I think the important thing for the country [Spain] was to develop an industrial cluster or infrastructure [...] However, the pace of this [renewable energy sector] growth was so fast [...] and then they [policymakers] suddenly stopped and changed law very fast because the maximum potential was reached in two or three years [...] in three years, you do not have enough time to develop an entire industrial cluster (Mira Energia).

Therefore, though the supportive renewable energy policy stimulated new local firms to rapidly enter the sector in Spain, our findings also indicate that some possible trade-offs with regard to the offering were seen by the public incentives being too high for the stimulation renewable energy development in the country. This is what happened in the case of Spain, with the high feed-in-tariff programme that was offered mostly during the early 2000s until the final years of the worldwide financial crisis. One key consequence of this programme also involved attracting other very competitive international firms, thereby limiting the growth opportunities for emerging local ones, and thus, resulting in a lack of time for creating and developing a truly competitive home market-based cluster in the sector, which would have clearly empowered them. Secondly, domestic new firms did not actually have many internal incentives to develop an international orientation from inception, due to the huge demand available in the home market at that time. Thus, it seems that these high policy-level incentives (feed-in-tariff program) in Spain not only heavily increased public sector costs but also did not clearly contribute to developing an internationally competitive renewable energy sector in the country from the onset.

However, as aforementioned above, the lasting consequences of the financial world crisis, which began in 2007, along with the markedly increased tariff deficit in the Spanish economy that were largely accumulated since 2001, were the main reasons for the sudden and drastic change in the renewable energy policy towards a much less supportive regulatory framework in the country. Accordingly, by mid-2013, the Spanish Government had made very significant retroactive cuts to the previous feed-in tariff programme and even introduced rather high additional taxes on generating electricity from renewable energy sources.

Particularly in the past several years, this severe policy reform in the Spanish renewable energy sector has critically affected most established companies in some manner, regardless of their size. A company such as Alstom wind, for instance, that had mainly commercialised wind turbines for the Spanish local market, started following its customers abroad because, due to the policy reform in Spain, it found that no clear development of the domestic market could be foreseen in the near future. Another case firm that was widely affected by this detrimental policy change was Vidurglass, which saw its business drastically reduced from €1M to 100,000 in a short period of time. Our informant in another firm, Mira Energia, expressed his concerns regarding the absence of any supporting domestic policy framework in the Spanish renewable energy sector. He noted that:

[...] the big challenges are to overcome the combination of the financial crisis and the unfavorable policy change in the last past three years. It is the main constrain we have in our country. It is a bad point for developing the industry cluster and to increase the level of employment here (Mira Energia).

However, while Watly's founder and CEO also believed that this change and increasingly uncertain domestic policy environment had negatively affected the level of confidence and trust needed among the main actors participating in this still emergent industry in Spain,

this firm's management had, as inception, decided to sell their modules to clients in Italy, North America or other countries, where the renewable energy sector was growing faster. Thus, this company actually emerged as a truly born-global firm. Another investigated company that was less affected by the policy reform in Spain was, perhaps, OpenDomo, as they were not focussed on renewable energy technologies in the mass market, which was highly dependent on tax policy support.

Under this changing and greatly uncertain post-reform regulatory environment in the Spanish renewable energy sector, most of our investigated companies had to react and adapt to the new political context in the sector by compensating for the increasingly declining domestic market by supplementing it with the international markets. Indeed, their need for long-term survivability and eventual growth prospects in the future clearly required them to start and extend operations in other more attractive markets rather than solely at home. Therefore, for most of these firms international expansion or outward internationalisation (Welch and Luostarinen, 1993) clearly emerged as the most suitable solution or key strategic reaction, if not the only one, that could overcome their increased constraints and regulatory-based difficulties in the home market.

While Alstom wind's primary target market at the outset was Spain, they were forced to enter many other markets abroad during the policy reform. Mira Energia's founder also claimed that: "to survive [in] your business, internationalisation is a must nowadays". Another firm studied, Energea, had, since its establishment in 2010, mainly focussed on the installation of renewable energy technologies and energy efficiency domestically, but decided to enter the Chilean market early due to the policy change in Spain, simply because they could not foresee any future development in the home market:

Now our clients and partners have more activities in Chile than in Spain, it is true [. . .] in Chile, there are many constructions, buildings [. . .] and demand for energy is high but in Spain all this kind of projects are stopped [. . .] It is important to continue our work [. . .] if we cannot work in Spain, we have to go out (Energea).

