ENERGY SYSTEM TRANSITION THROUGH STAKEHOLDER ACTIVATION, EDUCATION AND SKILLS DEVELOPMENT

ENTRUST

Europeanisation of national policy dialogues on energy pathways

Deliverable D4.2

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ACRONYMS

AER	Alternative Energy Requirement
CDU	Christian Democratic Union
CIDD	Crédit d'Impôt Développement Durable
CITE	Crédit d'Impôt Transition Energétique
CSU	Christian Social Union
COP	Conference of Parties
CSS	Competitive Secure and Sustainable
DECC	Department for Energy and Climate Change
DG	Directorate General
EC	European Commission
EEG	Erneuerbare-Energien-Gesetz
EEX	European Energy Exchange
ESCO	Energy Service companies
ESCS	European Coal and Steel Community
EuroACE	European Alliance of Companies for Energy Efficiency in Buildings
FIE	Friends of the Irish Environment
FIT	Feed in Tariff
GHG	Greenhouse Gases
GSE	Gestore dei Servizi Energetici
IEA	International Energy Agency
ILP	Iniciativa Legislativa Popular
MS	Member State
NEEAP	National Energy Efficiency Action Plan
NIMBY	Not In My Back Yard
NREAP	National Renewable Energy Action Plan
NSE	National Energy Strategy
OECD	Organisation for Economic Co-operation and Development
OREDP	Offshore Renewable Energy Development Plan
PCI	Project of Common Interest
PLS	Policy and Legal System
PSO	Public Service Obligations
REFIT	Renewable Energy Feed in Tariff
RES-E	Renewable Energy Supply – Electrcity
RPUE	Représentation permanente de la France auprès de l'Union Européenne
R&D	Research and Development
SEM	Single Electricity Market
SGEA	Secrétariat général des affaires européennes
SME	Small and Medium-sized Enterprises
SPD	Social Democratic Party (German)
TEN-E	Trans-European Energy networks
TFEU	Treaty on the Functioning of the European Union
TOE	Tonnes of Oil Equivalent
TSO	Transmission System Operator

About the ENTRUST Project

ENTRUST is mapping Europe's energy system (key actors and their intersections, technologies, markets, policies, innovations) and aims to achieve an in-depth understanding of how human behaviour around energy is shaped by both technological systems and socio-demographic factors (especially gender, age and socio-economic status). New understandings of energy-related practices and an intersectional approach to the socio-demographic factors in energy use will be deployed to enhance stakeholder engagement in Europe's energy transition.

The role of gender will be illuminated by intersectional analyses of energy-related behaviour and attitudes towards energy technologies, which will assess how multiple identities and social positions combine to shape practices. These analyses will be integrated within a transitions management framework, which takes account of the complex meshing of human values and identities with technological systems. The third key paradigm informing the research is the concept of energy citizenship, with a key goal of ENTRUST being to enable individuals overcome barriers of gender, age and socio-economic status to become active participants in their own energy transitions.

Central to the project will be an in-depth engagement with five very different communities across Europe that will be invited to be co-designers of their own energy transition. The consortium brings a diverse array of expertise to bear in assisting and reflexively monitoring these communities as they work to transform their energy behaviours, generating innovative transition pathways and business models capable of being replicated elsewhere in Europe.

For more information, see **http://www.entrust-h2020.eu**

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Executive Summary

The principal objective of the ENTRUST project is to develop an understanding of the "human factor" in the energy system in order to utilise derived knowledge to foster the transition towards a sustainable energy paradigm. To develop this understanding, it is necessary to assess the policy landscape that influences energy consumption, the progress of the energy transition, and the public discourse on, and engagement with the energy transition – this work forms the basis of Work Package 4. Within this WP, T4.2 entitled "Assessment of Europeanisation in national policy dialogue" operates on the premise that "Europe's energy systems are deeply integrated" assesses the extent to which this is reflected in national policy dialogues.

Despite all the efforts to date to shape the European project including the energy dimension, complete integration of energy infrastructures and markets has not been achieved (Auverlot *et al.*, 2014). In order to address the existing problems that result from this non-integration it is necessary to develop a meaningful, coherent, and comprehensive EU energy policy. Such an EU energy policy is vital to deal with global issues:

- Tackling climate change requires not only a shared commitment but also a common means;
- Building a coherent and comprehensive climate policy could strengthen the leading role of Europe in the international climate negotiations;
- Energy security issues must be considered in a comprehensive and inclusive manner on a EU-wide basis, rather than solely on the national scale, in order to tackle common problems and further protect European interests;
- Ensure the competitiveness of European companies;
- Inspire the European project which is losing momentum.

This deliverable, D4.2, analyses the development of such a European energy policy, the different Europeanisation processes influencing this development, and to what extent this EU vision is transcribed into the national policy dialogues.

The Europeanisation topic has been widely studied over the past two decades. While some authors describe Europeanisation as the emergence of exclusively European governance structures, the majority agree that Europeanisation describes a transfer process between the European institutions and the member States (MS). Integration of energy strategies, policy and legal systems (implementation of laws) plus the resulting effects on the energy system constitutes the concept of Europeanisation that supports this analysis. **Thus, Europeanisation may be conceived as a dynamic process of policy transfer under the influence of several actors: European Commission, European Parliament, European Council, the MS and the lobbyists.**

The methodology of this study was developed to analyse, respectively, the top-down, bottom-up, and horizontal Europeanisation that have been implemented in order to decrypt the strategies at stake in six EU countries – namely France, Germany, Ireland, Italy, Spain and the UK. For each country, the analysis has involved: a review of policy making processes – the national contribution to EU policy making, the transposition of EU directives, and national policy making; a review of the evolution of the Policy and Legal System (PLS) over the period 2005-2016; and ascertaining to what extent the European energy vision is transferred to the national level.

Measuring the gap between the energy vision promoted by the European Commission and the reality of the existing energy system provides interesting insights that can facilitate the design of effective policy recommendations that serve the European project. Finally, the study of the horizontal Europeanisation is relevant insofar as it identifies the most interesting policies that, potentially, should be replicated. The main insights of the analysis of Europeanisation processes of each country are presented below. An extensive treatment of the concept of Europeanisation, with illustrative diagrams can be found in Section 2.

France

France has been an active player in the process of Europeanisation, having been involved in both top-down (led by the EU), and bottom-up (led by individual MS) approaches. On the top-down side, the French energy system integrates almost all dimensions of European energy policy, as demonstrated by its adherence to the European energy frameworks and its commitment to the Energy Union project. In addition, the presence of some bottom-up cases in the analysis reflects the capacity of France to assert its interests in the European energy project. Its long standing participation in the creation of the EU and its economic power – as the 2nd largest economy in the EU – has conferred France with the political power to influence the process. The French energy transition, and its active role during the COP21 conferences, has put France at the centre of the table in the European energy dialogue.

The assessment of Europeanisation in the French national policy dialogue, with illustrative diagrams, is detailed in Section 3.1.

Germany

Germany has been an active player in the Europeanisation processes. Its economic power and its leading political position in the EU confers on the country an exceptional capacity to orientate European institutions' decisions. The high capacity of German representatives for shaping of the Energy Union (EurActiv, 2016) or its influence in the promotion of renewable energies – Germany has developed a range of Renewable Energy Acts since 2000 – illustrates this situation perfectly. The country possesses a strong power to influence policy – whether it is reflected in the dynamics between MS at the EU institutional level or via bottom-up Europeanisation. Indeed, the term "Germanisation" has been used in the research and policy literature to reflect the spread of German energy policies at extra-national level, which could elevate tensions on the energy topic at EU level. The country integrates, sometimes reluctantly, all the dimensions of the European energy strategy. However, Europeanisation is not the most powerful driver of the transformation of the German energy system, as national interests prevail there. The two main pillars of the German energy transition, the nuclear phase out, and the focus on renewable energy, were decided without reference to Europe or other MS. (It is also noteworthy to point out the level of citizen involvement in the German energy system. They are prosumers – rather than only consumers – active through the energy cooperatives).

The assessment of Europeanisation in the German national policy dialogue, with illustrative diagrams, is detailed in Section 3.2.

Ireland

Ireland is involved in the Europeanisation process, although its level of influence is probably low compared to the other MS analysed in this study. Its high energy dependence is associated with the peripheral location of the country; and the economic and political crisis that occurred between 2008 and 2011, in particular, has reduced its room for manoeuvre. During this crisis, it is fair to say that Ireland's focus was not on energy transition. However, since economy has come out of recession there is increasing evidence of real steps towards the energy transition. It is appropriate to depict Ireland as a follower which undergoes a **top-down Europeanisation process**. Its energy policy is inextricably tied to the European energy strategy, even if it capacity to transpose Directives correctly remains a challenge so far. Brexit could be a real game changer for Ireland allowing it to take the opportunity to assert itself as a European regional leader.

The assessment of Europeanisation in the Irish national policy dialogue, with illustrative diagrams, is detailed in Section 3.3.

Italy

Italy seems to successfully integrate some dimensions of the European energy strategy**Error! Reference source not found.**. For instance, Italy is on right track to reach its 2020 renewable energy objective. And the European energy vision has constituted a guiding principle in the shaping of the Italian PLS. Although Italy is subject to **top-down Europeanisation** integrating the European vision, some energy decisions are taken solely with regard to national factors, or are mainly attributed to them. For instance, the renouncement of nuclear energy was related to the Chernobyl disaster. Also, for example, their potential achievement of the 2020 objective of a reduction in GHG is mainly due to the economic crisis. The implementation of top down Europeanisation is also hampered by difficulties in effectively transposing EU directives. Although the Italian contribution is less pronounced than other MS, the country participates in the construction of the European energy strategy in order to assert its interests. The Italian focus on the international dimension of the Energy Union is very likely linked to its energy security issues. Its contribution could be described as a **pace-setting form of bottom-up Europeanisation**. Establishing new partnerships for the gas supply can be viewed as the core of its strategy. As an illustration of this, the country's involvement in two major gas pipelines is noteworthy.

The assessment of Europeanisation in the Italian national policy dialogue, with illustrative diagrams, is detailed in Section 3.4.

Spain

Spain has had little success in asserting its interests at the European level. Its power to influence policy direction is low compared to other MS, with members such as Germany, the UK, and France having more impact on the shaping of Directives. Nonetheless, on some occasions the country proceeds through bottom-up mechanisms to assert its interests. The diplomatic strategy initiated by Spain to increase its interconnection with France illustrates the Spanish approach towards Europeanisation. Spain could be considered as a follower. The economic crisis that hit the country impeded the integration of EU measures into the Spanish PLS. It prevented good transposition of energy and environmental Directives, as the economic dimension was, and remains, the priority. The 'Sun tax' is a perfect example of this prioritisation that diverting investment away from the renewable energy sector (Walsh, 2015). The recent positive signs from the Spanish economy as well as the resurgence of influence at the European level – as illustrated by the central role of Miguel Arias Canete as the EU commissioner for Climate Action and Energy – could be a game changer.

The assessment of Europeanisation in the Spanish national policy dialogue, with illustrative diagrams, is detailed in Section 3.5.

United Kingdom

The UK has been actively involved in the Europeanisation process over the last decade. The UK always advocated for flexibility and independence within the European project. Reinforcing its position of leader, it implemented pace-setting, bottom-up Europeanisation to promote climate change policy. The UK enjoys a leading position in the Europeanisation process. However, contrary to Germany, which uses its power to model the EU energy project based on its interests, the UK tries to limit the influence of the European Commission. Brexit and its consequences will bring about major changes in the relationship between UK and EU institutions. UK may opt for a collaborative strategy modelled on the Norwegian case (with EU agreement). Otherwise, the country may content itself with bilateral agreements (with the agreement of other MS). Only time will tell. Nonetheless Brexit does not necessarily mean that the UK national energy decisions will not cohere with key aspects of EU energy policy, insofar as both the UK and the EU share common challenges.

The assessment of Europeanisation in the UK national policy dialogue, with illustrative diagrams, is detailed in Section3.6

Replicability of key national policies

The review of the selected key national policies is summarised in the following table which identifies the key factors that have contributed to the success of these policies in their different contexts of application.

Policy	Key success factors and potential for replicability
The sustainable Development Tax Credit – France	- Wide area of application: households, businesses and the industrial sector - Wide variety of renovations - Smooth coordination - Regular updates on technical developments - Unique interest rate - Communication among stakeholders
Special fund for energy efficiency in SMEs – Germany	- Two programmes addressing lack of expertise/awareness and financing - Low access threshold - Support from regional partners - High quality of the audits - Transparent financing structure - Selection of applicants – prioritizing those with low expertise in energy efficiency - Interest rate adapted to ease private sector investment
The Renewable energy feed in tariff – Ireland	- Ensuring sufficient profitability for the investment - Inherent versatility: in terms of application and design - It reduces the economic risks to RES-E producers - Long-term and stable policy environments - Takes into account varying electricity costs of different RES-E technologies to avoid rent seeking by producers - Transparency of the instrument - Avoids complicated pricing structures and administrative burden
White Certificates – Italy	- Avoids overlapping with other incentives - Adapts the instrument to EU changes at international level, and to the evolving energy objectives - Targets new technologies that cannot be supported in other ways - Monitors the value of the certificate in the market - Complementarity with other instruments such as tax deduction schemes, guarantees funds, *etc.*
Urgent measures to tackle emergency in housing, and energy poverty – Spain	- Context of deep economic crisis, high unemployment rates, social exclusion, and increasing fuel poverty - Strong commitment at regional level of all actors involved: government, local authorities, citizens, and suppliers - Good communication among stakeholders - Active participation of citizens
The Climate Change Act 2008 – UK	- Outlines a comprehensive national strategy to address climate change - Establishes long-term, achievable targets for GHG reductions - Ensures the carbon budgets are adapted to support the ambitious targets - Independent body with technical expertise to support the UK government's deployment of the Act - Periodic reporting on the mitigation and adaptation programme – responsibility lies with the Secretary of State for Energy and Climate Change - Empowers administrations with flexibility to set their ETS systems through secondary legislation (replicability with similar structure – union of nation states) – reviewed by the independent body - Large scope to have a comprehensive approach, including the industrial and related sectors - Coherent and stable policy on climate change for many years

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All the selected policies have been successfully implemented in their national context. By analysing the key success factors of each case, it is possible to extrapolate from them some good practices to be taken into account for replicability purposes. However, further studies on the individual national energy contexts in which the different policies and instruments have been developed are recommended to ensure the successful replicability of the measures.

Even if the Member States' energy systems are to some extent integrated, they are not sufficiently so in order to effectively tackle global challenges such as energy security, climate change, and the transition toward a low carbon economy, amongst others. Overcoming these obstacles requires a meaningful, coherent and comprehensive EU energy policy that is shaped through Europeanisation.

The innovative conceptual approach to study Europeanisation implemented in this document relies on two elements. First, an analysis of the dynamics between Member States, the entities of the European Union, and the various lobbyists offers insight into the shaping of the European energy strategy initially formulated and supported by the European Commission. Second, the identification of the processes and strategies implemented by Member States to either transpose this European vision or to assert their interests at the European level enables the characterisation of Europeanisation. Understanding the shaping of the European energy strategy via the study of key national policy documents is difficult insofar as Europeanisation is a dynamic process that encompasses numerous intersecting variables.

Ultimately, this analysis argues that the main contribution of Europeanisation to the energy transition is in the framing of the space in which Members States develop the transition of their energy model – by integrating the dimensions of the Competitive, Secure and Sustainable framework and the Energy Union project into their Policy and Legal System (PLS), for instance. Nonetheless, dynamics in the Europeanisation process should not be regarded as the unique factors driving the energy positioning of member states. National factors and international events can appear as major game changers impacting directly on the national energy strategy of individual MS.

Although the current European energy strategy seems to offer solutions to the aforesaid challenges, it is too early to formulate any conclusion about its effectiveness. Nonetheless the study identifies interesting policies to be replicated, as well as policy recommendations that could consolidate its structure and its initial achievements.

The scope of the analysis in this study is, necessarily limited. The required focus on the role of the European Commission, due to the central role it plays in in shaping the European energy strategy, while vital, can only offer a partial perspective on the role of European institutions on the process of Europeanisation. Developing a more in-depth analysis requires a closer examination of the balance of power and the strategic negotiations between the institutions of the European Union, namely, the Commission, the Council and the Parliament. This analysis could be further enriched (through additional to the scope of this project) by broadening it out to examine the process of Europeanisation in additional Member States.

1 Introduction

1.1 Work Package 4 in the ENTRUST project

In keeping with the overall objective of the ENTRUST project, namely, fostering the transition toward a sustainable energy system by investigating the "human factor" in the energy system, Work Package 4 focuses on policy analysis. It depicts the policy and regulation landscape that impacts on the energy system in the five largest energy consuming countries in the EU, France, Germany, Italy, the UK and Spain, along with Ireland, to identify the levers and the barriers to enacting a sustainable energy transition. Building on the initial mapping of policies produced for T4.1, this task, T4.2, assesses the degree of Europeanisation of the energy policy landscape in individual MS by examining key national policy documents, as well as assessing their potential alignment with communities' initiatives and visions. These analyses will inform T4.4 – the development of the Policy Tool-Kit – which will integrate the work produced for the tasks in WP2 and WP3, as well as the other tasks in WP4, in order to draw up recommendations for MS to promote a sustainable energy transition.

1.2 Task 4.2 presentation

The description of Task 4.2, titled "Assessment of Europeanisation in national policy dialogue", makes the observation that "Europe's energy systems are deeply integrated", emphasising the high interdependence of the Member States' energy systems. This task measures the extent to which this reality is recognised in national policy dialogues. In order to accomplish this, the task assesses the degree of Europeanisation of the national energy policy landscapes, primarily via the analysis of key policy documents. In addition, T4.2 carries out a replicability analysis of the most interesting policies mapped in T4.1. Through the identification of the key factors which drove the success of these specific policies, T4.2 aims at showcasing the best practices that are replicable at the European level.

2 Europeanisation in the context of the EU energy transition

2.1 Background of the EU energy issue at EU level

The 'European project' was conceived at the end of World War II based on the notion of an energy community, and aimed at bringing peace and unity to the continent. Robert Schuman, the French Foreign Minister in 1950, proposed the Schuman Plan which had the ambition of pooling French and German energy resources, namely steel and coal. From this it is clear that energy has been a key topic contributing to the construction and development of the European Union. The energy exchanges continued in the 1950s through the creation of the European Coal and Steel Community; as well as the European Atomic Energy Community – which had the purpose of creating a cutting-edge market for nuclear power in Europe (Dyduch, 2015).

Further progress towards the European Union project put aside the energy topic, prioritising other matters such as the Common Agricultural Policy, the free movement of people and resources, as well as the implementation of the single currency. The oil crisis in 1973 brought the energy topic back to the centre of the debate. The initial action on energy was the introduction of the First Energy Package via EU Directives in the 1990s. This package's main goal was pursuing the liberalisation of the electricity and natural gas markets, which has been implemented after long and controversial discussions on the topic of monopolies between MS. The Second Energy Package was also underpinned by an economic perspective. It allowed the entry of new gas and electricity suppliers in the MS' markets and enabled consumers – industrial consumers from 2004 and domestic consumers from 2007 – to choose their own gas and electricity suppliers (Kerebel, 2006). It also introduced the mandatory establishment of national energy regulators, and the introduction of provisions to separate the activities of transmission and distribution. These energy packages have significantly contributed to the development of the European energy system.

During this process of developing the internal energy market, European institutions have progressively extended their control on energy decision-making, as just illustrated, even if a lot of competences on the energy topic remain at MS level. The EU continued this process of development with the issue of the third energy package in 2007. Its main objectives were the further liberalisation of gas and electricity markets by ensuring the complete separation of production, transmission and distribution activities, the protection of consumers, and the harmonisation of the power of national regulatory authorities.

The signing of the Treaty of Lisbon in 2007 appears as an inflection point in European energy governance, as it instituted a clear share of competences between the EU and the MS. It implies that both EU institutions and MS are empowered to legislate and adopt binding acts, which was a first move towards a common policy. In addition, the Treaty of Lisbon defined the contours of the European energy policy through 4 main objectives:

- Ensure the functioning of the energy market;
- Ensure security of energy supply in the Union;
- Promote energy efficiency and energy saving and the development of new and renewable energies;
- Promote the interconnection of energy networks.

The extension of EU competencies to the national energy markets was made through a common climate policy. The Green Paper 'A European strategy for Competitive Sustainable, and Secure energy' (CSS) published in 2006 contributes to the shaping of a common European energy policy (European Commission, 2006). It identified 6 key energy policies priorities that must be addressed by the EU:

- Completion of the internal gas and electricity markets;
- Energy solidarity between member states;
- Tackling security and competitiveness in the energy supply;
- An integrated approach to tackling climate change;
- Innovation and technology;
- A coherent external energy policy.

This strategic roadmap was accompanied in 2008 by the "2020 climate & energy package". Contrary to the 3rd energy package (2007) that was developed following a market-centred logic, this package corresponds to a set of political binding regulations directly related to climate and energy. It aims at ensuring the accomplishment of its climate and energy targets: 20% cut in greenhouse gas emissions compared to 1990 levels, 20% of EU energy from renewables, and a 20% improvement in energy efficiency.

The election of Jean Claude Junker at the Presidency of the European Commission in 2014 revived the conception of energy as a central pillar of the European project. The second priority of his programme proposed the fulfilment of the Energy Union through the construction of a new European energy policy. In line with the CSS ambitions, the Energy Union is based on 5 dimensions (European Commission, 2016):

- 'Security of supply: diversifying Europe's sources of energy and making better, more efficient use of energy produced within the EU';
- 'A fully integrated energy market: using interconnectors which enable energy to freely flow across the EU without any technical or regulatory barriers';
- 'Energy efficiency: Consuming less energy in order to reduce pollution and preserve domestic energy sources. This will reduce the EU's need for energy imports';
- 'Climate action – emission reduction: renewing the EU emissions Trading System, known as the carbon market and pushed for worldwide involvement in tackling climate change';
- 'Research and innovation: supporting breakthroughs in low-carbon technologies by coordinating research and helping to finance projects in partnership with the private sector'.

Despite all the efforts to shape the European project, including the energy dimension, the complete integration of energy infrastructures and markets has not been achieved (Auverlot *et al.*, 2014), nor has a comprehensive energy policy been developed either (Alexandre C, 2014; Archer *et al.*, 2010).

