

Tracking synergies between energy security of supply and the development of the wind energy industry in Spain: an approach from a multilevel policy analysis.

Sub-theme: Policy instruments and their coordination

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Extended abstract

Key words: policy instruments, wind energy, competitive market, content analysis

1. Introduction - Motivation

Renewable energy has been a staple of the international policy agenda since the second oil crisis (1979). In its origins the source for alternative energy sources emerged as a result of scarcity of natural resources combined with the high risks involved by dependence on external energy supply. More recently, the issue of renewable energy has become even more urgent due to increasing societal demand and the pressure to counter, or at least mitigate, the effects of climate change. This has given way to a wide ranging spectrum of policy experiments aimed at promoting alternative energy sources and the associated actions for industry promotion.

The objective of this paper is to review critically the strategies for pursuing energy security of supply and for supporting renewables industry in Spain. We focus on a particular subset of strategies aimed at supporting the wind energy industry by focusing on government and industry response to the current multilevel framework on energy and environment (Corfee-Morlot et al., 2009, Bulkeley, 2005, Hooghe and Marks, 2003). To this end we analyze government activity at the point of delivery (Hogwood et al., 1984) by considering the dynamics of need emergence and policy response underpinning the build-up of a new market.

Our key objective is the identification of two key dimensions of policy-building. First the set of priorities, strategies and goals, perspectives and the activities stemming from them; second, the mechanisms that facilitate interaction across agents (e.g.: regulations, availability of resources and economic instruments such as subsidies and technical support). The study seeks to make sense of the multi-level policy portfolio (EU, central and regional Spanish governments) by considering studies on the impact of EU measures in the Spanish context (de Alegría Mancisidor et al., 2009, Montes et al., 2007), institutional barriers and drivers for the introduction of new technologies (del Rio and Unruh, 2007) as well as the stability and flexibility of policy instruments (Perez and Ramos-Real, 2009). In so doing this analysis seeks to advance understanding of policies reformulations toward further alignments between public goals, private motivation and a competitive environment.

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The paper will frame the debate on rationales for government intervention not only by considering the promotion and supporting of new markets (Salmenkaita and Salo, 2002, Mazzucato, 2011, Manseau and Campagnac, 2005) but also the intuitional capacity (Künneke, 2008) and governance structures (Bodas Freitas and Von Tunzelmann, 2008, Busch et al., 2005, Jordan et al., 2003) (Morata and Font, 1998). At the same time, specific issues in the energy industry will be highlighted by focusing on structural characteristics such as stability, creation of specific capabilities and competitive energy market conditions (Enzensberger et al., 2002, Moselle, 2011, Lewis and Wiser, 2007).

In order to address the changes in policy intervention and industrial response we apply techniques for document review, document content analysis and discourse analysis to a variety of official texts and business documents. This will facilitate the identification of "patterns of relationships" such as "expressions regarding favourable position to different decisions and actions" as well as linkages across different action points

2. Summary of the case

Spain has been extremely successful in promoting the production of wind energy. Early individual initiatives on wind turbine in the 1980s were financed by dedicated energy agencies and investment subsidies based on government purchases. In the 1990s new laws heralded a new era of mandated contractual purchases of electricity by companies and a more competitive market structure (see Fig. 1). Additionally a new regulatory framework has been introduced, including a tariff scheme that reduces private risk and guarantees the profitability of Spanish companies. Finally, in 1999 a long-term strategy was introduced through the Plan to Promote Renewal energy, establishing a set of rules, incentives and objectives for 2010 (Perez and Ramos-Real, 2009).

As a result of the described policy and the correspondent business response, Spain has become the Europe's second and the world's third largest wind energy market. The growth of wind power in 2007 has been the second in the world market behind the USA and twice as big as Germany - a country that, however, remains leader in the ranking of installed power (GWEC, 2009). Between 2000 and 2008 installed capacity in Spain has increased 7.5 times (compared to 4 times in the case of Germany). Therefore, the Spanish wind energy sector was well-positioned to meet the government target of wind energy capacity by the end of 2010 – and the Spanish Wind Energy Association (AEE) estimates that overall installed capacity can be doubled by getting operational new technologies in onshore and offshore wind farms by 2020. The national wind energy industry started to export wind generators to China, India Latin-America and some African countries (Montes et al, 2007).

Beginning 2008 the economic crisis forced a revision of the foretold strategy. Several measures aimed at reducing the tariff deficit consisted in lowering the subsidies received by wind energy facilities (RD 1614/2010). Furthermore, the most recent reformulation of the subsidies regime (RDL 1/2012) suspended any further action on the new and some of existence wind energy facilities which highlights potential increase in market risk and reduces expectation on the long term strategy for the expansion of the renewals industry.

3. Methodology – Expected results

This paper follows a qualitative approach by applying techniques on “textual content analysis” (Stone, 1997). This will be applied to a variety of official texts and business documents

regarding the development of wind energy in Spain³. The empirical study will be framed by the application of two techniques: semantic analysis and discourse analysis. At first semantic analysis will be applied to identify relationships between the topics searched in the text. Then those topics will be taken as input to follow discourse analysis on the variety of argument representing different positions and perspectives.

More specifically, semantic analysis will facilitate the identification of common topics around the two key dimensions of policy-building described before. Atlas.ti software will be applied to systematize and assess content by means of qualitative techniques ((Mayring, 2000) rooted in Ground Theory. To approach those common topics, the development of a thesaurus⁴ will help to cluster and coordinate the variety of terms founded.