For Smalle Technologies, a marine energy specialist with a successful patented idea for wave energy generation, two main crucial factors drove it to enter the international market. The first was the continued access to very convenient wave conditions in countries such as the UK, Portugal and the USA, while the other key driving factor for internationalisation was to look for more favourable public policy support for this particular technology in other countries. The UK, for instance, was a much more suitable location for developing marine energy technologies:

Yes, there are two main drivers for us; one is going to where the big waves are. We can be interested in Spain, UK, US, and even Australia [. . .] all focal points to try our devices. And, the other main reason is how public supports are available for these technologies. For some years Spain was a really good place to develop our idea, for example in the Canary Islands and in the north coast of the country. Nowadays, it is difficult for our new projects to get into reality. Some other countries like the UK have nowadays more context-based advantages (Smalle Technologies).

Techno turbine developed an innovative idea for the generation of electricity from water pressure in the pipes. It implemented this business idea in the home country in 2012 and received important technological support from Siemens. However, the CEO of this start-up suggested that moving to other countries early, particularly those with more stable legal frameworks than those Spain, was the only solution for survival in the long-term:

The problem is that RE companies [in Spain] cannot do much about it [the changing regulatory system]. The solution will be to become international and be present at countries where the stability of the laws and regulations is higher and the policymakers have a real commitment with this industry. I think that is the only possible solution (Technoturbine).

Watly, one of the cases investigated in our sample, clearly emerged as an INV, and had focussed its business primarily on the international context from inception to avoid being affected by the latest regulatory changes that were taking place in the Spanish sector. Another informant in a consulting company within this sector, E-consultant, also mentioned that:

It is obvious that [Spanish companies] have to spread the risk and have to go to other foreign markets. It would be unreasonable not to do so. The construction of renewable energy plants will always hang on the good will of the politicians in all countries. You have to be present there if you want to have a piece of the cake! (E-consultant).

As aforementioned above, we also conducted several interviews with energy-related institutions, such as ICAEN, ACCIO (and Solartys (Spanish association for the promotion of renewable energies)). According to our ICAEN informant, due to the crisis and consequential policy change in Spain, many local companies were considering internationalisation simply because they needed to survive. Indeed, as the financial crisis began, the percentage of exports that occurred within the sector has increased annually due to the drastic decrease of the internal demand, with many more renewable energy companies trying to export their products and services abroad as it was deemed to be the only way for them to stay alive. ACCIO's representative also mentioned that many major players had left the Spanish market and were now active in the main international markets, while Solartys' informant agreed that after policy change in Spain, local RE companies needed to internationalise their activities to better ensure their survival.

Thus, as the drastic policy reform, Spanish firms within the renewable energy industry are increasingly looking to internationalise to foreign markets, where they can perceive a more favourable and supportive policy scheme than the one currently in place in Spain. Accordingly, apart from market size considerations, the need to identify a highly supportive institutional framework regarding renewable energies in the host country/s would be considered paramount in terms of foreign market selection.

Energiea's founder highlighted that when evaluating the market/s they wanted to enter, policy issues were one of the key factors that needed to be assessed. By policy assessment, he was referring not only to an analysis of the market potential, but also to all technical requirements needed to enter the market, along with the benefits of public financial incentives that would be available in the host country (like feed-in tariff support). For example, their highly successful entry in Brazil managed to take advantage of all the financial incentives available in this foreign market. Furthermore, Energiea had entered the Chilean market due largely to its more favourable energy policy than the one in Spain. However, they seemed more reluctant to enter other countries, such as Germany or the USA, as while their home markets for renewable energy are huge and may offer high economic profits, they policy issues in these two countries had very strict technical requirements that had to be met. Similarly, there is huge potential for installing wind energy plants in Argentina, but because of the non-supportive local public policy, Energiea has not been willing to enter this market thus far.