The lack of coherence of the CSS framework is often pointed out, mainly because each priority is managed independently from the others. An action enhancing the progress on one priority could result in detrimental effects for other priorities. Indeed, the development of renewable energies supported via financial mechanisms, perturbed the market and led to a rise in the energy bill for private consumers. Moreover, the increasing share of intermittent (RES) sources in the network, which are not fully integrated, endangers the security of supply – a key pillar for the EU. Given the current state of the energy system, the security dimension of the energy supply relies, inevitably, on fossil fuel sources that emit greenhouse gases (GHG).

It is possible to observe similar problems in the implementation of the CSS framework and the Lisbon Treaty. Maisonneuve (2004) underlines the absence of vision in the Treaty, as well as the lack of means to implement it, as the main reasons for the European energy crisis. The ambiguities associated with the distribution of responsibilities[1] within the Treaty of Lisbon have prevented a more balanced energy system: on the one hand, the tools and procedures for the setting up of the energy market have progressed, but, on the other hand, the economic crisis and the developments in the global energy landscape have instead favoured a conservative reading of the treaties by the MS (Maisonneuve, 2014). These external factors have contributed to putting the European energy policy out of action. The economic crisis leading to a global economic slowdown reduced the demand for fossil fuels. Consequently, their prices decreased as well as the CO_2 quotas[2] allocated to MS. Taking advantage of this situation, certain MS resorted to fossil energies, especially US coal – which was very cheap due to the development of shale gas there.

At the same time, the development of renewable capacities to meet with objectives of the European energy framework resulted in a situation of overproduction in an energy network that still faces bottleneck/loop issues (ENTSOE, n.d.; Morecroft, 2012; Du Bois, 2012). The development of renewable energy was favoured by national market-based instruments, mainly in the form of feed-in-tariffs (FIT) and the subsequent decrease in the energy production resulted, most of the time, in an increase in the energy bill for private consumers to finance the subsidies for renewables.

The Energy Union represents the latest step in EU energy policy making. Its implementation is intended to tackle the problems identified above. However, critics argue it is not powerful enough to bring about the level of integration needed in order to deal with global issues (Fischer & Geden, 2015) and that a more comprehensive EU energy policy needs to be developed to address these issues:

- Tackling climate change requires not only a shared commitment but also common means. Building a coherent and comprehensive climate policy could strengthen the leading role of Europe in the international climate negotiations;
- Energy security issues must be considered in a comprehensive and inclusive manner, on both the EU and the national level, in order to tackle common problems and further protect EU interests;
- Ensuring the competitiveness of European companies;
- Inspiring the European project which is losing momentum.

It is suggested that aligning the national political and legal frameworks, and developing a meaningful, coherent, and comprehensive EU energy policy is key to tackling these issues.

This study aims to analyse recent development of the European energy policy; the different Europeanisation processes influencing this development; the extent to which this EU vision is transcribed into national policy dialogues; and whether the current EU energy policy responds to identified global issues.

[1] MS decide about their energy mix, while the EU is responsible for the security of supply. (It is noteworthy that the Treaty of Lisbon contains makes reference to "a spirit of solidarity" which should prevail between MS in the implementation of energy policy.

[2] While a tonne of CO_2 traded around 35 euros in 2008, it plummeted to less than 3 euros in 2013

2.2 The concept of Europeanisation

i. Literature review and conflicting views

The Europeanisation topic has been widely studied over the past two decades. While some authors consider Europeanisation to be the emergence of exclusively European governance structures, the majority agree that Europeanisation describes the transfer process between the European institutions and the MS. Radaelli (2004) and Cowles *et al.* (2001) among others, describe Europeanisation as a process rather than a status. Lenschow describes it as follows: "It is not a dependent variable but rather a process leading to still unspecified outcomes" (Lenschow, 2006). Although a consensus exists over the nature of the object transferred – generally a rule, a procedure, a policy paradigm, a shared belief or a norm – the direction of this transfer is a source of dispute between the main political theorists.

The liberalism school of thought emphasises the power, and the important role played by international and supranational organisations like the EU, and advocates the **top-down approach**. It assigns a strong executive power to the European Commission which implements its policy via regulatory and legal pressures. Akin to a downloading mechanism (Howell, 2004), the MS have no choice but "adaptation, learning or evasion" (Tôller, 2004) of their political legal system in order to comply with the European vision. The amount of transformation required to match with the European vision defines the MS goodness of fit. Into this perspective, Radaelli & Pasquier (2009) and Knill & Lenshow (2005, 2002) define Europeanisation as a process of 'construction, diffusion and institutionalisation of rules, procedures, and policy paradigms, as well as shared beliefs and norms which are primarily formed, debated, and defined at the EU level – and then transposed on the level of domestic discourse, public policies, institutional structures, and even group identities'.

This vision confronts the "realism" school of thought, which usually considers States as the most important actors and unique holders of the decision-making powers. The upholders of this vision develop a **bottom-up approach**. This mechanism focuses on the capacity of the MS to influence the upper European level in order to assert its interests (Hang, 2011). According to Börzel, MS can use 3 types of national "uploading" strategies (Börzel, 2002):

- **Pace-setting**: domestic policies are exported to the European level and subsequently adopted by other MS;
- **Foot-dragging**: it aims at blocking or delaying costly policies, seeks to stop or at least reduce the attempts of some MS to upload their preferred policy models to the European level;
- **Fence-sitting**: it aims neither at exporting preferred policies to the European level nor at preventing the others from doing so.

A final mechanism of Europeanisation is **Horizontal Europeanisation,** which refers to the transfer between MS of the European Union (EU). Horizontal Europeanisation is carried out via a replicability strategy which analyses the key factors for implementation. Additionally, certain authors note the facilitating role of the EU for inter-State transfers as an arena of communication (Lenschow, 2006).

Europeanisation is intertwined with the concept of European integration (EI), so it is not uncommon to find debates in the literature on what differentiates them. According to Schmidt, EI incorporates policy construction and formulation at EU level, which includes the interaction between national and subnational actors, while Europeanisation corresponds to the impact of the EU on domestic structures, specifically economic policies and policy-making. This point of view supports, to some extent, Radaelli's definition of the two concepts: while EI implies "the understanding of a process in which countries pool sovereignty", Europeanisation focuses on "what happens once EU institutions are in place and produce their effects" (Radaelli, 2002). However, the boundary between both concepts can become blurred due to the fact that Europeanisation has a dual function as both an independent variable in domestic politics, and as the processes by which domestic structures adapt to European integration (Howell, 2004).

In conclusion, it appears that Europeanisation is being used in the literature to represent various processes and thus is subject to various interpretations. Dyson and Goetz describe the multiplicity of concepts associated with Europeanisation: '

> it is sometimes used narrowly to refer to implementation of EU legislation or more broadly to capture policy transfer and learning within the EU. It is sometimes used to identify the shift of national policy paradigms and instruments to the EU level. Other times it is used in a narrower way to refer to its effect at the domestic level or in a more expansive way to include effects on discourse and identities as well as structures and policies at the domestic level. (Dyson and Goetz, 2002)

ii. Europeanisation definition in this deliverable

This deliverable relies on the Dyson and Goetz (2003) definition of Europeanisation as a "complex interactive 'top-down' and 'bottom-up' process in which domestic polities, politics and public policies are shaped by European integration and in which domestic actors use European integration to shape the domestic arena". The concept here is interpreted as a political transfer process which operates on two levels – European and national (See Figure 1):

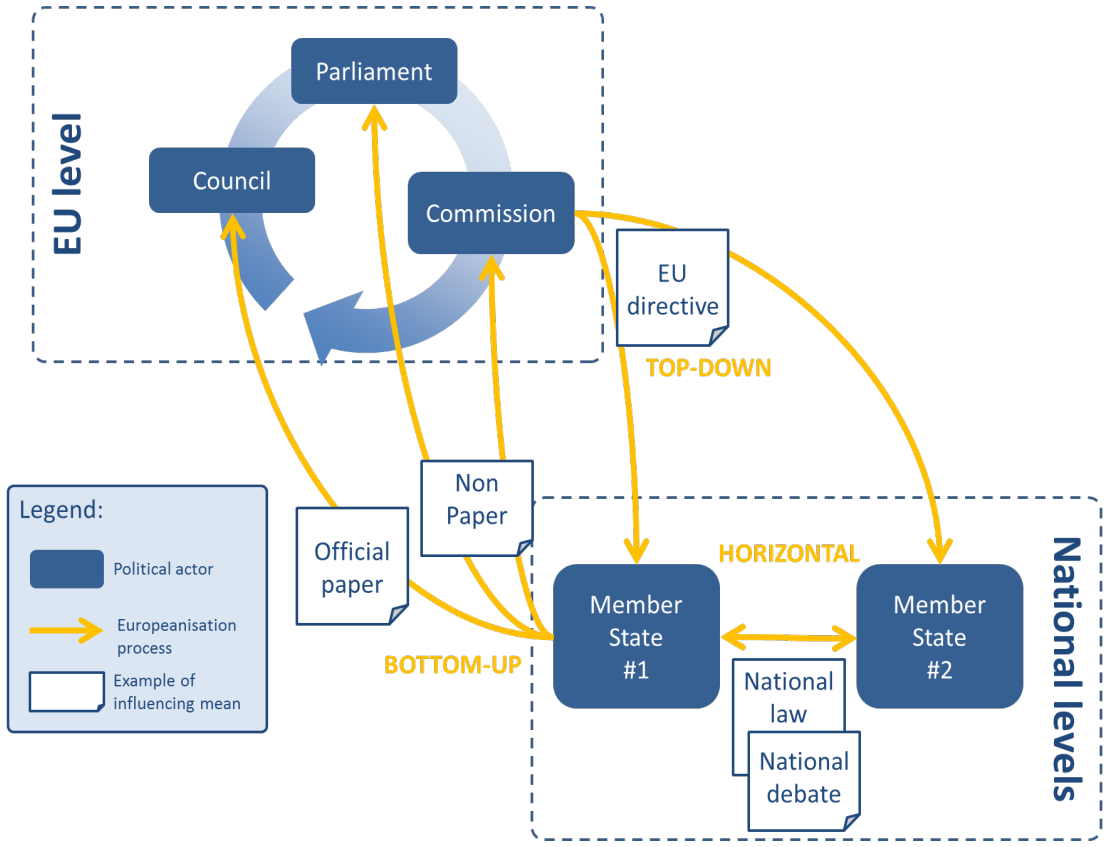

Figure 1: EU policy making and Europeanisation processes

Policy making process at EU level is influenced by the power dynamics at EU level between the three main institutions of the EU, *i.e.* the Commission, the Council, and the Parliament, representing the respective interests of the European "government", the MS, and the citizens, approximately – they are the prime movers in the development of European energy policy. The influence game in which the EU institutions (as well as private lobbyist interests) participate falls within the purview of institutional rules that contribute to shape the European energy regulations whether it refers to norms, decrees and directives. All these laws support the European energy vision.

Policy making at national level integrates different processes. The implementation of national regulations leads to the transformation of national politics, that in turn modifies its policy and legal framework at the

national level. This implementation supports top-down Europeanisation, as defined in the previous section. It corresponds to the downloading of a new set of rules, norms and policies that match more or less with the national political and legal system (PLS). The degree of alignment between European regulations and the national PLS defines the degree of fit with the EU energy vision. To completely understand the evolution of the Member State PLS, it is necessary to take into account the impact of national regulations – whether developed nationally or copied from other MS – on the PLS. This replicability mechanism refers to the aforesaid horizontal Europeanisation between two MS. On their side, MS have the power to influence EU institutions through the bottom up Europeanisation process. This process of Europeanisation is conceptualised on the theoretical bases developed by Hang (2011) and Börzel (2002) in the previous section.

The national PLS is the result of both the transposition of European regulations, and national laws, and it produces results that are perceptible at the energy system level (market and infrastructures). The alignment of national energy strategies with the European strategy involve integration of energy strategies, policy and legal systems (implementation of laws) plus the resulting effects on the energy system constitutes the concept of Europeanisation that supports this analysis. **Thus, Europeanisation may be conceived as a dynamic process of policy transfer under the influence of several actors: European Commission, European Parliament, European Council, the MS and the lobbyists.**

Therefore, when it is said that a MS is Europeanised in this study, it indicates that the MS participates, either in part, or in all, of this process. Consequently, this analysis is aimed at the characterisation of Europeanisation processes, and not only to confirm the existence of the process. This characterisation is reflected in the following table on the different typologies of Europeanisation processes.

Table 1: Characterisation of the different processes of Europeanisation

Process of Europeanisation	Characterisation
Top-down	• **Accommodation**: "downloading" the EU directive is an adaption process for national structures, policies and identities • **Transformation**: "downloading" the EU directive poses a challenge and needs some changes in national structures, policies and identities • **Inertia**: a process where the absence of political will to bring about the required "downloads" at national level is the main characteristic. • **Retrenchment**: a process that encounters strong opposition in the MS and provides an impetus for anti-European interests
Bottom-up	• **Pace-setting**: domestic policies are exported to the European level and subsequently adopted by other MS • **Foot-dragging**: aims at blocking or delaying costly policies, seeks to stop or at least reduce the attempts of some MS to upload their preferred policy models to the European level • **Fence-sitting**: aims neither at exporting preferred policies to the European level nor at preventing others from doing so
Horizontal	• **Replicability**: This section aims at increasing horizontal and bottom-up Europeanisation by discussing how one good practice policy/rule at national level could be replicated in other MS

In order to confine the scope of the study, it takes the position that the European regulations adopted reflect the remit of the European Commission – and not the EU Council nor the Parliament. This decision is supported by two main arguments:

- The European Commission is responsible for compliance with European treaties, it develops the political vision of the EU, and it possesses executive power at European level.
- The European Commission initiates the directives at EU level on which this analysis focuses.

The result of this study is the characterisation of the different Europeanisation processes in six European countries. This assessment will allow highlighting some recommendations on the Europeanisation of national policy dialogues on energy pathways.

2.3 Methodology

This analysis offers an in-depth assessment of the processes and strategies at stake during Europeanisation. With this objective in mind, the methodology chosen focuses on three levels of study: political, regulation, and energy system. These three levels constitute the national energy landscape in which it is possible to observe the alignment with European energy strategy. However, the identification of the Europeanisation process is not straightforward since there are differences between the three different levels. **Error! Reference source not found.** describes the three levels considered and some reasons that might explain these gaps.

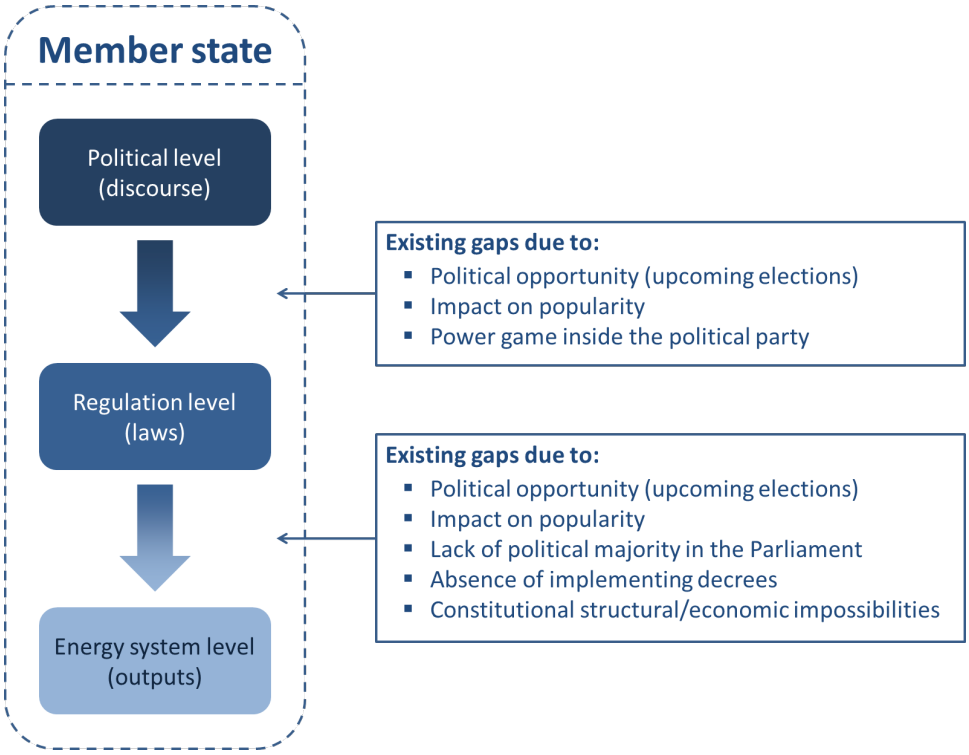

Figure 2: Levels of analysis in the policy making process in this report

- **Political level**: it encompasses the national strategy and discourses within a specific MS. Policies are decided at this level, i.e. the energy strategy of the country; but the real drafting of the law and its implementation are done at lower levels (regulation and energy system levels). However, there are differences between the discourses at this level and the final legislation at regulation level. These gaps exist mainly due to different political interests, perceived political opportunities, negative impact from non-popular measures, or power struggles within political parties.
- **Regulation level:** this level represents the policy and legal system (PLS) of a Member State, resulting from the transposition of European regulations, and national laws. The legislation also differs from the actual outputs in the energy systems. These gaps could be explained by the

political opportunity, impact on popularity, lack of political majority in the Parliament, absence of implementing decrees, or constitutional, structural, or economic barriers, among others.

- **Energy system level**: it refers to the whole energy system framework, from energy generation and infrastructure, to the different sources of consumption.

The methodology attempts to analyse, respectively, the top-down, bottom-up, and horizontal Europeanisation that have been implemented, to decrypt the strategies at stake in six EU countries, namely France, Germany, Ireland, Italy, Spain and the UK. For each country, the analysis has encompassed: the review of policy making processes – (National contribution to the EU policy making, EU directive transposition and national policy making in Figure 3); a review of the evolution of the PLS over the period 2005-2016 (Policy & Legal system in Figure 3); to what extent the European energy vision is reflected at the national energy system level (Evolution of the energy system 2005-2016 in Figure 3).

Measuring the gap between the energy vision promoted by the European Commission and the reality of the existing energy system could provide interesting insights that could facilitate the design of effective policy recommendations that serve the European project. Finally, the study of horizontal Europeanisation is relevant insofar it identifies the most interesting policies that should be potentially replicated.

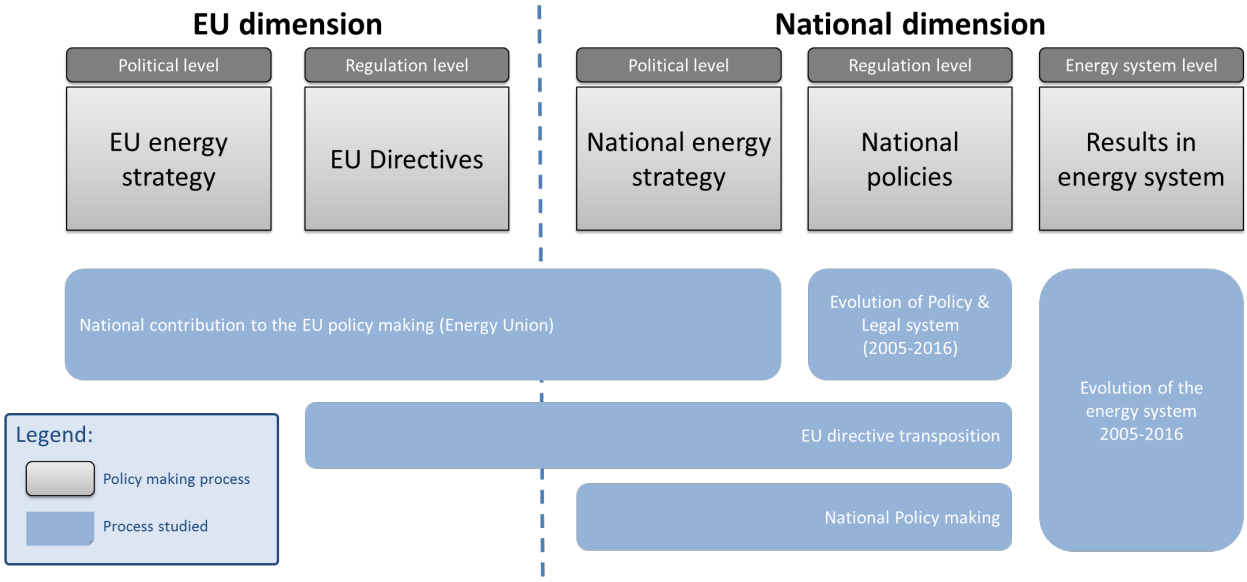

Figure 3: Analysis of the policy making process and hints of Europeanisation

The different processes analysed in each country are described as follows:

Evolution of Policy and legal system (2005-2016)

This section assesses to what extent national energy policy and legal frameworks have been influenced by Europeanisation up to the present day. It aims at reviewing the evolution of the PLS over the period 2005-2016, as well as the main strategic decisions and documents from that period. The analysis in this section encompass: 1) the presentation of the energy policy and legal framework over time; 2) the identification of key dimensions of national energy policies; and 3) an assessment of the impact of the EU on the evolution of the national political and legal system over time.

Analysis of policy making processes

This section aims at analysing the different Europeanisation processes along with the policy making process, through examples of key policy documents. It encompasses three types of analysis: 1) the national contribution to the EU policy making process; 2) an EU directive transposition process; and 3) a national policy making process and a related discourse.

National contribution to the EU policy-making process: example of the Energy Union

This section aims at analysing how the country participated in the construction of the Energy Union. The main objectives of this analysis are the presentation of the national position regarding the Energy Union, identification of actors and factors influencing the shaping of the regulation, the indication of how the country participated in the process and the presentation of the main results of its contribution.

EU directive transposition process

This section aims at presenting the national process of Directive transposition and the main issues when transposing EU Directives. The reason behind this choice is because directives support the European policy vision while leaving to the MS the means to implement its policy nationally.

It develops a case study over a specific Directive, to get direct insight on: 1) the level of national participation in the policy making process at EU level; 2) the degree of fit of national regulations with the EU directive; 3) the nature of the political discourse associated with the process; 4) Identification of the actors involved; and 5) the main influencing factors.

National policy-making

This section presents the process of one key national energy policy and its associated political discourse to assess the Europeanisation processes present at national level in a key national document. The analysis will: 1) identify the origin of the policy; 2) assess the integration of European energy dimensions within the policy; 3) identify the signs of Europeanisation in the policy; 4) present the interactions with other MS/EU during the policy making process. Regarding the associated discourse, the objectives are: 1) identify the origin of the policy; 2) present the discourse context; and 3) identify signs of Europeanisation in the discourse.