At last, from the inputs developed in the previews step, discourse analysis can be applied to find and represent "*patterns of relationships*" such as "*expressions regarding favorable position to different decisions and actions*" as well as linkages across different action points. Those relations will be critical to develop a framework to analyze influence of the policies under study (Hajer and Wagenaar, 2003, Forester, 1993).

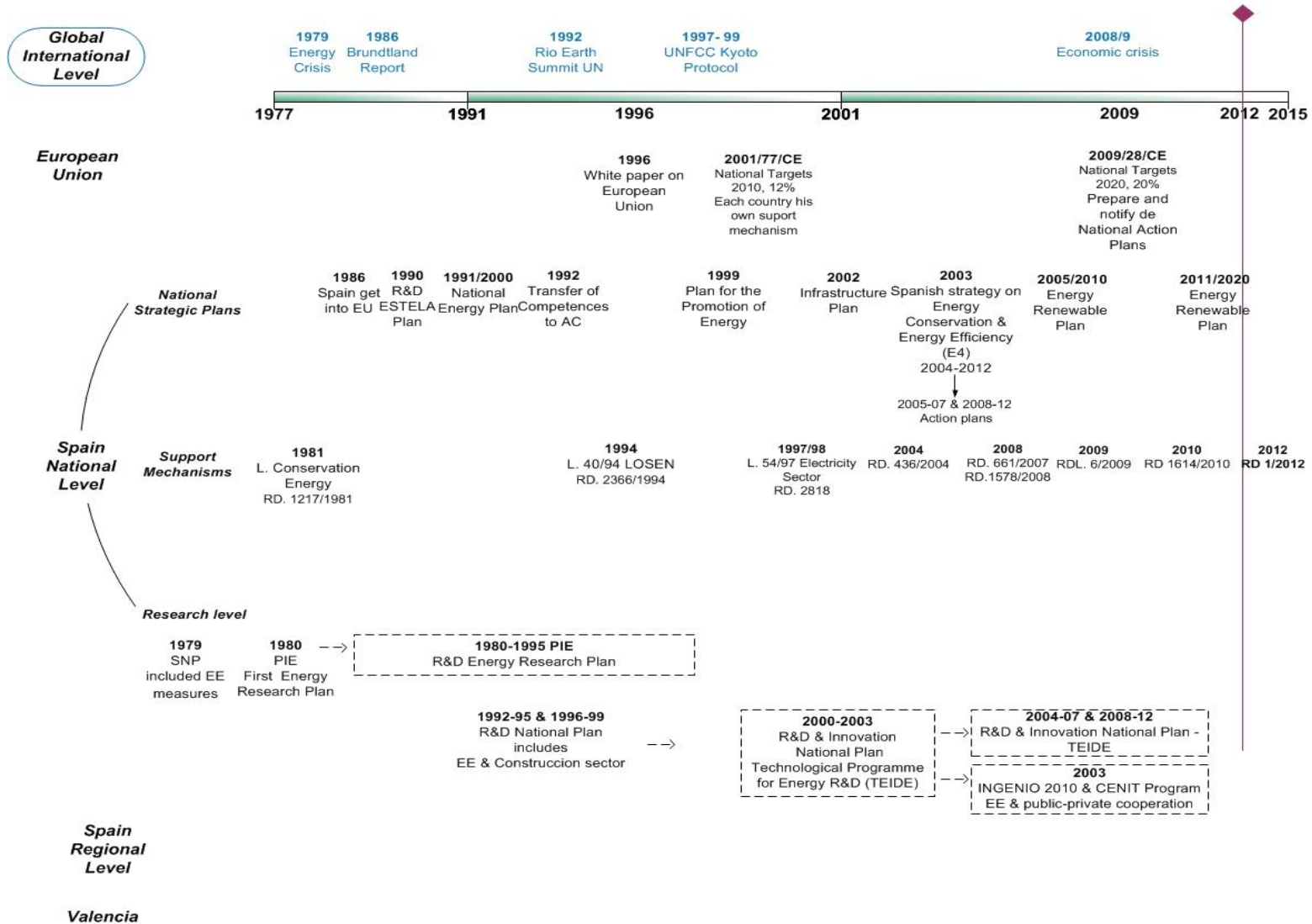
4. Conclusions – Policy implications -Expected contribution

The Spanish success in the development of world-leading technologies and the formation of knowledge-intensive networks in the emerging wind-energy industry, provide an excellent backdrop to investigate the interplay between public intervention and the articulation of systemic dynamics of a new market. The last reformulation of the policy instruments challenge the wind national industry to reveal competences acquired during the protected period to operate under competitive conditions. In that sense, the proposed research seeks to highlight chronologically the developmental feedback effects -associated to the set of multilevel policy portfolio- incorporated within the long term sector strategy. By doing so, the study will contribute to a broader reflection on the policy challenges associated to the emergence of a new sector, and particularly to the emergence of industries that respond to pressing societal needs.

³ The documents include: European policies and initiatives (includes EU directives, and R&D specific programs), National plans on energy sector, Official documents on regulatory mechanisms (laws and royal decrees), Business reports and annual memories of business associations and, Industrial publications

⁴ Thesauruses are built up by documental technique in order to reduce the volume of vocabulary. They are post-coordinated languages in which the terms represent the themes contained in the document allows. They include a variety of relation between terms (i.e. equivalency, hierarchical and associative) that represent and frame the ideas contained in the document (Lancaster and Graduate School of Library Science (Urbana-Champaign), 1991, Langridge and Langridge, 1992, Maniez et al., 1993)(SLYPE, 1982)

Fig. 1. Key events and policies on Renewals energy in Spain. European, national and Regional level (1979-2011)



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