In Japan, after the Fukushima disaster, the wind energy market began to develop very fast, and Alstom wind was also willing to enter this culturally distant market due to the huge feed-in tariff support that was offered by the Japanese Government. Also, to select the best market/s abroad, Mira Energia's entrepreneur mentioned that there should be high compatibility between the entry firm and the policy framework found in the target market. For example, in the USA, there are some specific regulations (UL[8]) that any firm would have to follow if it wanted to enter this huge market. Solartys' informant also noted the great importance of studying the energy policy scheme and legal framework present in any potential host country-market, an essential task for any company prior to the consideration of any internationalisation efforts. He noted that:

Well, the solar sector in particular and renewable energy sector in general is really policy-sensitive. So, there is no much organic growth in terms of internationalization [...] You cannot say: Okay, now my market will be South America and I start with Brazil, and then I go to Mexico, and then I go to Chile [...] You cannot do this. It always depends on the local regulation. It heavily depends on the national laws. [...], this is one of the main reasons for the companies to decide where to go (Solartys).

Table II provides an overview of the most relevant domestic energy policy-level effects that have taken place in the Spanish renewable energy sector, according to the nine selected companies and three other related institutions that we examined. The key political effects of the changing and increasingly uncertain renewable energy regulation in a country and their consequences for these case firms are presented at three different stages of analysis, namely, pre-policy reform, during policy reform time and post-policy reform. Furthermore, the main strategic actions that were undertaken by these firms and institutions to better cope with this volatile and politically uncertain domestic environment are also illustrated. In all cases, such strategic (re)actions to better cope with the new regulatory system and declining market scenario at home generally involved a large increase in internationalisation efforts as a key path to achieve firm survival and growth. It also shows the importance of the favourability of the energy policy framework available in the potential host country as a determining factor in the selection of proper international market/s.

7. Discussion

Both the institutional and entrepreneurship literature usually considers policy as a key institutional factor that may affect (international) entrepreneurial activities (Bevan, 2004; Aulakh and Kotabe, 2008; Bruton *et al.*, 2009; Salimath and Cullen, 2010), while some prior literature has already discussed the effects of the national institutional context on the entrepreneurial internationalisation of firms (Kiss and Danis, 2008). Our main objective in this research was, thus, to build on this issue further by addressing, as key research questions, how and why the drastic renewable energy policy reform in Spain ultimately influenced the development of international entrepreneurial activities amongst domestic firms. Our discussion was then focussed on two main topics.

7.1 The key relevance of context: increased domestic political uncertainty as an institutional scape driver in the Spanish renewable energy sector

In some countries, renewable energy companies appear to be quite successful at influencing the development of more helpful policies within the sector. For instance, in Denmark, the major wind energy companies actively work together with universities in advancing suggestions to recommend more convenient policy developments, as exemplified in several reports, such as Megavind (2010). Similarly, WindEurope (formerly EWEA) and the global wind energy council constantly make relevant policy suggestions. It is also well-known that in more established and mature energy sectors, such as oil and gas, large key players in the energy industry actively influence policymaking based upon their huge resources. Furthermore, with established agriculture and forest-related industries targeting bio-energy as a growth opportunity, it further reflects how different actors attempt to influence energy policymaking. Therefore, continued attention to the on-going debates, along with processes resulting in new regulations and policies in the energy sector, are and will be extremely crucial.

However, as shown in the aforementioned case of the Spanish renewable energy sector, while an initial domestic regulatory system based upon large feed-in-tariff incentives made this market very attractive and quickly resulted in increased investments in the domestic sector, a number of problems subsequently emerged. Firstly, Spanish renewable energy firms had almost no incentives to show a strong international focus from the outset, making them highly vulnerable to

Table II.
Within and cross
case firms (and other
institutions) analysis:
Energy policy-related
assessments and
actions