An overview of the energy system evolution 2005-2016

The section measures the evolution of the energy system through a set of indicators which are modelled on the five pillars of the Energy Union. It aims at assessing whether the country has entered into a low carbon and sustainable transition. It assesses to what extent the evolution of the energy system can be attributed to the Europeanisation process. It addresses the "results in the system" as illustrated in Figure 3.

Assessment of the degree of Europeanisation at national level

The previous sections allow the reader to have an overview of the different Europeanisation processes at stake in the country, and thus, draws up to what extent the country participates in the Europeanisation process. It also presents a characterisation of the processes, the identification of the dominant Europeanisation feature, and the country's positioning regarding the Europeanisation process.

Replicability analysis: Fostering Europeanisation

Finally, this section addresses horizontal Europeanisation, identifying at national level, the best policy practises that could be replicated in other countries.

3 Assessment of Europeanisation in the national policy dialogue

3.1 France

i. Evolution of the policy and legal system (2005-2016)

One important aspect that has driven French energy policy is **energy security**: first with major purchasing agreements with exporter countries as Netherlands, Algeria, Norway and USSR in the 1960s. Second, the creation of the European Coal and Steel Community (ESCS), a common market of coal and steel between six countries (Belgium, France, Germany, Italy, Luxemburg and Netherlands) precursor of the European Community and finally the development of the **nuclear energy**.

Initially considered as a military programme, nuclear was dedicated by President Charles de Gaulle and his successors to the production of energy. This strategic decision is reinforced by the successive **oils shocks** in 1970s.

The rapid development of hydro and nuclear power plants reduced the imports of energy and gave **stability to the energy market** (except for fuel for transport demand). The structuring of the French nuclear energy sector, made through the collaboration of a limited number of actors (the government, EDF and Areva mainly), achieved a great economic success – France electricity price was one of the lowest in Europe and the sector was responsible for a lot of wealth and jobs generation. Consequently, the **development of renewable energies was put relatively aside** by the government until the end of the 1990s.

Although the **low carbon nature of the French electricity mix** is somewhat fortuitous – global warming was not yet a concern after the Second World War – France came up to the 2005-2016 period with a mix that matches fairly well with the "**Competitive Secure and Sustainable"** (CSS) energy framework. This coherence could also be explained by the French positioning in Europe – founder of the European Union and first low carbon energy producer – that gave the country the opportunity to assert its interests in the European energy construction.

The three main objectives of the Programming law setting the Political Orientations (Law POPE) voted in 2005 (Legifrance, 2005) – **control energy consumption**, **promote energy savings** and **develop the low-carbon energy sector** – fell directly in with the European energy directions at that time. It is compatible with the energy security considerations announced at European level during the Hampton Court meeting in 2005. It vouches for a **top-down Europeanisation** that can be described as **accommodating.**

Nonetheless the long term target - the reduction of greenhouse gases emissions by 75% by 2050 - can be assimilated as an attempt of **bottom-up Europeanisation**. Indeed, this measure might carry weight in the shaping of the European Roadmap for building a competitive low-carbon Europe by 2050 that pledges for 80-95% GHG reduction compared to 2011. In this perspective, it constitutes a **pace-setting form of bottom-up Europeanisation**.

The implementation of the Energy Savings Certificates in France following the signature of the Kyoto Protocol, was inspired by the 2002 Energy Efficiency Commitment in the United Kingdom. This **horizontal Europeanisation** came before a **bottom-up Europeanisation** as the EU imposed through the Directive 2012/27/EC in 2012 the introduction of similar policies in the rest of MS.

Grenelle Laws 1 & 2 respectively in 2009 and 2010 confirmed the **French integration of European energy objectives** into the national regulation. As an illustration, the Law Grenelle 1 transposed the 2020 energy package and instituted the "Plan Bâtiment Durable" (Plan for Sustainable Building) which targeted positive energy buildings by 2020 just like Directive 2010/31/EU on energy performance of buildings. The Grenelle law 2 formalised the French thermal regulation "RT2012" and the development of the "fond chaleur" – financial support mechanism for renewable heat projects – as well as photovoltaic solutions for public

buildings so as to reach the French 2020 European commitment. The process of both Grenelle law suggests that the transposition of the directives was achieved under an **accommodation strategy**.

Despite this favourable position, the integration of the European objectives into the French regulation has not been perfect since 2005. France has faced **hurdles** on the **competitive dimension** of the European energy project. At least 8 European infringements - formal notice or reasoned opinions – were addressed by the European Commission to France between 2003 and 2016. The most striking example was the already mentioned differences between France and the European Commission over the opening of the electricity market prior the NOME Law (Law on the New Organisation of the Electricity Market) in 2010. These difficulties could be explained by the **vertical integration** of the energy sector in France - production, transport and distribution activities were in the hands of few actors with strong influences through active lobbying activities.

The **development of renewable energy** in France has encountered plenty of **pitfalls**. The implementation of Directive 2009/28/EC, during the French presidency, has faced some problems. The national debates around the Grenelle Act reveal the use of 'Europe' to legitimate French purposes and to ask for concrete measures to meet European targets (top-down Europeanisation) to 'catch up' other MSs, such as Germany, Spain or Denmark (horizontal Europeanisation). First Grenelle Act, adopted in 2009, confirmed the consensus around the European target of 23% renewable energy, but the subsequent Grenelle Act II faced a significant gap between objectives and implementation (Evrard, 2012). Indeed, despite the financial mechanisms setup by the government, the country is falling behind its 2020 EU renewable objective. The European Commission emitted at least 4 formal notices and reasoned opinions to France between 2005 and 2016. The failure of these transposition processes could be attributed to the French energy sector. The **dominance of nuclear energy** – considered low-carbon energy and not renewable energy by the EU – via a strong lobbying activity could have been an obstacle to the development of renewable energy. The government favours the energy produced by amortised nuclear assets at a lower price – enhancing the competitiveness of its industries – rather than investing in new pre-competitive renewable technologies. The recent reluctance to reduce the share of nuclear energy announced in the "Plan Pluriannuel de l'Energie" (Ministère de l'Économie, des Finances et de l'Industrie, 2016) supports this idea and slows down the deployment of renewable energies.

In conclusion, the **European regulation is an important driver** of the modifications that have influenced the French energy regulation between 2005 and 2016. Both the **deregulation of the energy sector** to open the market to competition and the **development of renewable energy** required by the European Union have set new objectives and challenges for the French energy sector. It is also important to note the recent modification of the French strategy concerning Europeanisation. The country seemed to adopt a more **proactive attitude** acting ahead EU directives and influencing the global process of Europeanisation - the French Law on energy transition for a green growth was submitted at national level before the set of the EU 2030 climate-energy strategy. Next developments in French energy policy will indicate if this new trend was only a consequence of the COP21 Conference or persistent in time.

ii. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

The French vision of the Energy Union was drafted in 2006 by the French Ministry of economy, finance and industry around 3 pillars (Ministère de l'Économie, des finances et de l'Industrie, 2006), in line with its position during the European Council in Hampton Court in 2005:

- Ensure that the energy we produce, import and consume to support our economic and social development remains today and tomorrow, **available and economically accessible for all**
- Progress towards a **sustainable** use of energy that take account of environmental impacts and depletion of fossil resources;

- Develop **employment** from the promotion of energy efficiency, renewable energy and other low-carbon technologies.

This positioning is reaffirmed in a note issued by the French authorities in February 2015 (French Authorities, 2015). In this note, the government has placed the **fight against climate change** at the **core** of its Energy Union conception, prior to the celebration of the COP21 in Paris, where the EU swould successfully contribute to an international agreement. During the last decade, global warming has become a trending topic within the French society, which is more and more sensitive to the consequences of climate change. A total of 74% (BVA, 2015) of the French felt concerned by the discussions held in the COP21 conference. It has been an objective at political level for many years, as the former President François Hollande declared its determination to "make France, the nation of environmental excellence" in a discourse prior to the conference (French Presidential office, 2012).

France has stressed the importance of **energy efficiency as a "keystone" of the Energy Union** strategy in order to reach the 2030 energy-climate objectives. In addition to the existing blueprint, France suggests the implementation of a **financial energy efficiency plan** relying on the European Investment Bank and the Juncker plan. The country has also advocated for the development of **low-carbon energy**, especially the **biomass** which can provide heat, electricity and biofuels, France having the largest bioenergy potential in Europe (Parikka, 2006). With the UK assistance, France has succeeded in inscribing **nuclear as a low-carbon source** of energy in the 16th March Energy Union project conclusions. This acknowledgment is a major point for the country as nuclear plays a central role in the energy mix - 75% of electricity comes from nuclear energy source (World Nuclear Association, 2016) - and the country economy (France benefits from a relatively low electricity price due to the lower production costs associated to nuclear energy).

Regarding the setup of new renewable energy objectives through the 2030 energy-climate objectives, the French government adopted a more cautious attitude in 2007-2008 due to its current difficulties to reach 2020 objectives. Although it supported the Commission proposal of a binding target of 40% reduction of GHG emissions by 2030 (in line with its nuclear profile), France was reluctant regarding the renewable energy objective. The country supported the 27% objective proposed by the Commission against the 30% advocated by the European Parliament. According to Lindgaard, France confronts renewable energies joining a group of states attempting to obstruct the adoption of binding national targets (Lindgaard, 2014). Surprisingly, the French transition law for green growth committed the country to reach 32% of renewable energy by 2030 (Bocquillon, 2015), contrary to its European position.

Besides, Auverlot *et al.* (2015) reminds that the **security of energy supply** is 'firstly a national responsibility' leaving to Europe the role of promoting diversification of energy sources and energy suppliers. To face the gas crisis situation, France has come out in favour of joint purchasing under several conditions (respect of competition rules) and has suggested the creation of a European crisis management centre responsible for the 'monitoring of flows and an optimisation of the use of infrastructure'. The setup of the 'capacity mechanism' to address the risk of blackout associated with reinforcement of regional cooperation should definitely reduce the risk of energy shortages in Europe.

A last preoccupation that concerns the French government is the protection of **energy-intensive actors,** arguing that the different mechanisms implemented should not decrease its **competitiveness**. Consequently, Paris has proposed to pursue the awarding of free carbon-allowance to industries that face international competitors.

Finally, on the governance of the Energy Union, France praises a **flexible mode of governance** with no 'superfluous administrative procedures' (Andoura & Vinois, 2015). Paris stands for a nuanced position between the partisans of a soft governance (UK, Czech Republic) and the ones advocating for a strong governance (Germany, Sweden and Denmark). France gives priority to **effectiveness** and **cooperation** between Member States and the EU, though it seems to favour national sovereignty on the energy matter (Lada *et al.*, 2015). Lada summarises the necessity to find 'the right balance between harmonisation of

certain aspects of the energy market and freedom for MS, which illustrates the politico-economic paradigm of France often qualified as a centralised country where decisions are taken by a strong state.

The definition of the French positioning on the Energy Union matter was a long process coordinated by the *Secrétariat général des affaires européennes* (SGEA) under the guidance of the French Ministry of Energy and the President of the Republic. SGEA was assisted in its mission by the *Représentation permanente de la France auprès de l'Union Européenne* (RPUE) which had brought closer the idea of other Member States without altering the French vision. Align the content of the Energy Union with its political interest is the priority for France which weighs in the European negotiation: EDF and Engie are the two first electric producers in the world. Besides, France has been ranked in the third position on the influencers' podium of the Energy Union according to a EurActiv publication in 2016 (EurActiv, 2016).

The contours of the French Energy Union vision matches with the Energy Union framework. Indeed, the European Commission issued a report pointing out the French assets and shortcomings regarding the fundamentals of Energy Union. The commission praised France for its diversity of gas suppliers, its regional cooperation, its greenhouse gases reduction policy and its dynamic "energy and climate" research and innovation - the country is above the EU average, the US and South Korea in the share of public money allocated to sustainable R&D through the cluster system - Nonetheless, the Commission raised the alarm on the low competition in the energy market - due to the high domination of the historical state suppliers EDF and Engie - the important investment associated with the nuclear power plant renewal and the achievement of the 2020 energy efficiency objective.

In conclusion, the French Energy Union vision is well established and **in line** with most of the results of the final Energy Union document. Its influences and positioning at European level has delivered **results that serve the country's interest,** as the acceptance of **nuclear as low-carbon energy**. Therefore, its engagement with the development of the Energy Union has been one of influencer and supporter of its national priorities in both its content and implementation.

EU directive transposition process: example of the Directive 2009/28/EC

The French procedure for transposition of EU directives into the national law is orchestrated within the ministries by 'transposition's correspondents' who are responsible for defining and monitoring the transposition process. First, an impact assessment analyses the effects of the Directive into national law to define the French negotiation approach. Once a directive adopted, follow-up meetings are organised to translate effectively the Directive into national legislative text. The process is illustrated by the example of the Directive 2009/28/EC on the promotion of the use of renewable energy.

Table 2: French transposition of Directive 2009/28/EC on the promotion of the use of renewable energy

Indicators	Outputs
Timing	26 months.
Issues	Delay in the transposition (the French Parliament authorised the Government to have recourse to law-making by ordinance[3]) Inadequate transposition (lack of implementation of transparent and clear administrative procedures to ensure the access of renewables to the grid) (European Commission, 2011).
Type of infringement	Formal notice Art. 258 TFEU. Additional formal notice Art. 258 TFEU. Reasoned opinion Art. 258 TFEU.

[3] Skipping the classic Parliamentary shuttle and its debate sessions, this process sped drastically the enactment of law giving the Executive the capacity to implement measures almost immediately

Indicators	Outputs
Participation in the making process	The conception of the Framework Directive was at the core of the French rotating presidency of the EU.
Level of fitness	Low: previous non-binding agreement to cover 21% of the electricity production by renewable was not achieved in 2011.
Nature of the political discourse	Prone to sustainable development and low carbon energies.
Actors involved	Ministry of Energy & Jean Louis Borloo.
Influencing factors	Despite diplomatic effort, EU institutions supported by MS such as Germany and Austria, refused to consider nuclear power as a renewable energy. A lack of institutional efficiency slowed the transposing process The global characteristic of the objective fitted well with the centralised nature of France. France aimed at classify nuclear as renewable energy. Its disqualification by the EU posed a national challenge (even if law Grenelle 1 ease the process)
Europeanisation mechanism	'Accommodation' and 'inertia' could define this transition process

Despite the modernisation of the parliamentarian process for transposing (law-making by ordinance and draw up of bill incorporating different Directives), the French transposition process suffers from deficiencies - parliamentarian saturation (Sevran-Schreiber, 2010). The general delay in the process reflects also certain inertia and lack of efficiency from the political establishment much more than any form of political disapproval.

A report on the transposition of European directives in 2006 ranked France as the 18th Member State in terms of deficit of transposition (Philip, 2016). The country cumulated 63 late transpositions in 2006 and among all ministries, the Ministry of Ecology and Environment suffered from one of the worst transposition ratio (5/13). The report points out 3 main reasons:

- "Shortcomings in the planning effort". For instance, the transposition of the Directive 2001/77/EC was not realised on schedule because of the non-realisation of the impact study.
- Too multiple stakeholders during the inter-ministerial or mandatory consultations could also explain the numerous delays.
- The "legal perfectionism of the French administration and the methods used to transpose". Different regulation cultures, the renegotiation of a directive act after its adoption by the European Council and the use of a transposition as a mean to go beyond the text of the directive to reform a topic cause delays and issues in the transposition mechanism.

National policy-making: example of the French Energy Transition law

The national policy making process is illustrated by the French Energy Transition law for a Green Growth implementation, which aims at ensuring the French energy transition to a sustainable energy system by 2050. The analysis of the discourse given by the French Minister of Environment and energy gives insights on how the law integrates the EU energy vision.

Table 3: Analysis of the French Energy Transition law for a Green Growth and the political discourse associated

Indicators	Outputs
Origin of the law	Promise of François Hollande during its presidential campaign. National debate on energy transition from November 2012 to July 2013 involving citizens, companies, experts, institutions. The COP21 in Paris was a driver for the debate
Fitness with EU energy framework	In line with the EU energy and climate objectives (2020 energy climate objective & 2030 Energy strategy). Certain dimensions of the law go beyond EU objectives (reduction of GHG emissions by 2050).
Signs of Europeanisation	The law makes direct references to the objectives of the 2020 climate-energy package and the 2030 climate & energy framework. The 7th indent of article 1 calls for a 'Union of Energy which guarantees energy security, a competitive and low-carbon economy via the development of renewable energies and the promotion of energy efficiency'. References to the EU are present all through the text with 33 occurrences related to EU directives and energy objectives.
Interaction with other MS/ EU	Low/none interaction with other MS. However, it is worth to note the tensions over the maintenance of ageing nuclear reactors with Germany, Luxembourg and Switzerland. The policy making was driven by national factors, not a European perspective. 'The European dimension of this transition remains largely neglected in the French policy debate' (Rüdinger, 2015).
Discourse name	Discourse over the Energy transition for a Green Growth
Context of the discourse	European Commission finalised an agreement on the 2030 energy-climate framework in October 2014. International negotiations in preparation for the Cop21 in Paris.
Signs of Europeanisation in the discourse	Purely national argumentation in the discourse: No explicit references to European institutions and other Member States. It is necessary to read between lines to detect rare references of European frameworks like CCS and the Energy Union. Promote sustainability and energy security to guarantee the growth of the economy, matching with CSS framework, is at the heart of the discourse but always considered under a French dimension

It can be noted that the French Energy Transition law for a Green Growth has influences of Europeanisation. From a **top-down approach**, it incorporates the different dimensions of the European energy strategy. The discourse aims at assigning France and its transition law to a model that can lead the world towards a green growth, which is a strong mark of **bottom-up Europeanisation,** reinforced by another statement of Segolène Royal: 'the Transition Energy Law for a Green Growth as a driver for the construction of the Europe of Energy'. This declaration supports a **pace-setting strategy of bottom-up Europeanisation.** It contrasts to some extent with the conclusion of Heinrich Böll Stiftung analysis (Bitoune, 2015), stating that the French energy transition has had so far a **limited impact** on the European energy policy 'for the simple reason that this was never constructed or thought of in a European way'.

iii. An overview of the energy system evolution 2005-2016

This section aims at assessing whether the French energy system is entering a low carbon and sustainable transition through an analysis of the evolution of a set of indicators in line with the 5 pillars of the Energy Union.

Market integration

Within the period 2006-2014, France progressed on its interconnection capacity to match with EU requirements: the country reached **11% electricity interconnection capacity** – EU objective being 10% by 2020 and 15% by 2030– and developed 6 gas interconnection points. France has contributed to the European market integration by reducing the number of gas and electricity congestions (situation of intense demand that exceed the network capacity) through **market coupling mechanisms**. Furthermore, France took part with some of its neighbour countries in the implementation of the 'flow based Market', an algorithm optimising energy flows management in accordance with price signals. On the specific topic of gas interconnection, France together with Spain and Portugal called in 2015 for the development of an **integrated gas market** in line with the EU roadmaps establishing a gas node in the **Mediterranean region**. This strategic positioning sometimes constrained by the evolutions of the energy system suggests that the **French policy is in line with EU market integration objectives**.

Market liberalisation

Liberalising the energy market is being a complex process in France. Indicators such as Herfindahl-Hirschman Index or "Power generation companies" measuring market concentration, indicate a **very slow even null progress** on the opening of the electricity market to competition. The low reduction of EDF market share, from 89.1% in 2005 to 83.8% in 2014 reveals the still dominant positioning of the historical players all along the value chain. The liberalisation process of the French gas market is progressing faster than in the case of electricity. The Herfindahl-Hirschman gas Index has evolved from at least 5,000 in 2005 to 4,000 in 2014, which illustrates this trend. Moreover, indicators as the 'entities conveying gas' into the country or the 'gas retailer concentration' varied from 13 to 19 and from 36 to 61 respectively in the period 2005-2014, indicating a slow progress but in accordance with the EU vision. Regarding transposition of market liberalisation EU Directives, the process in France was slow and incomplete, to the point of being called to order by the European Commission. The French market liberalisation is deeply influenced by its **long-lasting vertical energy market structure**.

Energy security

Despite the low level of French energy resources, its **energy dependency** in 2005 was **low** comparing to the EU average, reaching 51.6% and progressed positively until 2014 to get to 46.1%. These good results are mainly because of the **large nuclear deployment** – nuclear energy is considered as not-imported energy[4] Nonetheless, France can also rely on its **renewable production capacity (hydro mainly**) and reinforce its energy independency using the unexploited renewable energy potential.

Low-carbon and efficient energy system

All indicators on the evolution of the low-carbon nature of the French energy system report progress in the right direction. France can be hailed for both the **reduction of its CO_2 intensity** and the **increase of renewable energy share** in the gross energy consumption. That being said, two elements might misread this trend: 1) a significant role of the economic crisis that reduced on 25% the greenhouse gases emissions at EU level; 2) the implementation rate of renewable energy production capacity although favoured by feed-in tariffs goes in the right direction but appears to be insufficient to reach the 2020 energy-climate package relative to renewable energy (Gloaguen et Alberloa, 2013). Concerning energy efficiency, France is about to reach the Directive 2006/32/CE objective, achieving its 12Mtep energy savings by the end of 2016, but the country **struggles to speed up the process**. Indeed, two French associations[5] raised the alarm about the **shortcomings** of the French national energy efficiency plan (Ministère de l'écologie et développement durable, 2011) and the EC sent to France a reasoned opinion in 2015 on its failure to completely transpose Directive 2012/27/EU – targeting a 1.5% energy savings per year until 2020. This process constitutes an

[4] France imports uranium from foreign countries but locally implements the MOX fuel reprocessing.
[5] French network on energy transition (CLER) and *France Nature Environnement.*

original form **of bottom-up Europeanisation by a lobby**. France achieved **interesting progresses** in the transformation of its energy system toward a low carbon and energy efficient model but there is **plenty of work ahead**, overall in **renewable generation** – where the EU forced France in the development of wind and solar energy – and **energy savings** - especially because the cost of electricity production is low compared to its neighbour countries.

Research and Development

The **budget** allocated by France to specific Research and Development (R&D) activities to energy was **high** in 2006 compared to other MS and evolved increasingly until 2014, **favouring nuclear over other renewable** sources. In 2014, nuclear energy was the first receiver of R&D funds with 47% (550M€), renewable energy, storage systems and energy efficiency followed. The share in R&D funds is in line with the dominant position of nuclear energy in the national energy mix and the French ambition to be a worldwide scientific expert on this technology. The analysis of the French energy system allows identifying the influence of European energy policies in the transformation of the system. Nonetheless, the **natures of the drivers** that lead this evolution are **not always EU-related**. Other factors at national and international levels – opportunity to create jobs and economic value in France, the past oil crisis, the historical choice regarding energy policy (nuclear programme), the COP21 and the image associated – have contributed to define the current French energy system.

iv. Characterisation of the Europeanisation process

France has been an active player in the process of Europeanisation being involved in top down and bottom up approaches (see Figure 4). In the top-down side, the French energy system integrates almost all dimensions of European energy policy, as per its accordance to the European energy frameworks or its adherence to the Energy Union project. Nonetheless, the analysis reflects the appearance of a few bottom-up cases that have enable France to assert its interests in the European energy project. Its long standing participation in the creation of the EU and its economic power – as 2nd economy in the EU - might have conferred France with political power to influence the process. The French energy transition and its active role during the COP21 conferences have put France at the centre of the table in the European energy dialogue.

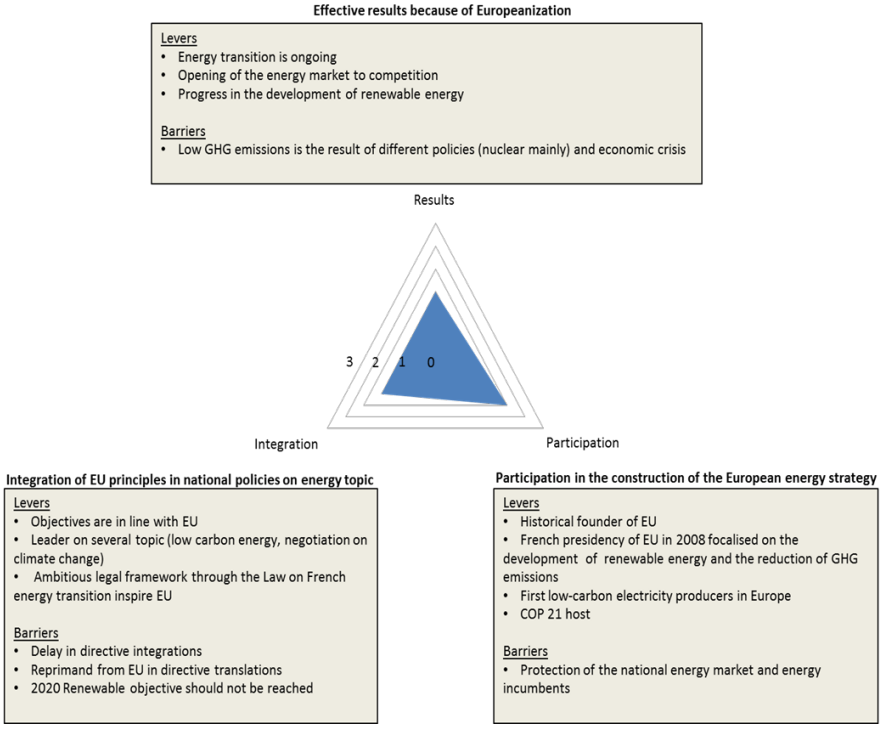

Figure 4: Characteristics of Europeanisation of the French energy system

3.2 Germany

i. Evolution of the policy and legal system (2005-2016)

The period between 2005 and 2016 is intertwined with the German Energiewende, defined as the volte-face on nuclear energy, and the large development of renewable energy. To fully understand the change over this decade, it is necessary to go back to the 1980s. The first insights of the German energy transition appeared with the State of Baden-Württemberg's decision to delay the construction of a new nuclear power plant considered as "not urgent" under the incessant objections of local population. Throughout the 1980s, a number of local groups, called Energiewende, gathered people keen to act locally and **prevent the construction of new nuclear power plants**.

A second event contributed to the shaping of the outline of the Energiewende: the **oil crisis**. The risk associated with the rising and highly volatile energy prices as well as potential supply cuts led the German Government to initiate the reconstruction of its energy model. A first building block corresponded to the Bundestag's Inquiry Commission on Future Nuclear Energy Policy which delivered in June 1980 energy policy recommendations under the heading of promoting energy conservation and renewable energy. The Chernobyl disaster in 1986 had a strong impact upon German citizens and engendered a turning point in the German energy strategy. To face citizens' concern, Chancellor Helmut Kohl decided in 1987 to establish the Commission on Preventive Measures to Protect the Earth's Atmosphere. The Commission's first recommendations concluded that a drastic decrease of carbon dioxide and methane emission levels were needed[6]. Moreover, the Commission recommended the adoption of a feed-in tariff for electricity generated by renewables (Zitzer, 2009). As a consequence, the Bundestag designed two instruments in 1988, **the 1,000-Roof Programme for photovoltaic** and t**he 100MW wind programme**.

Another event that strengthened the German Energiewende process was the first United Nations Climate Change Conference (COP 1), held in March 1995 in Berlin. The German Minister of Environment at that moment, Angela Merkel played a determining role in establishing the so-called Berlin Mandate. It constituted the first stone in the international climate policy wall and formed the basis for the negotiations in Kyoto in December 1997. Merkel commitment to the energy-climate matters constituted a permanent feature which has marked her successive mandates since 2005.

Relying on the inheritance of the SPD/Green party coalition, the government of Angela Merkel extended the **Market Incentive Programme** which offered a form of financial support for solar, thermal, solid biomass combustion, small hydro and photovoltaic via direct investment subsidies and soft loans. This mechanism has been effective in the development of heat produced by renewable energy technologies, especially in the period 2009-2012 in which the government allocated 500,000€ each year to their implementation.

In 2007, the grand coalition government (Christian Democrats (jointly CDU and the Bavarian CSU) and the Social Democrats (SPD)) agreed on the so-called 'Meseberg decisions'. These measures drew the German energy model for the future, 'promoted further development of **renewable energy**, a significant **increase in energy efficiency** and the **modernisation of power plants** as the cornerstone of a sustainable, climate-friendly energy supply' (Hübner, 2015). The objective associated with this new paradigm went far beyond the European climate energy package. Indeed, by 2020, German CO_2 emissions should be reduced by 40% while the share of renewables in electricity generation should increase to 30% and the heat generation to 14%. This programme amended in this direction the Energy Act and the Energy Conservation Act, raised the support attributed to the cogeneration programme and strengthened the energy standards for new buildings by 30%.

[6] 30% by 2005 and a decrease of 80% by 2050 compared to 1987 emission levels.

Besides, the first Merkel coalition perpetuated the Erneuerbare-Energien-Gesetz (EEG), former Electricity feed-in tariff, known also as the **Renewable Energy Sources Act**. The amendments of the law undertaken in 2009 enabled to steer optimally the implementation of renewable energy, **decreasing the feed-in tariff for PV installations** while increasing the rate for offshore and on-shore wind as well the ones attributed to biomass and hydro. The law voted in 2009 by a grand coalition fitted perfectly well into the European Union climate energy package voted in December under Merkel's impetus.

Germany introduced also 'a green power privilege' that exempted electricity suppliers using a certain renewable capacity production from the EEG surcharge[7]. This controversial measure appeared as necessary to ensure the stability of the electricity grid and to support competitiveness of traditional energy producers. The green power privilege and the cost of the feed-in tariff programme have been considered as the two main weak points of this energy transition which were subjects of the European Commission investigations (Lang, 2013).

To **reduce the price of the Energiewende** a market premium scheme was adopted in 2012. This package aimed at lowering the dependence of renewable energies on market-driven instruments (reducing the feed-in tariffs schemes) acknowledging some renewables have achieved similar electricity production costs similar to traditional sources. The cost of the Energiewende was only supported by a part of consumers, as energy intensive industries were exempted of any surcharge in their energy bill. The EC addressed this issue, qualifying this mechanism as a state aid and questioning the reduction of the surcharge granted to energy-intensive enterprises.

A new version of the law was issued in 2014, which embraced a very different paradigm in **replacing the classic feed-in tariff system by an auction system** by 2017. The promotion of renewable energy is still the first objective pursued by the law, but it should be achieved in an economic sustainable way.

Generally, it is important to note that German laws respect the principles of the European energy strategy, integrating its objective and philosophy. It is not really the case for the transposition of European Directives. Throughout the decade, German compliance with EU rules has been only average. Over the period, 27 infringements among which formal notices and reasoned opinions regarding the implementation of the electricity market or the renewable energy directive are counted.

As a conclusion, it seems that **the German view of energy has been pretty stable** over the last 25 years with a strong emphasis on **renewable sources** and the desire of a **nuclear phase-out**. Accordingly, the German political and legal system evolved quickly to align with the defended policy. Although this development took a similar path that matches pretty well the European framework, changes in **the German energy model responds much more to national concerns and international events** rather than being driven by a Europeanisation process. For instance, the turn towards renewable energy can be considered as the consequence of national protests right after the Fukushima disaster, generating a sudden U-turn in its energy policy without any consultation with the EU or any of its Member States. This national protectionism brought Germany to court in order to solve its opposition against the European Commission (EC). Since 2009, Germany has been slowly changing its priorities, moving from a mostly technical objective with a massive development of renewables sources to a more economic oriented approach with **a cost reduction of the Energiewende**.

[7] The EEG-surcharge is the mechanism that finances the feed-in tariffs. It is the difference between the wholesale market price for power on the electricity exchange and the higher fixed remuneration rate for renewable energies (Appunn, 2014)

ii. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

Every EU Member State views the Energy Union through the lens of its own national interests. Although Germany was initially a rather silent observer of the process (Szulecki, 2016), the government considered the Energy Union as a project which 'was rather supposed to **translate the Energiewende[8] concept into EU politics** or at least provide a framework that would not stand against the national transformation process' (Szulecki, 2014). Indeed, Germany has made important strategic choices over the last decade and has already launched its energy transition based on renewable sources and a simultaneous phase-out of nuclear power. Germany contributed to the shaping of the Energy Union through a position paper (Germany, 2015) that resonated with the ideology of the Energiewende.

As for many other Member States, **energy security** appears as crucial matter. Nonetheless and contrary to eastern Member States, Germany has raised a much more technical concern than the geopolitical challenge associated with the recent Ukraine-Russia tensions. Although more one third (Amelang, 2016) of its gas comes from Russia, the fear of a sudden stop of supply has never been consistent because of the long history of partnership between the two countries. The German concern on energy security has consisted in guaranteeing a continuous energy supply for all citizens. Accordingly, one top priority of the government in the shaping of the Energy Union has been **the development of a national and regional grid** able to dispatch the energy intelligently. Expand the energy network is a necessity when dealing with the intermittency of renewable sources, designated to be central in the German energy mix. In addition to improve the connexion of wind farms along the North Sea to industrial states like Bavaria or Baden-Württemberg, it would make the Energiewende more cost-efficient through a better cooperation with nearby countries (Gurzu, 2015). This strong regional integration dimension is in line with a process recently started by the German government to find common grounds with neighbouring states on electricity market design (the Pentalateral Energy Forum).

Another aspect was the development of 'a functioning **internal market for electricity and gas** that creates the necessary investment incentives and works at the same time as a backup for and as a consumer of German electricity supply' (Szulecki *et al.*, 2015). According to German representatives (Lada *et al.*, 2015), the **interference between the EU and national governments** on aspects such as legal regulations, subventions or concessions represent an important obstacle to the setup of an energy union. Additionally, representatives of economic/business groups pointed out the complete heterogeneity of the regulatory context among Member States which prevents the opportunity of cross-border investments. Therefore, a first step according to German economic representatives would be to pursue the **market liberalisation** via the complete elimination of historical energy monopoly (ibis).

The German government was **against a joint purchasing process for gas.** Maroš Šefčovič[9], who initially defended the idea, ended up changing his mind after the German government argued that contracts should be negotiated by enterprises. Risking the competitive energy deal of the German industry[10] was not conceivable while energy price is considered as very expensive in the country, especially for individual consumers. The German government, advocating for the **decarbonisation of the EU economy**, would have preferred an EU renewable binding target of more than 30% share of renewables instead of the 27% objective defined in the EU's 2030 Framework for Climate and Energy (Germany, 2015), in line with the Energiewende shift operated. Denouncing in the same time the risk associated with nuclear energy would certainly contribute to maintain public acceptance of the Germany's energy transition, in particular concerning the renewable energy support and its implications on the electricity price.

[8] Expression referring to the German energy transition and its specificities
[9] Vice-President of the European Commission in charge of the Energy Union
[10] German energy companies generally pay a lower price than central eastern Member States

Germany called for "**more coordination of national energy policies**" and a strong "EU governance" advocating for "a specific, robust and reliable governance structure […] It would not satisfy the implementation of the 2030 Council conclusions, if the new Energy Union governance was merely a soft law process" (Germany, 2015). This statement underlines the recognition of energy as a shared competence between the EU and the Members States as well as the potential benefit associated with a deeper Europeanisation.

Germany is considered **the most powerful MS** with nine of its fellow citizens appearing on the list of the 40 most influential people on Energy Union policy (EurActiv, 2016), with institutional leaders such as Angela Merkel (Federal Chancelor) or Mechthild Worsdorfer (DG Energy) and influencers like Beate Raabe (Secretary General of Eurogas) or Jorgo Riss (Director European Unit of Greenpeace). Finally, its influential power stems also from an important lobbying activity from organisations such as the German Renewable Energy Federation (BEE) or industrial companies like RWE.

Germany has also recourse to less EU-focused strategies to strengthen its position and assert its own interests at European level. The federal Republic and eleven neighbour states consigned in June 2015 the Joint Declaration for Regional Cooperation on Security of Electricity Supply in the Framework of the Internal Energy Market. These countries agreed on increasing the liberalisation of the electricity market and the reinforcement of the grid.

The EU highlighted Germany strong performance, especially in three dimensions of the Energy Union: energy security, decarbonisation (even if Germany is one of the most polluter in the EU with 10 tons of CO2/inhabitant/year) and research and innovation (EU, no date). In June 2015, Vice-President Šefčovič during the European Energy Exchange (EEX) in Leipzig praised Germany for its leading role: "Germany's Energiewende agenda plays a pivotal role in Europe's Energy Union strategy, given its geographic location, existing regional cooperation, and state-of-the-art technological innovation".

As a conclusion, Germany already reached an **advanced stage of its energy transition**, ahead of many other Member States. In addition, the country defined a **quite specific strategy** mainly due to the **national nature of the debate** and the parties that contributed. Therefore, one of the main challenges Germany is facing is to ensure that the European frame currently being setup, **the Energy Union, will be in line with the national strategy**. The **strong contribution and influence of the country** through its institutions, its business representatives or via lobbying activities reflects well the current state of play.

EU directive transposition process: example of the Directive 2009/28/EC

According to the EU Scoreboard, Germany's EU transposition implementation deficit was 3% at the end of the 2000s, ranking close to the average rate among EU Member States, although well above the target of 1.5% set by European Councils' (OECD, 2010b). According to Kaeding, the coordination of directives transposition is usually attributed to the Ministry of economy. It applies the principle of Federfuhrung, i.e. one department is assigned the responsibility for the transposition, and meetings are organised bimonthly to discuss the transposition issue. The Ministry monitor the process through a central database. Besides, every German ministry constitutes an EU coordination division specialised in European matters (Kaeding, 2007). It certainly helped in the transposition of the Directive 2009/28/EC on the use of renewable energy use.

Table 4: German transposition of Directive 2009/28/EC on the promotion of the use of renewable energy

Indicators	Outputs
Timing for transposition	22 months (first MS to transpose the Directive).
Issues	Delay
Type of infringement	Formal notice Art. 258 TFEU. Additional formal notice Art. 258 TFEU.

Indicators	Outputs
Participation in the making process	Germany has influenced the supranational agenda in accord with national preferences during its Presidency of the Council of the European Union in 2007. "Germany has made EU energy policy a top priority, especially where doing so has been a way of achieving Germany's goals (Duffield and Westphal, 2011). The country goes beyond the share of renewable energy expected by 2020. Organisations as Bundesverband Erneuerbare Energie ,Bundesverband WindEnergie e.V. affirmed their interests through a multi-level lobbying in the EU.
Level of fitness	Existing similar laws in the country that need to be updated. As mentioned in the National Renewable Energy Action Plan "measures and instruments that are necessary to achieve the national target […] have basically already been established".
Nature of the political discourse	Debate over the financial support given to renewable energy between renewable energy and industrial associations.
Actors involved	German government.
Influencing factors	German government orientations composed by coalition (combination of centre-left, centre-right, right and ecologists) since 1990 always attached importance to European matters. Green Party succeeds in asserting its interests in the national power game. Good fitness of the German regulation: The German Renewable Energy Source Act adopted in April 2000 contains policy which promotes renewable energy via feed-in tariffs and guarantees their priority access to the grid.
Europeanisation mechanism	'Downloading' could define this transition process

The mechanism defining the German transposition of the Directive 2009/28/EC is 'downloading'. The influence of Germany as well as the good fitness of its regulatory system[11] fit perfectly well with the German energy vision. The ambition to go beyond the biding objective fixed by EU indicates the leadership of Germany on the topic. It suggests also **pace-setting a bottom-up Europeanisation** that could serve national policy ambitions given that sustainable development and renewable energies are societal topics in the country.

National policy-making: example of the German Reform of the Atomic Energy Act

The 13th amendment of the Atomic Energy Act voted on 30th June 2011 by the Bundestag, shaped the German nuclear phase out. Endorsing the immediate closing of the 8 oldest nuclear power plants and scheduling the shutdown of the 9 other nuclear reactors in Germany by 2022, this law was the consequence of an astonishing political U-turn after the Fukushima disaster.

Table 5: Analysis of the German Reform of the Atomic Energy Act in 2011 and the political discourse opening the Berlin Energy transition dialogue

Indicators	Outputs
Origin of the law	Long standing nuclear opposition in the country Consequence of Fukushima disaster Political opportunity in the perspective of the legislative election at that time
Fitness with EU energy framework	Analysis of the nuclear phase out in comparison with the CSS framework: Nuclear phase out had a dramatic consequences on energy producers such as RWE and E.ON but contributed slightly to the increase of electricity price (one the highest in Europe). Researchers from ZEW estimated that the phase out led to an " increase of electricity price on the German-Austrian market by an average of seven per cent, or 3.30 euros, per megawatt hour on the European Energy Exchange in the two years following

[11] Different versions of the Renewable Energy Sources Act promote renewable energies since 2000

Indicators	Outputs
	the Fukushima incident" The substitution of nuclear by coal and renewable energy did not perturb the electricity gird Increase of GHG emissions due to the recourse of coal
Signs of Europeanisation	The European dimension of the German decision had been almost absent from the national debate especially on nuclear energy.
Interaction with other MS/ EU	The nuclear phase out was a solitary manoeuvre from Germany
Name of the discourse	Discourse over the Energy transition for a Green Growth.
Context of the discourse	Conflict between Russia and Ukraine with consequence over gas delivery Slowdown of the global economy. COP 18 reached an agreement to extend the life of the Kyoto Protocol, which had been due to expire at the end of 2012, until 2020.
Signs of Europeanisation in the discourse	Purely national argumentation in the discourse: No explicit references to European institutions and other Member States. It is necessary to read between lines to detect rare references of European frameworks like CCS and the Energy Union. Promote sustainability and energy security to guarantee the growth of the economy, proposition that matches perfectly well with CSS framework, is at the heart of the discourse but always considered under a French dimension

Although the discourse pronounced by Foreign Minister Frank Walter Steinmeier includes signs of Europeanisation, it corresponds much more to an attempt of **pace-setting bottom-up** "internationalisation" of the Energiewende as a standard for the energy transition in the world. It says a lot on the ambition of the German government and the method, leading by example and cooperation, used by its government to assert its interests. This ambition contrasts with the European dimension of the Energiewende for cooperation which remains challenging at the regional level (Fabra *et al.*, 2015). According to Maisonneuve (2014) and Fischer (2009) Germany has decided to launch the revolution in its energy sector without consulting its neighbours, considering the EU a way to assert its interests.

iii. An overview of the energy system evolution 2005-2016

This section aims at assessing whether Germany is entering a low carbon and sustainable transition through an analysis of the evolution of a set of indicators in line with the 5 pillars of the Energy Union.

Market integration

The German interconnection capacity has evolved differently depending on the type of energy– electricity or gas. The country achieved its **10% electricity interconnection** target in 2014, 6 years before the deadline fixed by the EC. Even if it already achieved the EU objective for 2020, this level of interconnection **could be insufficient** to face the challenges resulting from the German energy transition. **Renewables intermittency** requires flexible grids, allowing two-way flows, which is not yet the case - German grid defaulted at different levels in the last years.

Further grid developments are demanded to connect the windy North-Eastern Germany with the Southern part of the country, where most industries are, in order to avoid more grid problems. German grid problems have resulted in international consequences, especially on Czech and Polish grids. On several occasions, the energy surplus generated by the Northern wind farms generated **overloading problems** on their transmissions systems. To avoid this type of problems and ensure a successful deployment of the Energiewende, the federal government undertook a **deep grid expansion plan**, implementing more than 50

grid expansion projects at national and regional levels. With the progress of this plan, Germany contributed to the merger of the **Nordic Market** (Norway, Sweden, Finland and Denmark) and the **Central West Europe marke**t, being a **cornerstone** through its participation in the **European Market Coupling Company** (Germany and Nordic Region) in 2009. Regarding gas, a working document published by the EC stated in 2015 that 'Germany benefits from an **interconnected network** as well as a high degree of **diversification of supply routes** and sources' (European Commission, 2015b). Germany has been working with the EC to implement 'Projects of Common Interests' (PCI) with the aim to enable **gas reverse flow** - 9 PCI gas interconnections are in process of implementation in the country since 2015. Besides, investment in gas infrastructure should increase by a total of 1.9 billion euros between 2014 and 2019 in order to meet the targets of 260 megawatts additional compressor capacity and 423 km grid expansion until 2019, according to the Network Development Plan Gas 2014.

Market liberalisation

The German market liberalisation has **evolved in compliance with the EU vision** offering consumers a greater choice between energy retailers. For both the electricity and gas markets, the Herfindalh-Hirschman Index indicates a **decrease in the market concentration** from 2005 and 2014. This evolution is the result of **new entrants** in both the electric and gas sectors, even if the energy market is **still dominated** by large companies, i.e. E.ON, RWE and Vattenfall. Furthermore, last years have witnessed the **large development of energy cooperatives** in Germany - one of the EU pioneer countries on this matter. The development of these energy cooperatives, which produce energy from renewable energies locally, has experienced a boom over the last 15 years progressing from 66 entities in 2001 to more than 1000 in 2015.