Company/ Institution	Renewal Energy Policy Change and its effects in Spain			Policy scheme in the host country
	Before policy reform	At policy reform	Post-policy reform effects	
Alstom wind	Big and promising domestic market in Spain Alstom wind (a French multinational) had acquired a Spanish wind small company named Ecotecnía to enter the Spanish market	Cutting all financial incentives to the sector	Damaging the domestic renewable energy market Putting smaller companies in a disadvantageous position They are unable to forecast any major development of the renewable energy market in Spain They cannot rely on a single market to survive	Evaluating the policy support in the host country/ies for possible financial support such as Feed-in-Tariff programmes Compatible and attractive policy for entering Brazil and Japan but other markets such as Argentina, USA and Germany were not seen as attractive for them Local content requirement (a type of non-tariff trade barrier) highly conditioning foreign market selection
Energea	Supportive home policy for further market development Benefited by código técnico de la edificación (domestic regulation)	New laws make the development of renewable energy solutions almost impossible Paying utility companies to access the grid system for electricity	Constant changes in the policy and electricity price (Feed-in-Tariff) Lack of trust and confidence in the local government Solar energy seen as a more affected technology than wind energy Photovoltaic installation is practically forbidden and many investors went bankrupt	Policy change was, perhaps, necessary but not by means of cutting all the incentives Entering the international markets to mitigate the risk of only one single market Without internationalisation they will surely disappear Intensify international activity: adapting to the new political situation by replacing the domestic market shortage with new foreign markets React and adapt themselves to the new political situation Internationalisation to foreign markets with more favourable energy policy regimes

(continued)

Company/ Institution	Renewal Energy Policy Change and its effects in Spain			Policy scheme in the host country
	Before policy reform	At policy reform	Post-policy reform effects	
Mira Energia	Highly (perhaps, too much so) favourable policy design at that time Profitable investment in photovoltaics (PV) Very fast market development They reached their maximum potential in just two or three years Entry of international players to the home market due to market and regulatory attractiveness	Largely reducing Feed-in-Tariff for photovoltaics With policy change in 2010 payback time changed from 6 to 10-years The second round of changes in 2012 onward lead to stop and breakdown of this technology industry	Policy change impact highly depends on the technology maturity Limited internal R&D activity of firms Tariff deficit Affects social acceptance of renewable energy with wrong messages to consumers: "renewable energy-related supports lead to crisis" Companies are closing and people losing their jobs	Technology development affected by the legal framework of each country
e-consultant	Industry reliance on public incentives/subsidies Renewable industry regulation was made too attractive Foreign investments in the sector (many international renewable companies entered Spain)	Sending a wrong signal to the international markets Applying retrospective law enforcement Overnight changes	It may encourage renewable energy companies to look for more cost-effective solutions Many international companies sued the Spanish Government Closing down of power plants Creating a non-trustworthy industry environment at home Stopping investment in Spain from international companies	Local content requirement (a type of non-tariff trade barrier) highly conditioning foreign market selection Compatibility with their target markets' policy scheme (Like UL in USA) High policy support in Japan for developing offshore wind turbines
OpenDomo	Increased crisis in the Spanish energy sector Keeping the energy cost high	Affected indirectly/less to customers Policy change, as also an opportunity to install energy control systems Small companies were far more vulnerable	Internationalisation a perfectly possible and convenient scenario for them They have to spread the risk and go for other markets Removing all the manufacturing plants (they may just keep R&D at home) Right moment to start exporting while monitoring what the ultimate effect of the domestic policy change	

(continued)

Table II.

Company/ Institution	Renewal Energy Policy Change and its effects in Spain			Policy scheme in the host country
	Before policy reform	At policy reform	Post-policy reform effects	
Smalle Technologies	Spain as one of the leaders in renewable energy technologies Very suitable context for developing wave technologies (especially in the north of the country and the Canary Islands)	This policy change mostly affected companies that had been developed based on governmental subsidies (wave energy was not a large part of it)	They are not highly affected by policy change because they are not dependent so much on the Feed-in-Tariff programme In the future, should they become a major electricity producer, they will be more affected Losing position in renewable energy technology development	They are going to other more attractive countries like the UK, because it offers more policy support for their technology
Tecnoturbinas	Spain considered as a leader in renewable energy technologies	Making photovoltaics (PV) installation and self-consumption largely limited or even forbidden	Losing trust in the home government Most of the companies were closing Many investors went out of Spain Policy change seen as an opportunity to start new businesses	Moving to countries that provide more favourable public support to the sector Look for presence in countries with more stable energy law and regulations
Vidurglass	(Excessively) favourable political framework in 2006 was not well implemented Photovoltaics (PV) was seen as a key future opportunity for the company Company was initially successful as they were growing until 2008	No subsidies Punishment for self-consumption by law/paying for using PV Were affected by retroactive policy change	Unstable policy framework domestically New policy gave a signal to the PV industry that providers might have to go out of the market After the breakdown of the PV market, they lost all their bases for development and growth Installation returned at 2003 level Many companies re-focussed on doing maintenance and service only	Pushing Spanish Government to amend the new policy framework Parent company downsized the solar energy department Decision to maintain themselves in the Solar-PV sector but do not actively promote it Main strategy for them was inaction (not real adaptation) Opportunity for the company to re-focus on the maintenance and service business