Energy security

The German economy relies more on energy imports that in the past since the indicator increases from 60.4% in 2005 to 61.4% in 2014, which is particularly important in a country with a large number of **energy intensive industries**. German energy security has been seriously impacted by the **nuclear phase-out decision** and the **radical transformation associated to the Energiewende**. Although the country has a certain amount of fossil resources, its deposits are limited. The German energy supply economy relies on strategic partnerships, especially with Russia, which furnished important supply of coal (23% of imports in 2014), gas (39% of imports in 2013) and oil (31.4 Mt in 2014) (Amelang, 2016). Finally, the complete implementation of the Energiewende constitutes a real game-changer. The increase of its renewable energy share and an ambitious energy efficiency policy should reduce drastically German dependency.

Low carbon and efficient energy system

Despite the shift of paradigm operated through the Energiewende, Germany was by far the **largest GHG emitters** in Europe with 969.1MtCO_{2eq} released in 2014. This figure represented around 22% of the total EU GHG (Eurostat, 2016b). The **industrial nature** of the German economy – with energy and carbon intensive industries could be behind these numbers – **hinder the inversion of this trend**. Indeed, between 2005 and 2013, the carbon intensity dropped only by 45.1 points progressing from 369.1 tCO_2/M€ to 324 tCO_2/M€, which can be considered as low compared to the other countries studied in this analysis. To reverse this trend, Germany set up ambitious energy efficiency policies. For instance, the ODEX calculated in 2013 that Germany achieved 8.7% energy efficiency gains since 2005 and the efforts to reduce the energy intensity of the economy is on a good track – the gross inland consumption of energy divided by GDP progressed from 140.9 to 114.7 kg_{oe}/1000€. The focus on renewable energy at policy level has resulted in an increase of the renewable energy share in the final gross energy consumption varying from 6.7% in 2005 to 14.3 in 2014.

R&D

Compared to all the countries studied in this analysis, Germany is the one with a largest increase of the government budget dedicated to research in the energy topic. It is equivalent to 16.4€/per inhabitant in 2014 while it was only around 6.2€/per habitant in 2006. Innovation in the renewable energy sector is a

high priority for both government and corporate investments. The 6th Energy Research Programme of the Federal Government focuses on developing an 'environmentally-friendly, reliable and affordable energy supply'. From 2013 to 2016, the German government has been providing about €3.5 billion in energy research funding to promote research and development of modern energy technology. All the previous analysis confirmed that Germany has developed energy policies **in compliance with the European Commission's vision,** even if the effect into its system is progressive. Germany is still the **largest polluter in the EU, and** has the one of the **most expensive electricity pricing structures,** as well as a **high energy dependency**. The Energiewende is supposed to reverse these points.

iv. Characterisation of the Europeanisation process

Germany has been an active player in the Europeanisation processes (see Figure 5). Its economic power and its political leading position in the EU confer the country an exceptional position to orientate European entities decisions. The high capacity of shaping of the Energy Union by German representatives (EurActiv, 2016) or its influence in the promotion of renewable energies – Germany has developed different Renewable Energy Acts since 2000 - illustrates perfectly well this situation. The country possesses a strong influential power whether it is reflected in the European power game or via bottom-up Europeanisation. Indeed, the term Germanisation has been used in literature as the spread of German energy policies at extra national level, which could elevate the tension on the energy topic at EU level. The country integrates, sometimes reluctantly, all the dimensions of the European energy strategy. However, Europeanisation is not the most powerful driver of the transformation of the German energy system, as the German interest prevails. The two main pillars of the German energy transition, the nuclear phase out and the focus on renewable energy, were decided without considering Europe or other MS. It is also worthy to point out the citizen involvement in the German energy system. They are prosumers - rather than only consumers - active through the energy cooperatives.

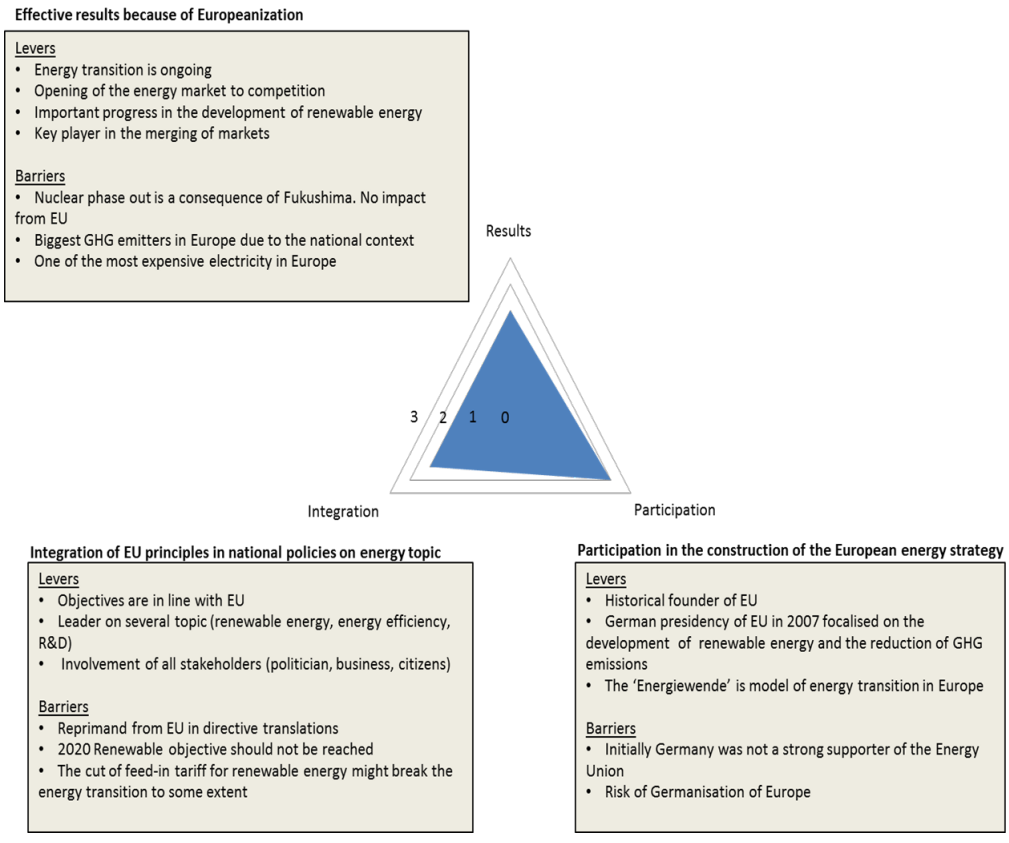

Figure 5: Characteristics of Europeanisation of the German energy system

3.3 Ireland

i. Evolution of the policy and legal system (2005-2016)

The Irish policy making process itself has traditionally been **very poor** with an overt **focus on administration** and 'significantly **less attention given to economic and social factors**' (Ruane 2012: 120). The trajectory of the policy process in Ireland is usually one where the government sets out a legislative agenda, the civil service develops a plan for implementation, interest groups comment and lobby, then legislation is put before the Dáil (Irish Parliament), where it is (not always, and, often minimally) debated, and sometimes amended before being passed into law.

Another factor weakening the policy process in Ireland is the fact that government ministers do not have **specialist skills in specific policy areas** – as is more typical in other Member States; and, most significantly, the **imbalance of power between the Executive and the Legislature**, and the "whip" system, ensures that the government prevails over the legislature in getting its legislation passed. This results in the common scenario whereby "government **proposals for legislation** do not get **specialised attention**, **criticism**, and **amendment**. It also means that the parliament cannot easily hold the government to account" (Hardiman 2013:2). Despite promises of significant political reform from all the main parties in the most recent general election (2016), and indeed in the previous election (2011), there has been **no evidence of any real appetite for change** amongst the political classes in Ireland's political system.

The lack of expertise amongst government ministers is all too often reflected in the lack of expertise within the civil service due to the culture within the service of recruiting generalists, rather than specialists – which undoubtedly contributes to Ireland's poor track record in transposing EU law. Although, there has been some opening up of the civil service to directly recruiting qualified candidates with expertise in specific policy areas, this has been very minimal and the service remains entrenched in its **out-dated management practices**.

While it is true that the Irish energy system has seen significant growth in renewable energy during this period, there remains a significant **overdependence on imported fossil fuels**. It can be plausibly argued that a greater impact on the energy system has been the **economic recession** brought on by the 2008 banking crisis – sharply reducing energy consumption and the production of GHG – and the subsequent drying up of liquidity for renewable energy start-ups due the fall in the price of oil on the international markets. Unfortunately, the initial reduction in consumption and GHG emissions brought about by the recession has since been reversed with the economic recovery that has taken place.

On the positive side, 2007 saw the **establishment of the Single Electricity Market (SEM)**, and construction was finished on the EWIC in 2012. By the end of 2012 Ireland had achieved 19.6% of electricity generation from renewable sources, 5.2% in renewable heat, and 2.3% in renewable transport (Howley *et al.*, 2014). The National Energy Efficiency Action Plan (NEEAP) was established in 2009, with a second NEEAP submitted in 2013. Under the Third Energy Package directive the operation of the electricity transmission network was unbundled from its ownership. Two renewable energy feed in tariff (REFIT) schemes were adopted and the national renewable energy action plan (NREAP) was produced setting out the roadmap to reach the EU renewable targets for electricity, transport and heating. (DCENR, 2015) REFIT support (REFIT III) was extended to incentivise the generation of electricity from bioenergy sources composed of high-efficiency combined heat and power (using the thermo-chemical conversion of solid biomass and anaerobic digestion) biomass combustion and biomass co-firing.

Looking forwards, the government has set out an ambitious agenda in its White Paper, "**Ireland's Transition to a Low Carbon Energy Future 2015 – 2030**" in recognition of the requirement for action demanded by the binding targets for both renewables as well as the reduction in GHG for 2020 and beyond to 2050. This Paper acknowledges that a "radical transformation of Ireland's energy system is required to meet climate policy objectives." (DCENR, 2015: 7)

While the government overtly signals a positive perspective on the requirement to develop the energy system in order to meet the targets set by the EU, this is not to say that the State has wholeheartedly embrace all aspects of the Europeanisation process, and it has been slow – sometimes very slow – to transpose directives into legislation and to provide the structures to implement them. The establishment of the independent energy regulator, and it subsequent strengthening, can be seen as an example of Europeanisation where the EU both set the agenda, and dictated the remit of the agency; as well as in the liberalisation of the energy market in Ireland. (Brown and Scott, 2010) While the government, eventually in most cases, implements the policies and mechanisms required by European directives, the political and bureaucratic means can seem lacking.

In conclusion, the **political and legal system has not changed significantly**, more shoring up existing legislation since it was **already in line with the European energy objectives**. **The top-down Europeanisation** could be considered as a **driving factor** especially in the political narratives and the reasoning the Government uses to justify its actions, but issues around security of supply and pricing are key factors.

ii. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

The Irish Government frames its policies towards the Energy Union within the three pillars of security, sustainability, and competiveness established through the CSS framework. These are particularly important for Ireland given its reliance on imported energy sources. Politically, this position has been further cemented into its approach to the political settlement in Northern Ireland and the all-island dimensions to the Good Friday Agreement. The recent Brexit decision in the UK will likely have a profound influence on the development of government policy in to the future, the extent of which will largely depend on the exit negotiations that the UK government agrees with the EU over the coming months.

Ireland's position within the trading bloc, as a small highly-globalised economy, has ensured that it understands the need for solidarity advocated by the EU, and it espouses the core EU ideas on energy, including a **single energy market, liberalisation, security of supply, competitiveness**, and **sustainability** – all of which are referenced in the numerous policy documents it has published to date.

In its latest White Paper, "Ireland's Transition to a Low Carbon Energy Future 2015 – 2030", the government framed its energy objectives within "the context of the significant role played by European institutions in determining energy policy, markets, and regulation", placing "great value on our relationship with Northern Ireland [continuing] our close cooperation on a range of energy matters including the regulation of the all-island **single electricity market (SEM)** [in which Northern Ireland and Ireland are equal partners], the development of the Integrated-Single Electricity Market (I-SEM), energy transmission, and the proposed North-South transmission line" (DCENR, 2015: 7). Wider international climate change objectives and agreements, as well as Irish social, economic and employment priorities were also alluded to.

Ireland has been a member of the EU since 1973. It has repeatedly positioned itself within the heart of European policy making, and membership of the EU has radically shaped its socio-political and economic structures since then. Ireland has a Permanent Representative (Perm Rep) to the European Union, and it is the state's largest overseas mission, with staff from all government departments. Following the imperative model of representation, officials act under the guidance of the national government with individual autonomy and discretion largely restricted to national policy goals.

In terms of "influence" with regard to policy, the Energy Union is dominated by British and German "influencers", with 7 and 9 respectively. Ireland has **two influential contributors** to EU Energy Union policy.

One is an influencer, Adrian Joyce, who is General Secretary of the European Alliance of Companies for Energy Efficiency in Buildings (EuroACE). The other is an "institutional" influencer, Marie Donnelly, who is Director (Dir C) DG Energy in the EC. Ireland's Permanent Representative to the EU lobbies on behalf of the state working with the other 27 countries of the Council of the EU, the Commission and the Council Secretariat. However, it could be argued that Ireland's real influence lies in its role as a fully supportive member of the EU, and so, given that support, it did not place any obstacles in path of the Energy Union. Overall, Ireland has positively engaged with the various proposals for the Energy Union. Its influence can be detected in the section of the Council Conclusions that emphasises the need for accelerating the building of key infrastructure projects and **interconnectors** in "**peripheral regions**". For Ireland, as a peripheral country, this was an important strategic development.

As a small, highly-globalised economy Ireland has taken the strategic position of **aligning its energy policies to those of the EU**. Therefore, its engagement with the development of the Energy Union has been one of **support** and **consolidation** in both its content and its implementation. The above notwithstanding, the main factor driving Ireland's participation in the Energy Union is its overdependence on imported energy sources, particularly for key sectors of the economy, including electricity and transport.

EU directive transposition process: example of the Directive 2009/72/EC

According to the environmental NGO, Friends of the Irish Environment (FIE, 2016), Ireland has the third worst record in the EU for passing European directives into national law. Only Italy and Portugal perform worse in this regard. In 2015 there were 42 infringement cases open against Ireland by the European Commission with 32 of these cases relating to what the Commission considered poorly applied applications of EU law, while the rest concerned the delayed or late transposition of particular directives. Although attitudes are changing, albeit slowly according to Convery (2013), the transposition of the Directive 2009/72/EC remains challenging.

Table 6: Irish transposition of Directive 2009/72/EC on the internal market in electricity

Indicators	Outputs
Timing	The transposition is not finalised
Issues	The Irish civil service suffers from outdated managerial practices: Lack of communication with the European Commission over the transposing process (Scannell, 2013). Partial transposition of the Directive. Delay in the transposition.
Type of infringement	Formal notice Art. 258 TFEU. Reasoned opinion Art. 258 TFEU. Additional reasoned opinion Art. 258 TFEU. Referral to Court Art. 258 TFEU - 260(3) TFEU. Withdrawal.
Participation in the making process	No information
Level of fitness	While transposing Directive 2009/72/EC into Irish law entailed some new elements of legislation, much of the process just required updating or amending existing legislation.
Nature of the political discourse	The national political discourse around Directive 2009/72/EC was somewhat muted. Generally speaking, the reception around this Directive was seen as a largely positive development with the government presenting its efforts as invariably pro-EU with its national energy goals very much linked to those of the EU.

Indicators	Outputs
Actors involved	Department of Communications, Energy and Natural Resources. Department of the Environment, Community and Local Government. Department of Transport. The Sustainable Energy Authority of Ireland.
Influencing factors	Success of the Good Friday Agreement (commitment to establish an all-island electricity and gas networks) and the current political stability in Northern Ireland. Good fitness of the Irish regulation but the cross-departmental cooperation was not enough to carry out the transposition. Traditional 'command and control' regulatory structures such as censorship, licencing and authorisations for services etc. have been superseded in some sectors by economic instruments (Brown and Scott, 2010), and there has been divestment of state-ownership in strategic sectors of the economy to private enterprise and "semi-state companies". It gives a room for lobby of different actors.
Europeanisation mechanism	'Accommodation' is the main Europeanisation mechanism at stake even if 'inertia' should also be considered to some extent.

Overall, it can be said that the mechanism of this Europeanisation process was primarily one of accommodation — given the Directive 2009/72/EC was a largely in keeping with national policy on electricity and therefore compatible with much of the national structures already in place. There was also an element of inertia in the process given the political will to bring about the required transposition into national law did not materialise to the level needed to have it completed within the timeframe set down by the Commission.

Given the criticisms that have been levelled at the state's performance in transposing EU laws in the past, and the number of pending cases in the EU's Court of Justice, it is clear that there are significant weaknesses in the Irish system. Ireland still falls behind many other OECD countries in terms of its capacity to provide high quality, effective regulation (OECD, 2001). The lack of efficiency of the national bureaucracy has been a factor in the incomplete transposition of Directive/72/EC and the subsequent case taken against the government in the EU's Court of the Justice. The rather centralised institutional structures in place clearly influenced the transposition process and reform is still needed if current trends – increased legal actions being taken by the European Commission due to late or incomplete transpositions – are to be reversed.

National policy-making: example of the Irish Offshore Renewable Energy Development Plan

The Offshore Renewable Energy Development Plan (OREDP) provides a framework for the sustainable development of offshore renewable energy and for coordinating and implementing policy across the three key areas of energy, environment, and the economy. It sets out the key principles and policy actions that are required to develop the sector and to support it to reach economic viability.

Table 7: Analysis of the Irish Offshore Renewable Energy Development Plan and associated political discourse

Indicators	Outputs
Origin of the law	OREDP results from the development of the National Renewable Energy Action Plan resulting from 2009/28/EC Directive.
Fitness with EU energy framework	OREDP also envisions offshore renewable energy as making a significant contribution to delivering on EU energy policy during the period 2030–2050. It contributes to the future provision of the secure and sustainable supply of energy (two of the five pillars of the Energy Union project) to domestic and commercial energy consumers, as well as its potential for export to other European countries.

Indicators	Outputs
Signs of Europeanisation	The OREDP in its introduction explicitly aligns its objectives with those of EU energy policy 'reflecting the common challenges faced by Ireland, and our partners in Europe, in decarbonizing our energy systems and creating a sustainable and competitive EU internal market for energy'. It also positively references the EU targets for renewable energy, decarbonisation, and security of energy supply throughout the document and it is optimistic about developing offshore energy with a view to contributing both to Ireland's energy self-sufficiency, as well as Ireland's potential participation in the North West European energy market. It exists strong signs of Europeanisation in the policy making process of the OREDP: integration of a Strategic Environmental Assessment (SEA) on a range of development scenarios that were carried out in fulfilment of MS legal obligations under Directive 2001/42/EC. As required by the EU Habitats Directive, under S.I. 94/1997 – European Communities (Natural Habitats) Regulations (amended), an Appropriate Assessment of the potential impact of the OREDP on Natura 2000 sites was presented in a Natura Impact Statement and the results were also included in the OREDP. The OREDP includes a section on an on-going research project—Irish-Scottish Links on Energy Study in order to developing and increasing the generation of renewable energy, and developing interconnected grid networks—closely align with those of the EU.
Interaction with other MS/ EU	No information
Name of the discourse	Legal text presenting the Offshore Renewable Energy Development Plan.
Context of the discourse	In 2013, Ireland was out of track to reach its renewable energy and GHG emission reduction objectives defined in the EU climate-energy package. Ireland had the second largest drop in energy consumption in the EU. Irish constitutional referendums.
Signs of Europeanisation in the discourse	The document contains numerous references to: The Renewable Energy Directive (2009/28/EC). The Strategic Environmental Assessment Directive (2001/42/EC). The Habitats Directive (Council Directive 92/43/EEC). The Environmental Impact Assessment Directive (2011/92/EU). The Marine Strategy Directive (2008/56/EC). The plan also expresses the state's intention to 'fully participate in the wider European energy market'. Other MS are mentioned as partners, especially UK, Northern Ireland and Scotland get particular mentions due to closer cooperation relationship

The OREDP explicitly aligns its objectives with those of EU energy policy "reflecting the common challenges faced by Ireland, and our partners in Europe, in decarbonising our energy systems and creating a sustainable and competitive EU internal market for energy". If the OREDP was subject to bottom-up Europeanisation, this analysis suggests that this process takes forms under a **fence-sitting strategy** due to the Irish attitude towards the European Institutions and its level of influence.

iii. An overview of the energy system evolution 2005-2016

The evolution of the national energy system in Ireland, albeit that this evolution is somewhat uneven, is very much linked to Europeanisation processes. As has been discussed in other sections of this document, the Irish state has strongly linked its own energy strategies to that of the Energy Union and the European Union more generally.

Market integration

While the level remains well below the overall EU target, Ireland has made some, limited, progress, on the integration of its energy markets. In 2007 the SEM for the purchase and sale of wholesale electricity on the island of Ireland was established between the transmission system operator (TSOs) of the Republic of Ireland and Northern Ireland. The interconnection level for electricity has seen a steady increase over the years from 3% in 2011 to 7% in 2013, rising to 9% in 2014—although this is slightly below the 2020 European target of 10%.

Ireland has electricity and gas interconnectors with the UK only, although, there has been progress on the possibility of building an interconnector with France. At present, there is an East-West sub-sea electricity interconnector between the Republic of Ireland and Wales; and a North-South electricity interconnector between Northern Ireland and the Republic of Ireland, as well as two smaller "stand-by" connectors. There are two sub-sea gas interconnectors running between the Republic of Ireland and Scotland; and there is also a South-North gas pipeline creating an all-island gas transmission network linking the grids between the two jurisdictions.

Ireland remains almost entirely dependent on the UK for its gas supplies, although the production of gas from the Corrib Gas Field may reduce this dependency — granted that there is absolutely no guarantee of this due to the peculiarities of Ireland's licencing regime. Advances have been made with regard to market coupling, and regional cooperation. Early in 2014, Ireland and the UK were coupled with the Central Western Europe and Nordic regions forming the North Western Europe market. Ireland is also a member of three regional groups established in 2014 under the TEN–E Regulation – Northern Seas Offshore Grid, North South Electricity Interconnections in Western Europe, and North South Gas Interconnections in Western Europe. Brexit may have a significant impact on the market integration of Ireland's energy system.