(continued)

Company/ Institution	Renewal Energy Policy Change and its effects in Spain				Policy scheme in the host country
	Before policy reform	At policy reform	Post-policy reform effects	Strategic actions	
Watty	Helped to establish Spain as a reference country for renewable energy technologies	PV installation becomes almost "illegal"	Not greatly affected by domestic policy change, however, because their product was essentially designed for developing and under-developed countries	Government should make the use of fossil fuels illegal They established their market internationally from the very beginning (born-global firm) Seeing many companies in renewable technologies looking to internationalise Internationalisation as a key solution for local businesses like them in these times of crisis in the domestic sector	They enter new foreign markets where the policy is not against solar power technology early from inception
ICAEN (public institution)		New policy support focussed on energy efficiency, biomass and thermal generation	Internal demand for renewables slowed down	This institution is mainly responsible for the development of innovation and internationalisation of the companies originally from the Catalan Region Highly recommends internationalisation as a viable strategy for Catalan renewable energy businesses	Need to create an industrial cluster capable of producing all the necessary equipment in the sector Provides host-country information and financial support for exporting and conducting FDI
ACCIO (Catalan public institution supporting regional business competitiveness)	Initial policy design largely attracted foreign competition within the sector		Policy in Spain only imperfectly supports the outward internationalisation of the firms		

(continued)

Table II.

Company/ Institution	Renewal Energy Policy Change and its effects in Spain			
	Before policy reform	At policy reform	Post-policy reform effects	Strategic actions
Solartys (private association of mainly solar power actors in Spain)	Before the policy change, there was no need to internationalise because solar energy companies had a large domestic market Spain seen as one of the leading countries in renewable energies	Drastically reduced Feed-in-Tariff programme Extra taxes for photovoltaic activity (production and self-consumption)	Small companies were far more affected by the sudden and uncertain policy changes regarding renewables	After drastic policy change, Spanish RE companies need to internationalise to survive Their mission is to contribute their associated firms in terms of internationalisation, R&D, training and finance issues Knowing the energy policy scheme abroad would be necessary for successful firms' internationalisation They provide all the necessary information about new and country-specific energy legislation in each possible country

unexpected changes to home market conditions. Secondly, the establishment of such a generous policy mechanism also attracted large foreign investors into this sector within the country. This resulted in fierce competition between both domestic and foreign firms, thereby limiting the time and possibilities available to the former in building sufficient competitiveness. Finally, the high cost of these public feed-in-tariff incentives made it impossible to keep them for a long time, particularly when faced with the challenging consequences of the global financial crisis. Therefore, while the initially supportive renewable energy policy in Spain actually helped to achieve a rapid increase in its production that could satisfy internal demand, it failed to develop a truly competitive industry in both the domestic and international markets.

The results of this study also show that the subsequent and unexpected policy change towards a more unfavourable and less supportive regulatory framework regarding renewable energy development in Spain also negatively affected many companies, regardless of size, that were operating at home. This was because this policy reform damaged the internal demand and, as a consequence, led to many local firms not being able to forecast any further development of the domestic market in the near future. From the case companies' perspective, such largely unexpected regulatory changes in the home country usually represent increased political uncertainty and instability. Indeed, constant and drastic changes in the domestic institutional-regulatory framework in the form of "stop and go" policies can be found among the key barriers for the sustained development of renewable energy companies (Negro *et al.*, 2012), ultimately, discouraging green entrepreneurs and investors from taking the risk needed to develop such technologies. Besides, a lack of trust in governmental policy not only affects the current renewable technologies expansion but also their future development.

Following Cuervo-Cazurra (2016) and Cuervo-Cazurra *et al.*'s (2018) interesting theoretical frameworks regarding the influence of the home country on the internationalisation of (especially emerging market) firms, the highly country-specific context of this research clearly showed that political uncertainty due to the highly changing renewable energy policy in Spain could be viewed as a key *institutional scape driver* for the understanding of the relatively early and reactive internationalisation operations of many domestic firms in this sector. As seen in the previous section, most of the founding entrepreneurs and/or key managers of our firm cases appeared to have decided to move operations to institutionally more stable countries abroad to avoid the higher level of political uncertainty in the home country's sector. No clear evidence, however, seems to emerge from our cross case analysis regarding the other possible mechanism of *institutional learning*, as decision-makers in our sampling case firms did not actually appear to have developed any special learning process nor specific ability that could be useful for the management of a higher degree of political diversity that might be found in countries, due to their dealings with high political uncertainty and instability in the home sector.

Indeed, the theoretical arguments above are essentially borrowed from the recent research on emerging markets multinationals (Cuervo-Cazurra, 2016) that usually move towards more advanced and politically stable economies. However, in this research, we have also demonstrated, at least partly, the potential validity and extension of this research for the particular case of a highly developed Western economy such as Spain, but interestingly, also a country with high political uncertainty in the emerging renewable energy sector over time.

7.2 Early and reactive internationalisation as a survival-seeking strategy for Spanish renewable energy firms

This paper has also discussed the conceptual framework section regarding the key differences between the gradual internationalisation process/Uppsala model and the more recent INV/born-global theory in regard to the earliness of initial foreign entry after domestic venture establishment and the subsequent international expansion, and the

consequences for firm long-term survival and eventually growth. Accordingly, there are several reasons to believe that internationalisation from venture inception that is either too early or too late could lead to a higher risk of failure versus the managerial capacity for a given firm to identify an optimal time to internationalise.

Due to both the increased foreign competition in the home market and the high level of domestic institutional-political uncertainty in the Spanish renewable energy sector, most of our investigated case companies that were created in Spain at or during the drastic reform in domestic energy policy can be considered as early internationalising firms. This is because they vary from none to a maximum of four years in difference between venture inception and first foreign market entry. Therefore, they all rapidly reacted to the increasingly uncertain market conditions following post-energy policy reform in the declining domestic market of origin by extending their operations soon after inception towards other more institutionally attractive foreign country-markets than those found at home[9]. They did so as a sort of “institutional scape strategy” that was aimed at ensuring their long-term survival and/or eventually future growth, and mostly to overcome their increased constraints and regulatory-based difficulties in the home market. Thus, although this unexpected policy change was largely detrimental for internal renewable energy market development, entrepreneurial internationalisation has, perhaps, become the most viable solution for many Spanish renewable energy companies that need to survive.

Furthermore, in many of our case interviews with entrepreneurs-managers and sector experts, several respondents underlined the importance of finding more supportive regulations and incentives abroad when discussing foreign market selection. In fact, a more favourable and continuously supportive energy policy in other countries can encourage renewable energy firms to look for better opportunities in those foreign markets (Wüstenhagen, 2003; Løvdal and Neumann, 2011). Løvdal and Neumann (2011) demonstrated that one of the main reasons for the internationalisation of companies in the marine energy sector is to be able to count on a highly favourable political scheme (including adequate regulations, concession laws, access to grid, price subsidies and several other institutional issues). Unfortunately, Spanish policymakers have, thus, far failed to develop an effective regulatory mechanism in the renewable energy sector. Furthermore, no specific policy has ever been developed to support the international growth of Spanish renewable energy companies. A lack of this kind of policy is, perhaps, one of the main challenges affecting this sector in Spain.

Based on all the above-mentioned evidence obtained from the investigated firm cases, it can be generally concluded that when compared to the largely uncertain regulatory system for renewable energy development in Spain (especially after the global financial crisis), more supportive policy frameworks are eventually available in several other foreign markets globally. Thus, ignoring the considerations based upon psychic and/or cultural distance logic in terms of foreign market selection, as posited by traditional approaches, it seems that careful institutional environment assessments abroad have a crucial impact for many of these firms in their decision to go international, and in particular, where to do so in the global renewable energy market. Therefore, broadly speaking, our cross-case results derived from early internationalising Spanish renewable energy firms tend to fit the notions derived mostly from the IE approach (Cavusgil and Knight, 2009). However, their international success may also critically depend on their continued capacity to learn and adapt a wider geographical focus and coverage to other different energy regulatory systems and demand conditions elsewhere.