Market liberalisation

There has been significant progress made in the liberalisation of Ireland's energy markets. The generation of electricity has moved from being very highly concentrated in 2005 (HHI above 5000) to moderately concentrated (HHI 1150). The number of main power-generation companies has increased by 25% – from 4 to 5 companies. The market share of the largest power-generation company has decreased from 71% to 55%. However, there has been a small reduction in the number of electricity retailers from 9 in 2005, to 6 in 2014; while the number of main retailers has reduced from 5 to 4.

Supports for the renewable energy sector have been introduced. The Renewable Energy Feed in Tariff (REFIT) is a national price structure support scheme. REFIT guarantees a fixed price for various RES electricity producers.

With regard to gas, the number of companies importing gas into Ireland has increased from 8 in 2005 to 13 in 2014, with the main importers increasing from 4 to 5 over the same time period. However the market share of the largest importer increased from 28% in 2007 to 42% in 2014. The number of retailers has substantially increased, between 2005 and 2014 the number of gas retailers doubled from 4 to 8, and the number of main gas retailers increased from 1 to 6.

Energy security

Ireland has a very high net energy import dependency. While this has reduced somewhat – from 89.6% in 2005 to 85.3% in 2014 – it remains amongst the highest in the EU. There is a particular dependence on gas imports from the UK (the only MS that Ireland has a gas interconnection with), and while it might be expected that the development of gas production in the Corrib Gas Field will reduce this dependency this cannot be guaranteed due to the Irish government's licencing conditions. Most unusually, in the European context, the Irish government required absolutely no guarantee of supply to Ireland from the developers of this gas field located in Irish waters.

Low carbon and efficient energy system

Ireland is becoming more efficient with energy efficiency gains increasing from 10.3% in 2005 to 24.4% in 2013. CO2 GDP intensity has reduced from 318.4 to 227.3 per tonne of CO2 over the same time period. Furthermore, the level of increase in renewable energy is above the EU average – from 2.9% to 8.6% of final gross energy consumption between 2005 and 2014. This has resulted in a saving of -2.6% on Gross Inland Energy Consumption over the time period 2005–2012. It should be noted that while wind energy is positioned as the main renewable energy source to meet Irish energy policy goals going forward, the development of wind energy in Ireland has proven to be controversial in the communities where wind farms have been proposed, and built. The high-profile wind energy lobby (the Irish Wind Energy Association, or IWEA) has strong links to those in key policy making circles at the national level, and their agenda has dominated the policy direction and development strategies on wind energy, with the result that communities have been largely excluded from the decision-making process concerning the location of turbines, as well as any profit-making from commercial wind farms. This has resulted in wind turbines being imposed on communities with little or no benefit to those communities themselves. Given the deficit of local democracy in the absence of genuine community consultation regarding the size of, and location of both turbines and wind farms the majority of substantive input from communities has been the formation of community anti-wind turbine action groups, campaigning and objecting to the granting of planning permission for wind farms. Unlike the experience in the rest of Europe where community owned, or part owned, wind farms are the norm, there is only one community owned wind farm in Ireland.

R&D

With regard to research and development, spending on energy research is traditionally very low in Ireland, and well below the EU average. Moreover, this situation has deteriorated significantly between 2005 and 2014 as the Irish Government has significantly reduced its spending on energy R&D from €3.7 euro per inhabitant in 2006 to €1.2 in 2014.

The evolution of the Irish energy system reflects the development of EU policy on energy which has been transposed and integrated into Irish policy and legislation. The development of renewable energy policies per se, the development of the RES, the reduction of carbon production from electricity generation – and in particular the increased generation of electricity from gas and wind, the development of interconnectors, and market liberalisation all reflect the Europeanisation of the Irish energy system.

There is still only limited integration between Ireland and other EU energy systems. The fact that Ireland is an island has obvious implications for energy integration, hindering its development. At present, interconnection is limited to the UK, although the Celtic Interconnector between Ireland and France is being progressed.

Ireland is highly unlikely to meet its 2020 EU greenhouse gas emission targets across the non-ETS sector, including agriculture, transport, residential, commercial, non-energy intensive industry and waste. Moreover, current and planned policies and measures – even if fully implemented – are insufficient to meet the target (EPA, 2016).

iv. Characterisation of the Europeanisation process

Ireland is involved in the Europeanisation mechanism process though its level of influence is probably lower compared to the other MS analysed in this study. The high energy dependence associated with the peripheral location of the country but especially the economic and political crisis that occurred between 2008 and 2011 reduced its room for manoeuvre. Ireland was on an energy and economical drip from EU even if the county has since initiated a regrowth and an energy transition. It contributes to depict Ireland as a follower which undergoes a **top-down Europeanisation process**. Its energy policy is inextricably tied to the European energy strategy even if it capacity to transpose Directives correctly remains a challenge so far. The United Kingdom's proposed withdrawal from the European Union (informally referred to as Brexit)

could be a real game changer for Ireland which could take the opportunity to assert itself as a European regional leader.

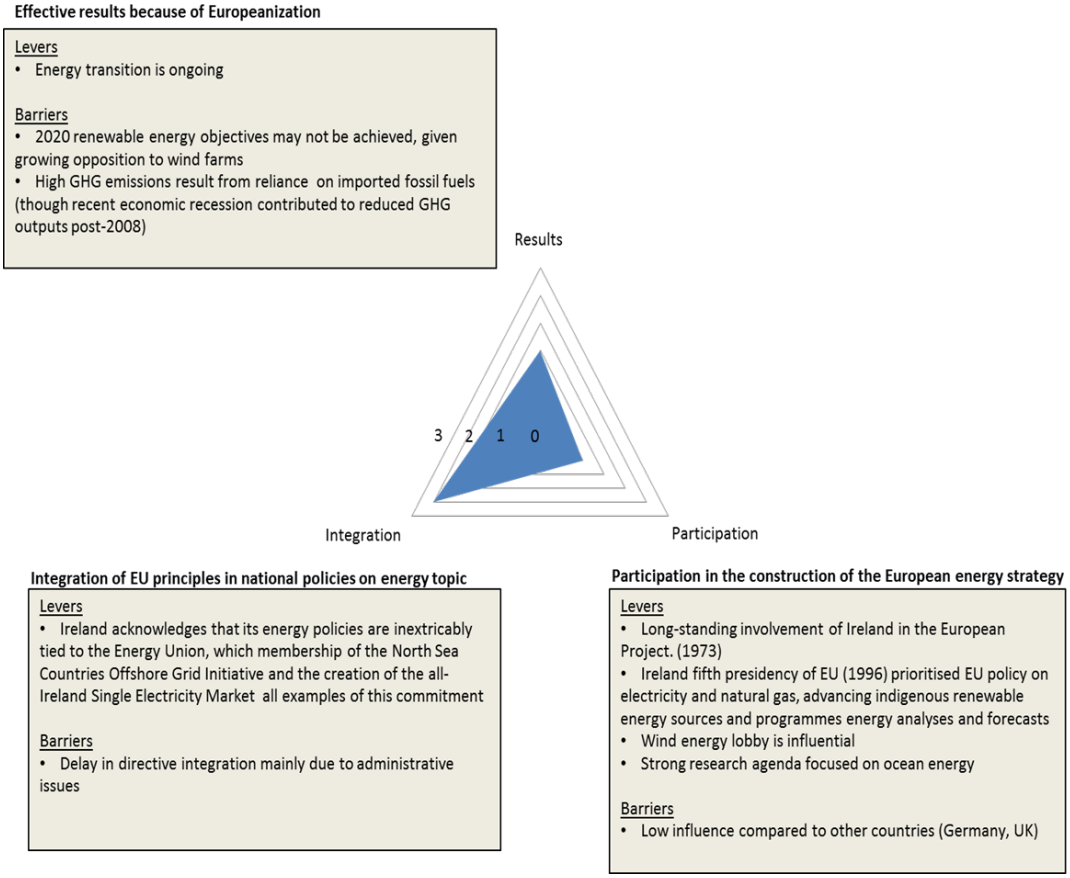

Figure 6: Characteristics of Europeanisation of the Irish energy system

3.4 Italy

i. Evolution of the policy and legal system (2005-2016)

The National Energy Strategy (NES), issued in 2005, is one of the main policy documents shaping the Italian policy and legal system. Among the several goals described in the NES, the creation of an **internal unique market of gas**, which must be competitive and integrated in respect to the other EU countries, appears as a strong challenge for the Italian energy system. In fact, even though the privatisation process in the energy sector has been in place for a long time, the electricity market has progressed faster than the gas market, which still needs **deep interventions** in order to improve **market competitiveness**.

To this purpose, the NES recommended a possible lowering of electricity prices, which was not fully reflected in the energy system. Indeed, from 2005 to 2016, the **price of electricity in Italy increased** from 0.1553€/kWh to 0.1791€/kWh, despite the collapse in commodity prices (Autorita Energia, 2016). This increase in final consumption prices is mainly explained by two components of the electricity price: the cost of system charges – these have increased from 0.16€/kWh in 2005 to 0.46€/kWh in 2016 – and to a lower extent, the increase in energy taxation.

Although Italy seems to integrate most of the different dimensions of the European energy strategy, the period between 2005 and 2016 provide some examples illustrating hurdles in the process. This period witnessed at least **60 infringements regarding energy directives' transpositions**, among which many formal notices, additional notices, reasoned opinions and referrals to Court. Some of the Directives concerned are emblematic:

Directive 2009/72/EC on the opening of the electricity market

- **Directive 2010/21/EU on the Energy Performance of Buildings**
- **Directive 2009/28/EC on the promotion of the use of energy from renewable sources**

To bring a solution to this issue and reduce the cost associated with fines the Government introduced a series of measures – including databases to monitor documents coming from EU institutions – under Law 234 of 2012, which radically changed the way laws were implemented in Italy, European Delegation Bills, etc. (see EU transposition process in the section analysis of policy making processes for further information). These measures have reduced the number of energy infringements over the period. Indeed, while the number of infringements was around 16 in 2006, it reached only 4 in 2015.

Italy is a compound country where different channels of power coexist between national and regional authorities. The complex negotiations and search for consensus at EU level are similar to the ones occurring in Italy between national and regional authorities (Schmidt, 2004). Therefore, Europeanisation is not experienced as a loss of political power in Italy, but a game of power. Additionally, the Italian political system has modified more of its practices than its structures. Europeanisation has been the outcome of changes that happened at the actor's level, not at the institutional one. EU compounding reinforces the assumptions underlying the increasingly regionalised practices that promote the dispersion of power and authority (Giuliani, 2002).

i. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

"**The Italian government supports the development and implementation of the Energy Union**" stated former Minister for Economic Development, Federica Guidi, in a meeting with the Vice-President of the European Commission in charge of the Energy Union, Maroš Šefčovič, held in Rome on 3rd December 2015. On that occasion, Federica Guidi assured Šefčovič of Italy's **full commitment and cooperation** for the definition and the implementation of a governance model of the Energy Union necessary to achieve the ambitious goals of the European Union (EU) by 2030. On the same day, Šefčovič held a hearing at Senato della Repubblica- one of the two chambers of the Italian Parliament in which he **stated the active role played by Italy** in the **debate over the Energy Union. He** stressed that Italy had strongly supported this strategy both in the **outlining phase and in the implementation phase**, especially its **international dimension**. The external dimension of the Energy Union is **of particular interest to Italy**, as stressed in 'Italy's National Energy Strategy: for a more competitive and sustainable energy' launched in 2013. This document, founded on Decree 93/2011 (transposing Directive 2009/73/EC) suggests that from the point of view of security of supply, it would be useful to increase the diversification of sources of supply in Italy and consequently to the rest of the EU. The National Energy Strategy (NES) also stresses that with "the North Stream, Southern Corridor[12] and South Stream projects, imports from North Africa, together with regasification terminals, will play a complementary role in consolidating the continent's energy security". **Italy participated in the discussions at EU level, particularly on this topic, as it is a key aspect of its energy strategy**.

Furthermore, the Italian Parliament has expressed a **positive opinion on the Energy Union Package**. In particular, on 4th June 2015 the Italian Senate adopted a resolution in favour of the Package. The document also stresses the necessity of: 1) **simpler rules for the access to financing** in the context of the projects of common interest (**PCI**) – especially EU infrastructure projects that help create an integrated EU energy

[12] The Southern Corridor is a planned infrastructure project aimed at improving the security and diversity of the EU's energy supply by bringing natural gas from the Caspian Sea region to Europe. Stretching over 3,500 kilometres and crossing seven countries, it would involve more than a dozen major energy companies. It also comprises several separate energy projects, representing a total investment of approximately US$45 billion.

market – 2) the **revision of the Emission Trading System** (ETS), and 3) the **relevance of energy supply from the Eastern Mediterranean, the Caspian Sea, and North Africa**. The Italian Congress, similarly to the Senate, expressed its positive opinion on the Package through the adoption of a final document on 8th July 2015. Among the issues of most relevance, the Congress emphasised the necessity of establishing **functioning interconnections among the EU Member States** in the framework of clear and common rules. In this context, it **explicitly referred to the creation of a gas hub** in **Southern Europe** in which Italy could play a key role. Other issues concerned the necessity of increasing research in the **renewable energy sector** and for greater investments in **smart grids**. Finally, in the context of international cooperation, the document contains the request for initiating a partnership with North African countries aiming not only to guarantee the access to energy resources but also to support development of these states (Italian Senate, 2015).

However, in spite of Italy's support to the Energy Union at European Parliament (EP) level the political **debate at national level was divided**. For instance, Partito Democratico (PD) and Forza Italia (FI) were in favour of the Energy Union, while Lega Nord (LNP) and Movimento 5 Stelle (M5S) were against it[13]. The main reason why PD and FI were in **favour** of the resolution was that in their view, the Energy Union text ensured the necessary instruments to **achieve energy security including diversification of supply and energy efficiency**. It also provides the measures to establish an **integrated and competitive energy market**. On the other hand, LNP and M5S voted **against** the resolution for different reasons. According to the LNP, the text aims to strongly **limit the sovereignty of states in the field of energy** and **did not take the different needs of territories into account**. According to M5S, the text **did not protect consumers**, **nor limit the research on nuclear energy**, and was quite controversial since it was the result of a compromise over conflicting positions (European Parliament, 2015).

In the private sphere, it is worth noting that one of the major energy companies in Italy, Ente Nazionale Idrocarburi (ENI) has expressed their public support for the Energy Union Package. In the document that was presented to the Italian Senate in May 2015, ENI expressed a positive opinion on the Package stating that the energy strategy of the EU is solid and has already given relevant results (ENI, 2015). Later, in December 2015, ENI's Chief Executive Officer (CEO) Claudio Descalzi met European Commission Vice-President Šefčovič to discuss energy security, the development of prospects in the eastern Mediterranean basin, Italy's role as European gas market crossroads, as well as the need for an interconnected gas transport system among MSs as part of the European Energy strategy. They also referred to the Climate Conference in Paris especially the paradox of the coal use in the European energy mix. Additionally, Descalzi confirmed the commitment of the company towards the climate change challenges (La Repubblica, 2015).

As a conclusion, Italy has **actively participated in the policy making of the Energy Union** and has used its influence to bring an **international dimension** into the EU level, highlighting the role of Italy in this matter. Despite divisions at national level, the Italian parliament and senate have expressed a positive opinion on the Energy Energy Package, pointing out the need for more interconnections between Member States and the role that Italy could play in the creation of a gas hub in the South of Europe.

EU directive transposition process: example of the Directive 2009/73/EC

According to the study "Why the Italian System for Implementing EU Directives Doesn't Work: Some considerations for implementing a better way" Giovanni Moschetta (2016), outlines a number of factors that explain Italian noncompliance in transposing EU directives in Italy. They include: tortuous bureaucratic procedures, unclear regulations, a lack of transparency, mixed and concurrent powers between central government and regional and local authorities. The Italian process for transposition of European Directives has changed over the past few decades. Whereas the Pergola law enabled the President of the Republic

[13] In the 15 December 2015 EP debate over the resolution Towards a European Energy Union, both the PD and FI parties voted in favour of the resolution, while LNP and M5S voted against.

and its Ministers to proceed by decrees, the Coordination Department of EU policies has become the main coordinating body in recent years (Kaeding, 2007). After 2005, an Interdepartmental Committee for European Community Affairs was established to ensure the successful Italian transposition of EU legislation. It aims to coordinate this work with the legislative powers and monitor the progress of the Directives' implementation via a database. It also serves as a mediator between the ministries in order to reinforce intra-ministerial collaboration. This evolution has reduced the Italian transposition deficit. Nonetheless room for improvement still exists since Italy does not have any guidelines for the transposition of EU legislation. Furthermore, a greater participation in the decision making process of directives could help in the transposition process. In the case of the gas Directive 2009/73/EC, the lack of involvement in the upstream EU discussions could be considered a contributing cause for the issues observed.

Table 8: Italian transposition of Directive 2009/73/EC on the internal market in natural gas

Indicators	Outputs
Timing	14 months
Issues	Delay because of administrative issue. Partial transposition of the directive regarding the independence of the Authority for Electricity and Gas (AEEG) as well as the protection of consumers in the retail market.
Type of infringement	Formal notice art. 258 TFEU.
Participation in the making process	No information
Level of fitness	Italy supported the directive at the European level because a more competitive and liberalised energy market both at the national and the European levels and a more EU integrated energy market are in its interest. This serves Italy's final aim of becoming the primary gas hub in Southern Europe. ENI's prime influence on the main energy decisions affecting national gas security to which the government has little input (Skalamera, 2015). For more than 50 years ENI had been the national champion, to which the government delegated the task of providing for energy security. ENI thus filled the vacuum created by the various executives' lack of strategy, which was due in turn to insufficient experience and expertise in giving direction to the country's energy policy. Due to this distinctive role, ENI was able to lead the country's energy policy according to its own corporate strategy.
Nature of the political discourse	The national debate focuses on the problem to decide to what degree ENI, which traditionally held a monopoly position over gas imports, transport, and sales, had to be separated from SNAM s.p.a, a natural gas infrastructure company, originally subsidiary of ENI.
Actors involved	Italian government
Influencing factors	Most of political parties were generally favourable to the full ownership separation of the two bodies. ENI defended its traditional organisation.
Europeanisation mechanism	Transformation.
Europeanisation mechanism	Transformation.

Italy supported this Directive at European level because a more competitive, liberalised and integrated energy market is in line with Italy's aim of becoming the primary gas hub in Southern Europe. Internally, the transposition was the result of intense debate involving the various political parties, the Authority for Electricity and Gas and ENI (the historical energy supplier in Italy) which all have different points of view.

In parallel with the transposition of the Directive 2009/73/EC, the Legislative Decree No. 130 aimed at increasing competition with the development of storage infrastructure in favour of industrial operators. This new Decree also introduced a ceiling for the wholesale market share of each gas operator with gas input into the Italian national market. Additional change occurred through the implementation of the Italian Liberalisation Decree which finalised the process of ownership unbundling. This law voted in March 2012 required ENI to sell its 52% stake in gas network operator so as to increase competition and reduce consumer prices. The previous government had allowed ENI to retain ownership of Snam along the line of independent transmission operator.

While the infringement procedure is not closed, Italy adopted a transformation attitude regarding the transposition of the Directive 2009/73/EC, especially as both EU and Italy shared interests on this matter.

National policy-making: example of the Italian Decree of 8th March 2006

The Italian Decree of 8th March 2006 outlines the selection and financing procedures for research projects in the electricity sector as well as the criteria for evaluating their progress and the results obtained. It also established the rules to structurally organise the Research System and repealed Decree 28th February 2003.

Decree 8th March 2006 originated for several reasons, including the need to:

- Integrate the provisions of Decree 28th February 2003 in relation to the rationalisation of operation and administrative tasks;
- Make the management of the Fund for the Research System more efficient via the optimisation of the selection and check of research projects;
- Ensure that the access to the funding of research and development activities of the national electricity system is non-discriminatory, following the EU legislation in the field of research funding;
- Distinguish between the research activities whose results benefit the consumers of the national electricity system and those whose results benefit not only consumers but also energy operators;
- Identify different types of funding for the research activities.

Furthermore, the Decree responds to the need of further regulating and improving research in the electricity sector since Bersani Decree 79/99, which transposed Directive 96/92/CE, initiated the liberalisation of the electricity market.

Table 9: Analysis of the Italian Decree of 8th March 2006 and the brochure analysing the research system

Indicators	Outputs
Origin of the law	The law was shaped considering national perspectives. It supports research in the electricity sector even because ENEL, which is the most important electricity company in Italy, is among the players competing on the national and on the international market.
Fitness with EU energy framework	The objective of the Research System is to ensure the sustainable development of the country with low electricity prices, security, and environmental compatibility of the use of electricity. It contributes to realise the energy goal fixed by the Energy Union.
Signs of Europeanisation	The Decree refers to both national and EU legislation regulating research activities.
Interaction with other MS/EU	No information
Name of the discourse	Brochure analysing the Research System.
Context of the	Economic crisis.

Indicators	Outputs
discourse	National policy crisis. Beginning of the Ukraine-Russia crisis.
Signs of Europeanisation in the discourse	The research topics promoted in the brochure are aligned with the European energy interests: Energy efficiency Energy security Protection of environment

The Fund of Research for the Electricity Sector integrates quite well the topic of European energy policy. This is apparent from the brochure which highlights the main projects being conducted according to the guidelines over the period 2009-2011. Among them, the projects concerning renewables are particularly relevant since Italy has made important progresses in this field in compliance with the European energy vision.

i. An overview of the energy system evolution 2005-2016

Market integration

According to Ingrid Carlini (2008), the Italian transmission network in 2007 totalled 44,201 km of electricity grid divided between 20 transmission lines. With a transforming capacity of 117, 143 mega Volt-Ampere, it was considered as the 2nd largest electricity operator in Europe. Despite these impressive figures, Carlini noted that the electricity interconnection capacity was insufficient to meet the demand. This conclusion is similar with regards to the gas network. Some interesting progress has been realised since this period. Through important infrastructural investments, the country keeps improving its domestic electric market. For instance, the connection of islands (Sardinia and Sicily) with the national electricity market is projected to result in a decline in domestic electricity prices by 2017 and less energy dependency. Various technical and infrastructural improvements of the internal grid (mainly through the modernisation of existing infrastructures and the realisation of new transmission grids) were completed in 2012 allowing for better integration of different market zones and improving the transit of electricity throughout the critical South-Central-South section. Future investments include nineteen Projects of Common Interest (European Commission, 2015c) under the guidelines for trans-European energy infrastructure, mainly interconnecting Italy with France, Switzerland and Austria and the necessary internal reinforcements. Altogether such investments will ease the grid constraints and reduce differences between price zones. A sub-sea transmission cable to Tunisia is in preparation, ensuring a better connection between EU and African electricity markets. Development of the gas network has not been ignored during the period. To illustrate feasibility refer to the New LNG Terminal in Livorno which started operating in September 2013. The Trans Adriatic Pipeline project is also very representative of Italian policy. This pipeline, which should transport natural gas from the Caspian Sea to Italy via Albania, is supported by the European institutions as it will enhance energy security and diversify gas supplies in several European markets.