8. Conclusion, implications and final remarks

In this empirical study, we have primarily examined how unexpected regulatory changes at the domestic energy policy-level have drastically affected many Spanish renewable energy

companies. These companies typically lack the relevant size, and therefore, the capacity to influence – by means of lobbying – the development of a more favourable energy policy framework at home. Thus, it was only through their reactive and early internationalisation efforts that they were able to survive and eventually prosper in more institutionally stable environments than at home.

In our opinion, this study makes several academic contributions in this emerging research field. Firstly, from a theoretical standpoint, our paper complements previous research primarily on firm-specific factors that enhance internationalising firms' survival and growth (Autio *et al.*, 2000; Sapienza *et al.*, 2006; Mudambi and Zahra, 2007; Carr *et al.*, 2010; Meschi *et al.*, 2017; Patel *et al.*, 2018) through a focus on the impact of a changing institutional-political environment at the home country-level, something which is largely out of the control of firms (Peng, 2001). In particular, we have focussed on examining the relevance of the domestic political environment in the activity and development of renewable energy companies by reflecting on how a higher degree of political uncertainty, due to constant regulatory changes at home, may indeed act as a key "institutional scape driver" (Cuervo-Cazurra *et al.*, 2018). This ultimately encourages early and reactive internationalisation among local firms to ensure survival. Secondly, from an empirical contextualising perspective, our paper provides rich and unique context-specific evidence of the unstable political environment regarding renewable energy in Spain over a period of time, and its key impact upon the sector development in this country. In particular, based on a multiple case study design, we have analysed how a certain number of Spanish renewable energy firms had to react to the increasingly hostile energy policy regulations at home, along with a corresponding decline in the local market demand, by means of entering other more institutionally attractive renewable energy markets abroad relatively early in their life cycle.

Our research also offers relevant implications at managerial and policymaking levels. From a managerial perspective, two important implications for renewable energy emerge from this study for practitioners. The first reveals the risk of focusing only on the home market, as it can be too dependent on uncontrolled variations in domestic energy policy. Second, the ability to make an early re-focus and adapt to the attractiveness of different countries is another important element within the renewable energy sector. In addition, businesses operating in this emerging sector should also be aware that the impact of a policy reform can be different based on the degree of the technology maturity. As renewable energy technology becomes more mature, it seems to be somewhat less policy-dependent. Evidence collected from some of our cases show that companies in the wind energy industry, for instance, usually tend to be less affected by policy-level changes in comparison with those competing within solar energy. This is simply because wind energy is already a slightly more mature technology than the solar variant, and its development does not depend as much on financial incentives and stronger policy support.

In terms of public policymaking, the findings indicate that a more stable and supportive, long-term perspective in the domestic renewable energy policy is essential for the sustained growth and development of this emerging industry. Many countries, such as Denmark and Germany, first started supporting the development of local companies in renewable energy sources within the country and then, after a strong industrial cluster had been created at home, fostered the development of these technologies in the international context. Furthermore, as aforementioned, supportive renewable energy policy in some countries has adapted to providing important incentives for promoting increased export and internationalisation of domestic firms, such as in the case of both the wind and photovoltaic sectors in China (de la Tour *et al.*, 2011; Liu and Goldstein, 2013). Thus, continued policy support appears to be absolutely necessary for the global development of this green industry. However, our results clearly indicate the rather negative long-term effects of feed-in-tariff programmes that are too generous, and of constant and uncertain changes at the policy-level, and sudden attention-shifts

placed by policymakers in the sustainable development of the renewable energy industry. Such uncertain “stop and go” policies and unexpected “attention shift” practices by policymakers in charge of domestic energy policy, such as the ones observed in the case of Spain, could, thus, become the main institutional barriers for the sustainable development and expansion of these green technologies (Negro *et al.*, 2012). This is because they ultimately generate a lack of trust in the local government and discourage entrepreneurs and investors from taking the risk of developing these new technologies further.