Market liberalisation

Over the 2005-2016 period, the market liberalisation of the Italian energy system has continued apace. Progress assessed using the Herfindahl–Hirschman Index (HHI) – with a transformation from scores of 1,800 and 5,000 for both the gas and electricity sectors respectively in 2005 to 500 and 884 in 2014 – indicate that the Italian energy market has opened and given more space to new entrants. The number of new entrants has increased over the year as well as their market share. For instance, the number of company representing 95% of the energy market concentration progressed from 88 to 493 between 2005 and 2013. Nonetheless, it would be impossible to state that the market liberalisation is finalised. Further progress could be realised by loosening of the grip of major companies such as ENI, ENEL, EDISON and CYGAM.

Energy security

Italian overall energy imports are equal to 143.79Mtoe. This figure comprises mostly of oil (50%), gas (32%) and solid fuels (9.5%), while the percentage of imported electricity is equal to 7.4%. Based on Eurostat data, in 2014 Italy reached its lowest dependence level since 1990, while **the** net import share of gross national consumption decreased to 76.9%. Despite this, the European average is equal to 53.2%, highlighting that it is still has far to go. Still the Italian overall average decrease of 7.1% is step in the right direction. A contributing factor was the fall in oil prices during the second half of 2014, but not the only one. The development of renewable energy resources is supporting Italy in its attempt at improving its energy dependency situation.
Many problems are still there despite improvements in recent years. First of all, there is a strong need for huge investments in the modernisation of the distribution infrastructures. Secondly, the renouncement of nuclear and the limited use of coal caused disequilibrium in the energy mix to the advantage of natural gas, which is now an extremely important component in the national energy mix.
Furthermore, natural gas is mainly imported by Italy from the following three countries: Russia, Libya and Algeria. Given this reliance both the Russian–Ukrainian Crisis and the Libyan crisis had strong impacts on Italian energy supply, in terms of reducing gas availability and increasing the national energy bill. In 2014, Italian imported energy decreased by 21.2% compared to 2013. It is also interesting to observe a decrease in the respective shares of energy imports to Italy in 2014, with the three largest energy suppliers (Russia, Azerbaijan and Libya) held a combined share of just 39.5% of the overall supply, equal to a 5.1% decrease with respect to 2013 figures (IEA, 2014a).

Low carbon and efficient energy system

The European 2020 targets should be easily achievable for Italy thanks to the economy crisis with the reduction in industrial activity and the development of the renewable resources being strong contributing factors. It led the country to reduce its CO_2 emissions intensity from 311 tCO_2/m€ to 242.9 tCO_2/m€ and to increase the percentage of renewable energy sources in the final gross consumption from 7.5% to 17.1% between 2005 and 2014. Additionally, the country reduced the energy intensity of its economy from 116.6 kgoe/€1000 to 98.4 kgoe/€1000 over the same period. Progressing greatly on the sustainability pathways defined by the EU, Italy has approved the National Energy Strategy (NES), which has objectives that are more ambitious to its 2020 targets than the European strategy for Climate-Energy issues. Even if the activities promoted by NES can contribute to reduction emissions over the period 2030–2050, they will not be sufficient to allow Italy an emission reduction equal to 80%, as proposed in the Energy Roadmap to 2050. To achieve this objective, many additional efforts will need to be made to change the structure of the energy system and further research on low-carbon new technologies will be needed, along with efforts to decarbonise the production of electricity.

R&D

The public budget allocated to research and development in the energy system has increased over the last decade or so. From 2005 to 2011 – the last period with available certified data from the International Energy Agency (IEA) – the total budget for public expenditure in R&D activities in the energy system increased from €296 million to €404 million. The largest share of this reallocation was devoted to fossil fuels and to the energy efficiency domains. Despite this overall increase, the economic crisis resulted in a sudden reduction in expenditures oriented toward energy efficiency and renewable energies after 2009.

The adoption of the European legislative framework and the implementation at national level of the liberalisation directives, especially for the electricity and the gas markets, has resulted in the process of alignment to continue apace. Furthermore, the implementation of national laws on energy certification and the rapid expansion of the renewable energy sector are elements of novelty in the Italian energy system.

The requirement to match European frameworks forced the Italian institutional system to improve the management of its energy sector by conferring competitiveness gains to the whole energy system. Several new private firms started working in the energy market from the supply side and from the managerial and services sectors. To complete the integration of the Italian energy system into the European system, three missing actions are still needed to be implemented. First, the realisation of new infrastructures for the electricity market is crucial to reduce those bottlenecks that can heavily impact otherwise functioning market price mechanisms. Second is the increase in financial resources devoted to the modernisation of the whole energy system, including the interlinked transport system, which is still not adequate to meet the challenging environmental targets beyond 2020. A third action that is needed is to reduce energy dependency, which appears to be a priority for the current administration. The economic crisis, the lack of investment in new technologies and input productivity are elements that might explain those delays in the Italian energy system and the partial misalignment with ongoing European integration processes.

ii. Characterisation of the Europeanisation process

Italy seems to integrate European energy strategy, to a degree (See Figure 7). For instance, Italy is on the right track to reach its 2020 renewable energy objectives. The European energy vision occupies a guiding role in the shaping national PLS. Although Italy is subject to a **top-down Europeanisation** integrating the European vision, some energy decisions have been taken considering national factors. For instance, the retreat from nuclear energy was related in no small part to the Chernobyl disaster. An additional example concerns the possibility of meeting the 2020 GHG reduction objectives, which is mainly due to the economic crisis. This top down Europeanisation is also slowed down by issues that arise when trying to effectively transpose EU directives into national law. Although the Italian contribution is less pronounced than in other MSs, the country participates in the construction of the European energy strategy in order to assert its own interests. The Italian focus on the international dimension of the Energy Union is very likely linked to its energy security issues. It could be interpreted as a **pace-setting form of bottom-up Europeanisation**. Establishing new partnerships for gas supply could be seen as the core of its strategy.

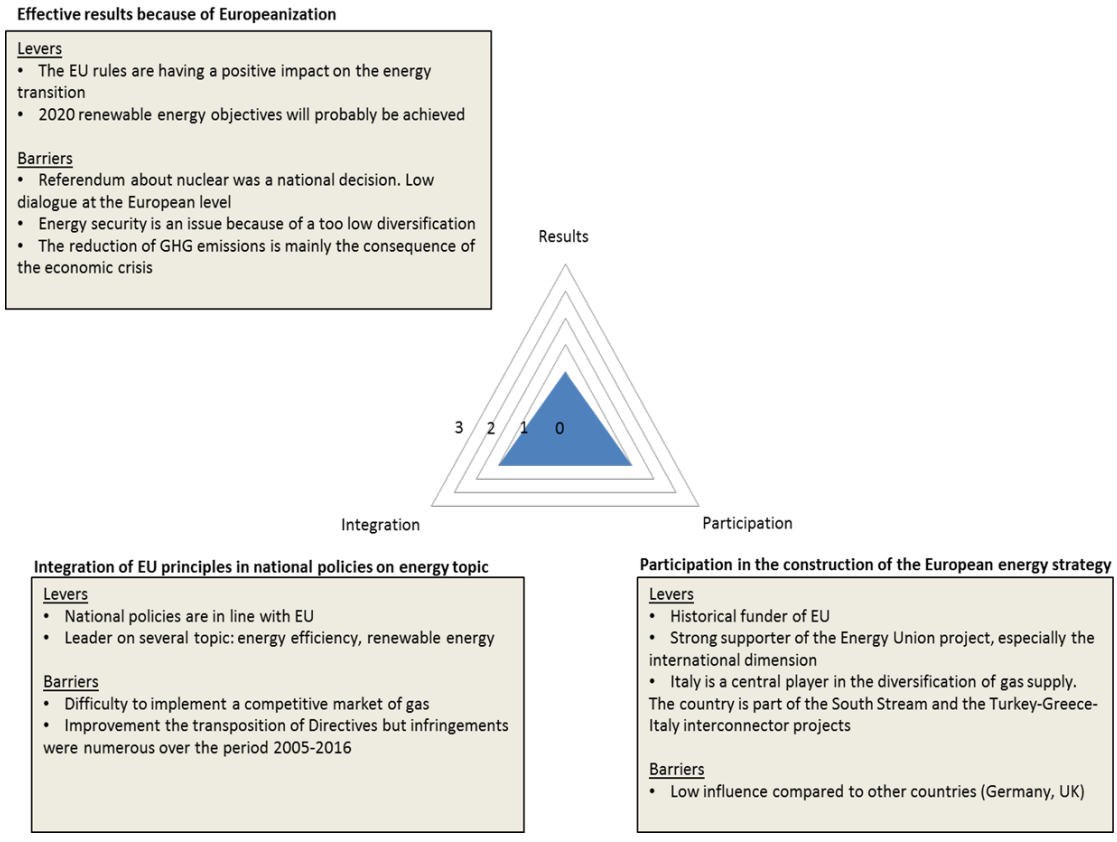

Figure 7: Characteristics of Europeanisation of the Italian energy system

3.5 Spain

i. Evolution of the policy and legal system (2005-2016)

The evolution of the Spanish policy and legal system has been highly influenced by the economic situation of the country. Accordingly, two different periods shall be considered while analysing changes:

- Between 2005 and 2009, Spain was believed to have a wealthy economic situation. This **facilitated the implementation of measures** imposed by the European Commission, including those requiring a substantial financial support from the government.
- From 2009 on, the crisis that started to hit Spain prevented the government from incentivising the development of energy measures. Thus, it adopted **a more reactive position** regarding the transposition of EU directives and a **less ambitious energy policy** at national scale.

The **continuous increase in energy consumption** between 2000 and 2008 (IEA, 2015), the important **energy dependency** and the **lack of interconnections** with other Member States were diagnosed as the main issues at both Spanish and European level. These shared concerns contributed to a progressive alignment of the Spanish policy system with the orientations given by the EU. For instance, the **Real Decree 314/2006** released in March 2006 and that described the "Technical Building Code" was in line with EU directives. Regarding the EU objectives in fostering renewable sources, **Royal decrees 1578/2008 and 661/2007** respectively published in May 2008 and September 2007 setup **feed-in-tariffs** for photovoltaic installations and other renewable sources. This is also during this period that several incentive mechanisms to **improve energy efficiency in buildings** were introduced.

Before 2008, although Spain was able to greatly adapt to EU measures it was **moored in a top-down relation**. For instance, Spain was forced to modify the **"Plan Fomento de las Energías Renovables 2000-2010"** its initial 10-year plan for renewable energy, after the launch of the Directive 2001/77/CE (European Commission, 2001). It ended up creating a new 5-year plan called **"Plan Energías Renovables 2005-2010"** (IDAE, 2005).

The alignment of the national policy and legal system get weaker afterwards with the start of the economic crisis in 2008 and the election of a new government in 2011. From this moment on, national objectives were more directed to economically balance the energy sector. National support mechanisms were less ambitious that in the past as it can be verified in the latest **Spanish Action Plan for Energy Efficiency and Savings (NEEAP 2014-2020**). It included few energy efficiency incentives and takes advantage of the energy consumption reduction due to the decrease of the economic activity.

Consequently, national efforts **strayed from what the direction the EU suggested**. This change can be first observed in the way the country deals with the transposition of EU directives. Spain has not shown initiative to transpose the EU directives on time from the first moment they are published and within the due dates. **The attitude was to delay it and do it when there is a real threaten from the EU with economic sanctions**, this had happened with the transposition of the Electricity Directive 2009/72/EC or the Energy Efficiency Directive 2012/27/EC. Therefore, transposition processes were handled hastily with an unavoidable effect on the quality. The evaluation conducted by the EU resulted in the highlight of **incorrect or incomplete transpositions** that implied the opening of infringements and thus the rework of the Spanish legislation to properly adapt it to EU requirements.

Besides the penalties and the additional effort it created, this back and forth way of working resulted in **increased complexity of the Spanish legal system**. On relevant example concerns the contradiction between two recently published laws. While the Royal Decree 900/2015 limits the concept of self-consumption, the Royal Decree 56/2016, transposition of the Energy Efficiency Directive 2012/27/EC, aims at developing near-zero energy buildings by encouraging the producing of its own energy.

In some situations, the government even backed down on already implemented law as it was the case for electricity for instance. The **Law 24/2013** (Boletín Oficial del Estado, 2013) considers the electric sector as a

"service of general economic interest" and aims at tackling the deficit of tariff. It imposed a single retribution to all electricity producers, thus **removing the special regime for renewables sources installations**.

After 2009 Spain has clearly slackened on the accomplishment of the EU objectives settled by the European Commission. Accumulated delays, incorrect and/or incomplete transpositions, the lack of coordination on the content of the laws are a few elements that highlight the increasing reluctance to comply with EU orientations. The **large number of energy related infringements** (over 80) addressed to Spain by the EU (European Commission, 2016a) illustrates well this fact. Among other, the list contains infringements related to important EU directives such as the Electricity Directive 2009/72/EC and the Gas Directive 2009/73/EC.

Regarding the implementation of a new and common model for the energy sector in Europe, both the government and the utilities were pretty **reluctant to any change**. Indeed, at that time they shared an almost full control on the sector. The creation of an independent entity to regulate the energy sector National Markets and Competence Commission (CNMC, 2016) meant that traditional actors would lose some decision making power. The introduction of new actors for production and retailing activities or the increase in customer rights are some of the elements coming with the market liberalisation on which Spain and the EU were opposed.

Nevertheless, the influence of the EU is visible in the Spanish legal system, even if it is not as much as it should be due to **the passive position** of the Spanish government. It helped to improve the transparency on the energy sector, to open the market to new actors (new retailers, producers *etc.*) or to improve customer's rights. It is also important to highlight the fact that this situation was mostly **caused by a clear capacity shortage and not by a lack of desire** to respond to Europeanisation. This is evidenced by the Spanish commitment and involvement observed before the economic crisis.

These last years the Spanish effort focused on energy efficiency measures in buildings. It created the **National Energy Efficiency Fund** with the Royal Decree 18/2014 as well as the **National Energy Efficiency Action Plans** (NEEAPs). It also addresses the transport sector by implementing various incentive plans such as the PIMA Aire, PIVE[14] or MOVELE that encourage citizens to swap their old vehicles for newer and less pollutant ones. Despites the use of such measure the European Union kept pressuring Spain as most of the energy consumption decrease is linked to the economic slowdown.

In the end, although national adaptations to EU guidelines are often slow, delayed or incomplete, the **Spanish policy and legal system has evolved under EU influence**, together with worsening economic conditions since 2009. In some cases, these two pulling sources have led to a complexification of the energy regulation and to some extend to important contradictions. The fact that Spain follows the main EU orientations with a **follower attitude** leaves a great room for a deeper Europeanisation of its PLS. There is a belief that a combination of the social pressure (bottom-up) and the higher level institutions like EU (top-down) could change the actual regulatory style and process in Spain.

ii. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

Spain has seen in **the Energy Union a key opportunity to tackle main issues** that affect its national energy system and improve it while adapting to EU requirements. Among these problems, three main issues are important to mention (European Commission, 2015).

[14] Plan de Incentivos al. Vehículo Eficiente

First, and due to their geographic location, EU peripheral MS suffer from a **lack of interconnections** with others states and are assimilated to energy islands. As an example, current electricity cables between Spain and France can only cover 3% of the Spanish peak demand (European Commission, 2015) whereas EU objectives call for an interconnection of at least 10% by 2020[15].

Second, the Spanish **dependency on energy imports** is above the EU average, notably for oil and gas for which it is closed to 100% (IEA, 2014b). However, Spain accounts for one of the highest levels of gas supplier diversification in Europe (Ibis), due to be its interconnections with the North of Africa. Finally, Spain accumulated an important debt due to its electric system, estimated in December 2015 at €25m (CNMC, 2016). To tackle this, the Spanish government increased the access tolls cost for the end consumer, ending up in to raise of the electricity prices. Therefore, Spain has one of the highest electricity prices in the EU (Eurostat, 2016), which implies the increase the risk of **fuel poverty**.

The Spanish authorities have been pushing for years for a deeper interconnection with France and the rest of Europe, in order to be fully aligned with the Energy Union interconnection objectives. France did not substantial motivation as they can rely on a stable electricity production thanks to nuclear power and already has a high interconnection rate with the rest of Europe (11%). France delayed significantly in what appeared to be a **foot-dragging strategy** using a environmental concerns. Besides, it was also thought that the new interconnections would require large investments from to reinforce the French electricity grid and that Spanish wind production could potentially mean increased instabilities on the French grid which already had to deal with surplus renewable electricity coming from Germany (Martín, 2014).

Facing with this situation, Spain and Portugal exert **intensive diplomatic actions** to put the **debate on the energy islands** in Europe on the table. To achieve this objective, both countries were ready to block the discussion over the 2030 climate-energy package (La Tribune, 2014). In a document released after the European Council on Energy of October 2015, Madrid criticised the obstacles set up by French operators (De Taillac, 2015). Spain also presented a series of arguments to convince both the European Union and France about the importance of the interconnection. In the one hand an interconnection would let France benefit from the Spanish's cheap wind electricity and create new market opportunities for its nuclear production. On the other hand, the European Union would be able to diversify its energy supply and thus reduce its import dependency on the Russian natural gas thanks to the access the North-Africa market.

A **meeting proposed by Spain** and held in Brussels on the 19th December 2014, with the participation of the Spanish, French and Portuguese Prime Ministers and the European Commission, represented by Jean-Claude Junker; so that, the energy interconnections could be financed by the so called "Juncker plan". The output of this meeting was positive for Spain, as the European Commission expressed its will to support the projects that improve the interconnection capacity of Spain, Portugal and France (Euroxpress, 2014). In addition, the three Governments agreed on setting up a new regional High Level Group for South-West Europe on interconnections that will be put in place by the European Commission. This High Level Group will consult all the concerned key players, considering also the environmental and financial dimensions (European Commission, 2015).

It is worth to mention that the current **European Commissioner for Climate Action and Energy is a former Spanish politician**, Mr. Miguel Arias Cañete. He helped to implement the different measures of the plan and actively participated in the negotiation process between the Spanish government and the European Commission. As a conclusion, Spain sees the Energy Union as **a powerful lever to bring national difficulties into the EU level**. The country does not hesitate to directly **influence the content and direction** of the Energy Union plan, in order to protect national interests. The Spanish government took action and **initiated**

[15] Member States are required to build the necessary infrastructure to be able to transmit at least 10% of their generated electricity to neighbouring countries by 2020.

the negotiation process. It also applied a specific strategy that aimed to convince not only **the EU but also neighbouring states** that a well-connected Iberian Peninsula would be a great advantage for all sides.

EU directive transposition process: example of the Directive 2009/72/EC

Similarly, to other MS, the negotiation ahead of the directive adoption in Spain is carried out by the State. It asserts the Spanish interests through the Secretariat of State for the European Union, under the auspices of the Ministry of Foreign Affairs and Co-operation. Once a directive adopted, the Secretary of State for the European Union, first names the responsible ministry responsible for ensure the monitoring of the transposition process. Autonomous Communities are also taken into account. The Autonomous Communities should assess to what extent their regulatory framework matches with EU legislation.

After an ex-ante impact assessment, the 'transposition usually occurs by direct transposition of the directive itself into a new legal instrument, and not by amending existing domestic provisions. Transposition is carried out using the same instruments and processes as for national origin legislation' (OECD, 2010). The monitoring of the whole transposition process is achieved via a centralised database which is administrated by the 'Secretary of State for the EU, who exerts pressure on the ministries in case of delays in the transposition process' (Ibis). OECD suggests there is room for improvement in the procedures for the participation in the making process of the Directive. **Late participation, lack of common negotiating basis between the Spanish representatives** prevents the country to effectively stress its interests. It could explain the absence of information when analysing the transposition of the Electricity Directive 2009/72/EC.

Table 10: Spanish transposition of Directive 2009/72/EC on the internal market in electricity

Indicators	Outputs
Timing	32 months
Issues	Delay in transposition because of election and change of government. Partial transposition of the directive. The European Commission required more power for the National Commission of Market and Competence.
Type of infringement	Reasoned opinion Art. 258 TFEU. Formal notice Art. 258 TFEU.
Participation in the making process	No information
Level of fitness	The level of fitness was low given that the vertical nature of the Spanish energy system. It is important to note the strong lobby practised by large traditional utilities which were afraid to lose their situation of monopoly.
Nature of the political discourse	No information
Actors involved	Jose Manuel Soria, Ministry of Industry, Energy and Tourism.
Influencing factors	Spanish government adapted a passive attitudes and a lack of will to change. It implied a general slow transposition process. The hard economic situation of Spain since due to the economic crisis has affected the public treasury of the electric sector. The government did not want to lose competences on regulation.
Europeanisation mechanism	Inertia and retrenchment could the mechanism transposition of this Directive.

In the particular case of the Electricity Directive 2009/72/EC which concern a sector with a strong lobby, the large traditional utilities pressure on the government when it comes to new legislation, since they feared to

lose their privileges. Moreover, the elections on December 2011 also could have truncated the transposition procedure. Finally, the **hard economic situation** of Spain since the crash of the financial sector and the **significant debt –related to the electricity sector** - that has affected the public treasury, are the two main reasons why the government does not want to lose competences on regulation.

Spain had a **passive** and **reactive** position when transposing the Electricity Directive 2009/72/EC therefore it was delayed and incorrect.

National policy-making: example of the Royal Decree 900/2015

The Royal Decree 900/2015, approved on the 9th October 2015 regulates the administrative, technical and economic conditions of the electric energy supply with self-consumption and the production of self-consumption. It seeks to "promote economically sustainable distributed generation and the use of renewable energies, but also introduces charges and tolls for grid access, with the goal of fair burden-sharing among electricity grid users" (LSE, 2015).