Looking at our results from a broader, critical perspective, they strongly suggest that it will be really difficult for not highly developed nations to achieve dominant industrial positions in the new, renewable energy sectors. These new industries require governmental support and incentives in their early phases. Bjørgum *et al.* (2013) describe how wave and tidal energy companies enter different countries to access key resources. These companies are, thus, part of a global development process in which companies may originate in one given location, while conducting research and development (R&D) activities in another, and then helm piloting and demonstrations tests in a third country, before finally performing energy production and/or sales in other countries. Even though the firms enter new geographical markets and relocate activity-based on the available support schemes, a limited number of countries have the resources to fund the early development years of such new industries. We have described how Spain reduced economic incentives due to budget restrictions caused by the financial crisis. Germany and China have developed dominant international positions in the new, renewable energy sectors, based on sustained policy support and incentives. In the mature renewable energy sector of hydropower, we note how the USA based AES Corporation invests in countries exemplified by Vietnam, Jordan and El Salvador, while Norwegian Statkraft has production facilities in Albania, Nepal and a number of other countries. The broader effect of the importance of economic support mechanisms in the development of new, renewable energy industries is a systematic advantage for developed countries compared to less developed countries when it comes to building competence and competitiveness.

Finally, our study is not free of some limitations that, in turn, could reveal interesting future research directions. While the potential benefits of conducting highly contextualised case-based research are being used by several IB-oriented researchers (Welch *et al.*, 2011), our research is undoubtedly limited and highly country-specific, due to our main focus of examining the Spanish renewable energy context. Other countries’ domestic energy policy, such as Norway’s for instance, are more focussed on stimulating technology R&D within the domestic firms operating in this sector, but do not directly subsidise them to develop new types of renewable energy. Therefore, further quantitative and qualitative research should focus more on examining the crucial importance of the domestic institutional context in other countries for a better understanding of the industrial development and internationalisation within the global renewable energy sector. In addition, more in-depth case studies focussed on understanding how companies can better adapt themselves to the huge fluctuation and cross-country differences observable in public energy policy are needed. Finally, considerably more knowledge is required as to how new internationalisation processes currently being developed by renewable energy firms are becoming increasingly embedded within global value chains in this emerging sector.

Notes

1. Feed-in-tariff is an obligation for uses to purchase at a set price, with the electricity being generated by any renewable energy resource. The level of tariff and its design characteristics vary among countries (Lewis and Wisser, 2007).

2. "Feed-in Law" in Germany.
3. "Renewable Energy Act" in Germany.
4. Chinese Governmental subsidies have provided a significant manufacturing cost advantage to Chinese producers, which includes more than just offsetting higher shipping costs (Goodrich, James, and Woodhouse, 2011). In 2012, during the imposition of a new set of tariffs, the US Department of Commerce concluded that Chinese solar photovoltaics exporters have received subsidies ranging from 2.90 to 4.74 per cent (International Trade Administration, 2012).
5. (<https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energy-directive>).
6. (www.mincotur.gob.es/energia/desarrollo/EnergiaRenovable/Paginas/paner.aspx).
7. The Institute for Diversification and Saving of Energy, IDAE, is a part of Ministry of Industry, Energy and Tourism of Spain.
8. Underwriters Laboratories (UL), is a company that provide safety certificate for technological products. For exporting products to the US, having a UL safety certificate is compulsory.
9. However, only one case firm in our sample, Watly, can be considered to be a truly born-global firm, as this firm's management had, as inception, decided to start selling their modules only to international clients that were located in foreign countries where the RE sector was growing faster.

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About the authors

Alex Rialp-Criado is an Associate professor at Universitat Autònoma de Barcelona, Spain, and Adjunct Professor at the Norwegian University of Science and Technology. His research covers international business and entrepreneurship, with a focus on the internationalization of new ventures and established small and medium-sized enterprises, and international entrepreneurship in the renewable energy sector. Alex Rialp-Criado is the corresponding author and can be contacted at: Alex.Rialp@uab.cat

Seyed Meysam Zolfaghari Ejlal Manesh is currently an Assistant Professor at Rowan University, NJ, USA. His research field is international entrepreneurship with a special focus upon policy-level effects and entrepreneurial internationalization in renewable energy sectors.

Øystein Moen is Professor at the Norwegian University of Science and Technology. One of his key research areas is the internationalization process of small and medium-sized firms. Currently, his work focusses on the renewable energy sector with involvement in several large research programmes.