Table 11: Analysis of the Spanish Royal Decree 900/2015 and the political discourse presenting the Decree

Indicators	Outputs
Origin of the law	The law was shaped considering national perspectives. It aims at filling the deficit-of-tariff" of the electric sector.
Fitness with EU energy framework	"The law seems to bring the development of renewable energy and self-consumption to a complete halt: The net metering system was finally withdrawn from the last version of the final version of the law. Self-consumption PV owners will pay an extra tax compared to classic consumers (a fee for each kilowatt-hour of energy self-consumed instantaneously plus another charge to be paid in respect of all facilities including those using batteries). Private self-consumers must give back for free the surplus of energy that was not consumed. Even if it authorises battery storage, battery owners are not allowed to reduce the maximum power they have under contract with their utility. This condition drives the recourse to battery financially unattractive. It implies less diversification of the energy sources and greater energy dependence.
Signs of Europeanisation	The law does not contain sign of Europeanisation but only few references to European directives (Directive 2009/28/EC on the promotion of the use of energy from renewable sources).
Interaction with other MS/EU	No sign of interaction with either the EU or MS were noted.
Discourse name	Discourse of the presentation of the Royal Decree 900/2015.
Context of the discourse	Bad economic situation. The Spanish public debt was up to 100% of its GDP.
Signs of Europeanisation in the discourse	The discourse contains no reference to any European Directives neither to the EU priorities on energy. The national component is strong in the discourse.

The self-consumption policy is strictly thought to solve the economic issues in the national electric system. No elements in the discourse pronounced by the Minister of Industry, Energy and Tourism, Mr. José Manuel Soria López or in the law that express any possible relation or collaboration to other Member States or EU. The double taxed due to the access tolls for prosumers, known also as the 'Sun tax' seems to run counter the Electricity Directive 2009/72/EC that prevent discriminatory tolls. It suggests a form of

pace-setting bottom-up Europeanisation insofar it takes advantage of what should be a costly policy for the country.

The civil society opinion expressed its disapproval[16] as well as the renewable energy companies, the associations, and some institutions like the Comisión Nacional Energía (CNE), the National Commission of Markets and Competence (CNMC) and the Ombudswoman.

iii. An overview of the energy system evolution 2005-2016

Market integration

The peripheral EU Member States have historically suffered a lack of interconnection with their neighbour Member States, so they behave as energy islands. Spain is not an exception and still in 2015 the electricity interconnection with France and Portugal is less than the 3%. This percentage has remained the same in the last decade, although the interconnection capacity in absolute terms has increased. The Spanish electric power capacity has also increased, even if the interconnection investments have not been enough to improve this percentage. Regarding gas, Spain accounts with an important gas infrastructure, as it imports almost all the Natural Gas that is consumed. Its location near the North of Africa allowed Spain to have pipeline connection with Morocco and Algeria to import gas. However, Spain also has connections with France and Portugal, to highlight the reverse interconnection upgrade with France in 2013, expected to reach 7bm/y in 2015.

The agreements on the framework of the Energy Union allocate financial support to improve the interconnections projects, such as the MidCat project or the subsea Biscay Bay project. Despite these future efforts to reduce the congestion on the interconnections between countries and therefore prevent from market failures ensuring supply, Spain still will not be able reach the objective of 10% interconnection by 2020 and 15% interconnection by 2030 (Natural Gas Europe, 2015).

The coupling of the Spanish energy market with other markets started in 2007, with the fully operation start of the Iberian Electricity Market - MIBEL that created an integrated electricity wholesale market with Portugal. In 2014, the Iberian day-ahead market was coupled with the Central and Northern European markets. Continuing its coupling, in 2014 the Spanish government created a wholesale organised market for gas as well, until then only bilateral (also named Over-The-Counter OTC) market existed. The Iberian Gas Market - MIBGAS started to operate in December 2015. The European integration benefits the country since the country energy market is coupled with European markets following the directions of EU directives.

Market liberalisation

Spain energy market was restricted to only a few large companies, but today, even though the market liberalisation, the market has suffered specific changes but overall has not been transformed dramatically. This Herfindahl-Hirschman Index[17] (HHI) states that in 2005, Spain has both highly concentrated markets (HHI between 1800 – 2500) on electricity power generation and gas import and production markets. The same index in 2014 showed a reduction of the concentration in the power generation markets (HHI = 1329). It is due to the approval of the special regime production with renewable energy sources, allowing new actors to come in and diversify the market. In the gas side, supply markets and gas imports are still highly concentrated with an HHI = 2399 and HHI = 2710, respectively. Reasons behind the high HHI value could be due to the fact that the Spanish wholesale organised market for gas was not operative until December 2015, Law 8/2015 and also that in 2009 two of the largest gas suppliers merged. As regards the gas imports HHI score has remained high according to the standard measure, though Spain accounts for a

[16] more than 200.000 signatures and 40.000 allegations against the text were collected
[17] It is used to calculate weightily the market concentration of all firms in the market

well-diversified wholesale gas market with an import concentration lower than other European markets. Even though these numbers, Spain has been situated well below the EU average, as in 2013 the EU-28 average index for power generation was placed around 4000 points and the gas supply around 4850. Focusing on electricity, the values in Figure 8 are pointing to the same direction of reducing the market concentration, this is visible on the constant reduction of the share of the largest producer, the increase of producers that has more than the 95% of the market share the following figures and on the retailer side the main electricity retailers with more than a 5% of the market share have been reduced.

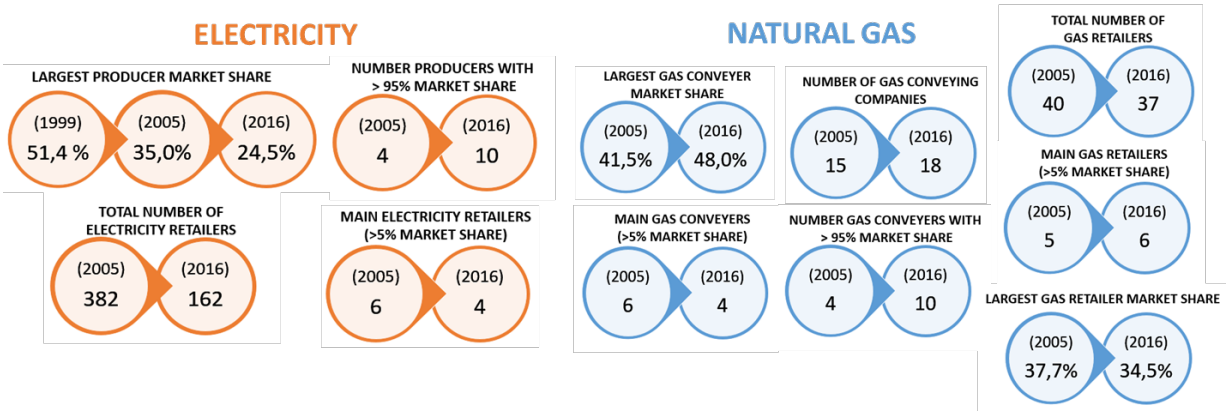

Figure 8: Electricity and natural gas market evolution figures (European Commission, 2016)

On the gas sector, although the diversification of the gas imports has increased, the number of companies that are conveying gas to the countries is similar from a decade ago. Only 4 of them have a market share higher than the 5%.

Energy security

During this decade Spain has reduced the energy import dependency, from 81.4% (2005) to 72.9% (2016). The economic crash in 2008 affected the Spanish economic activity and therefore reduced energy consumption. At the same time, electricity production with local and renewable sources has been increased in this period. The Spanish dependency in gas and petroleum imports is almost 100%, as there are no local sources and electricity and gas interconnection rates with neighbours EU countries are very low. Future investments are agreed within the Energy Union framework. However, Spain has diversified sources for natural gas import. In 2015, natural gas was imported from Algeria (53.9%), Nigeria (13.6%), Qatar (11.0%), Norway (10.6%), Perú (3.7%), Oman (2.8%) and others (4.2%).

Low carbon and efficient energy system

The indicators presented in Figure 9 show that Spain has quite positive figures regarding efficient and low carbon energy system. The increase of the renewable energy percentage in gross energy consumption has been doubled during the last decade from the 8.4% in 2005 to the 16.2% in 2014. Additionally, energy intensity has been reduced almost by 20% from 140.7 ton/M€ to 112.3ton/M€ while the CO_2/GDP indicators have been reduced by almost 30%. Finally, energy efficiency gains have been constant but slowly increasing reaching a 9.2% in 2013 compared to 2000.

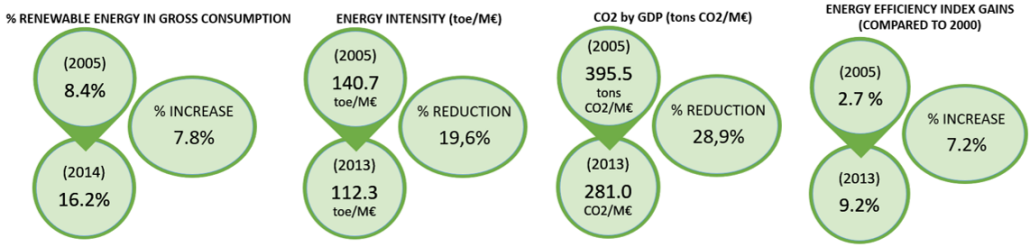

Figure 9: Spanish low-carbon and energy efficiency system's figures (European Commission, 2016)

R&D

The government budget appropriations on energy indicator has been reduced from 3.5 €/inhabitant in 2006 to 2.9 €/inhabitant in 2015 because of global budget reduction resulting from the economic crisis mainly. The situation of the Spanish energy system is deeply linked with its **geographical situation** as well as the **economic crisis** that hit the country at the end of the 2000s. Despite the fact that these factors are dominating, it is possible to read the influence of the EU vision in the evolution of the Spanish energy system. It is more likely that the signs of Europeanisation deepen through time since the European Commission and Spain share the same interests.

iv. Characterisation of the Europeanisation process

Because of its lack of influence, Spain hardly succeeded to assert its interests at European level within the power game. Its influential power is low compared to other MS such as Germany, UK and France, having more impact on the shaping of the directives. Nonetheless, in some occasions the country proceeds through bottom-up mechanisms to assert its interests. The diplomatic strategy setup by the country to increase its interconnection with France illustrates the Spanish approach towards Europeanisation. Spain could be considered as a follower (See Figure 10). The economic crisis that hit the country shattered the integration of EU measures. It prevented the good transposition of energy and environmental directives, as the economical dimension is still today the priority. The 'Sun tax' is a perfect example of this prioritisation that diverts the investment in the renewable energy sector (Walsh, 2015). The recent good signs from the Spanish economic as well as the resurgence of influence at the European level illustrated by the central role of Miguel Arias Cañete could be a game changer.

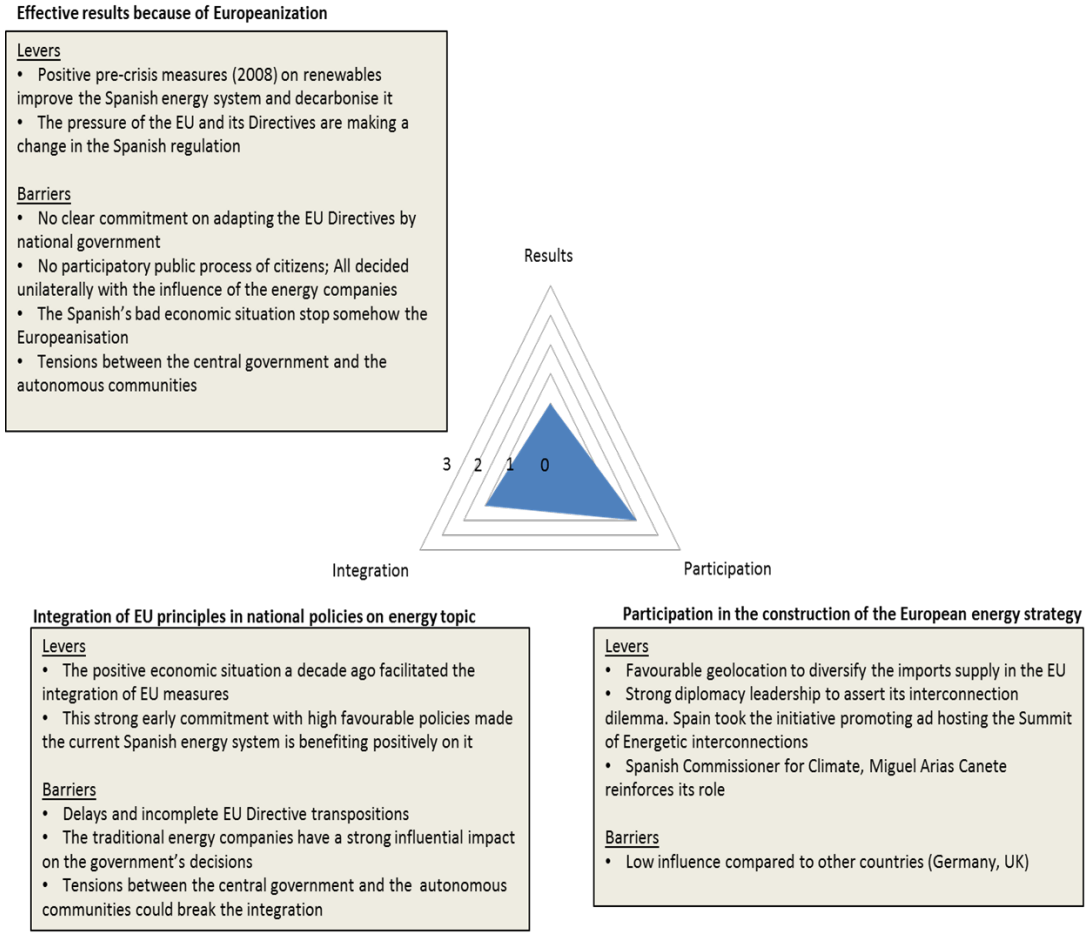

Figure 10: Characteristics of Europeanisation of the Spanish energy system

3.6 UK

i. Evolution of the policy and legal system (2005-2016)

The main political objectives and directions regarding UK energy policy between 20005 and 2016 have largely mirrored developments from the European level: the transposing of EU 2004/101/EC directive, EU Energy End-use Efficiency Directive, the Renewable Energy Directive and the Energy Services Directive. They include among other things, the increase of renewable energy generation by 15% by 2020 and the reduction of energy consumption by 30% by 2020. Additionally, the liberal dimension of the Britain energy market, which started in 1989 via the Electricity Act 1989, was ultimately used as a blueprint by the EU (Dutton, 2016). Further to the Hampton Court which transmitted the Tony's Blair call for an EU energy security policy in 2005, the Parliament established the Climate Change and Sustainable Energy Act 2006. It aims at developing microgeneration energy capacities such as small scale wind turbines, heat pump and solar electricity installations. Resort to local and renewable energy sources is aligned with the dimensions of the CSS framework.

There are policies that the UK has developed that go beyond EU objectives and directions. For example, the UK Climate Change Act 2008 outlines a 80% reduction in greenhouse gas emissions by 2050 from 1990 levels and the Energy Act 2013 outlines a new generation of nuclear energy to replace coal-fired power stations. At the time of creation, the Climate Change Act goes beyond the EU objectives of reducing carbon emissions. The Energy Act outlines that fracking of shale gas is a viable energy source to improve energy security and reduce imported fuel sources. Emphasis on fracking **shale gas goes against generally accepted European energy policy** in opposition against an increase of renewable energy similar to other EU MS. Apart from this policy objective to improve energy security through hydraulic fracturing, (energy security is one of the EU's key energy objectives) the UK has implemented and agrees with the broader energy discourse of sustainability that is dominant across Europe.

The Energy Act voted in 2011 implemented the Green Deal in the UK that permits loans for energy saving measures. Although it was designed in coherence with the National Energy Efficiency Action Plans ordered by EU, its implementation suffers from many issues, especially too high interest rates. The Energy Bill, 2012–2013 introduced a number of mechanisms which aimed at setting decarbonisation targets for the UK, and reforming the electricity market. It implemented a Capacity Market which intended to incentivise investment in more sustainable, low-carbon electricity capacity at the least cost for energy consumers. The insurance of the security of the electricity supply, one of the objectives promoted at EU level, leans on new measures that facilitate the building of nuclear power plants. Even if this regulation fails within the EU energy strategy, it serves national interests. Between 2005 and 2016, the policies and rules are in line with the broader EU strategy on energy and climate objectives. To that end, **UK energy policy has not changed dramatically** to reflect EU rules and legislation.

With respect to the Brexit vote in the recent referendum on EU membership in the UK, this has substantial implications for future Europeanisation. Particularly, this has implications for the European Energy Union and further transposition of EU law in the UK under the European Communities Act 1972 as the UK secedes from its membership. As such, **the UK will no longer be required to formally integrate EU energy policy** into its own legislation. However, the UK's political discourse is still largely in agreement with European countries to address climate change and improve energy security through domestic generation of renewable energy and diversification of its energy system. It is expected that the UK will trigger Article 50 of the Lisbon Treaty to formally exit the European Union in early 2017 which will result in a post-EU United Kingdom in 2019. It is at this point that further Europeanisation of UK policy will cease. Even if the UK will not commit to transpose future EU directives after the UK leaves the Union, **its energy policy could still take into account European objectives and mechanisms**, while remaining an active participant in existing projects such as the EU ETS.

ii. Analysis of policy making processes

National contribution to the EU policy-making process: example of the Energy Union

There is **little publicly available information** regarding what the UK specifically wants for, and from, the Energy Union. Indeed, the policy-making process coincides with the campaign for the UK's European Union "Brexit" referendum where citizens would vote to 'Remain' or 'Leave' the EU, period that deeply questioned the future involvement of the UK in the EU project. Nonetheless, the UK Government seeks, among others, reduce public spending, ensure energy security, and creating more jobs. From this perspective, **the UK is supportive of the Energy Union** and its priorities of supply security, energy efficiency and climate action. These positions have been fully outlined in previous UK energy policy and announcements including the Energy Act 2013 and the recent Department for Energy and Climate Change November 2015 Announcement (DECC, 2015) which heavily reference emphasis on natural gas and new nuclear energy to support the UK's low-carbon agenda.

Decarbonisation targets are integrated in UK Law with the introduction of the UK Climate Change Act 2008 (DECC, 2008), with the fifth decarbonisation target announced in March 2016 to run from 2028 to 2032 to achieve a 57% reduction in emissions below 1990 levels. The fourth carbon budget identifies a 52% reduction of emissions by 2025, and builds on the 36% reduction already achieved by 2014 (Committee on Climate Change, 2016). Reflecting the other priorities of the Energy Union, improved **energy efficiency** is also included within UK policy particularly within the UK Energy Act 2013 and the UK Energy Efficiency Strategy 2012 (DECC, 2013). **Competitive supply** of energy has been allowed in the UK since 1998 by other Member States as long as they hold a licence under the National Regulatory Authority, OFGEM, which is the means by which the trading and balancing rules are imposed in the UK. This also meets Article 37 in the Gas Directive 2009/73/EC.

Further national objectives that complement the Energy Union include the commitment to address climate change, increase the **use of renewables** by 15% by 2020 and increase the production and consumption of **nuclear energy** and **natural gas** (DECC, 2015). These commitments to addressing climate change and renewable energy generation are outlined in the Low Carbon Transition Plan 2009 and the UK Energy Act 2013. Renewable energy and new nuclear energy are viewed positively, yet there remains a strong sense of NIMBYism[18] (Devine-Wright, 2013) alongside other challenges to nuclear energy including legal challenges, rising costs of development and investment barriers. Consequently, the UK's perceptions of energy and the Government's actions strongly align with the principles of the Energy Union, particularly with respect to climate research and innovation in the transition to a low-carbon energy supply chain.

However, some divergences can be observed in the Department for Energy and Climate Change at the November 2015 Announcement (DECC, 2015) that places a significant emphasis on exploiting **fracking of shale gas** opportunities, even if this practice is increasingly being viewed as socially unacceptable within the UK, particularly in rural areas. While a diversity of energy sources to be used in the energy mix is a vital component of the EU Energy Union, the environmental impacts of fracking may to some extent run counter one of the principles (reduction of emission) the Energy Union is attempting to espouse. That being said, the European Commission is not categorically against exploiting shale gas since it adopted recommendations aiming to ensure that proper environmental and climate safeguards are in place for 'fracking[19]' (European Commission, 2014) .

Another example of conflict with the Energy Union can be seen in the collaboration between the UK and Czech Republic to influence EU energy policy towards the Energy Union on the governance of policy goals to **reduce administration and legislation** to respect Member State flexibility (Kilisek, 2015).

[18] NIMBY stands for "Not in my Back Yard".

[19] Fracking corresponds to a hydraulic fracturing, which is a technique used in the extraction of gas and oil from 'shale' rock formations by injecting water at high pressure.

All these factors have strongly influenced the UK's participation in the Energy Union. Even if little information is accessible on the UK's contribution to the Energy Union, EurActiv ranked the country as the second influencer regarding Energy Union (EurActiv, 2016). Therefore, it may be supposed that existing national policies and objectives support future transposition processes. Although the UK is aligned and shares many of the key principles of the Energy Union within its political discourse and policies, it is outlined that these **objectives pre-existed the creation process of the Energy Union**. The UK is viewed as a leader in addressing climate change despite its recent change in energy policy. The UK Government acknowledges that climate change must be addressed and realigning energy policy and consumption towards low-carbon sources of energy is a key route to achieving this national objective.

In addition, it is recognised that there is a **strong anti-integration movement** within the UK culminating in the UK European Union Referendum. The current UK position regarding BREXIT represented a growing discontent among a portion of the UK population with respect to 'ever closer union' and European integration. The result of the referendum will undeniably cause **the exit of the UK from the European Union**. Although this will not happen immediately, it may significantly affect the Energy Union and potentially future trade and collaborative ventures with other European Union member states. BREXIT also have consequences for the UK in terms of trading energy and therefore significantly influences UK energy security. Pro-EU camps argued that energy security is a key priority and that BREXIT harms UK energy security as UK's ability to negotiate energy deals would be greatly diminished without European member states at its side. Anti-EU groups contended that this would not be an issue for the UK who could continue trading with European member states and look to other non-EU countries for energy supplies.

As a conclusion, the UK who played a leading role in addressing climate change considers the Energy Union is a framework relying on **policies already implemented at national scale** and that have been defended for years on the international stage. In addition, **the UK seems engaged in double dealing**. On the one hand UK's energy policies are pretty well aligned with the European vision and the country figures among the most influencing EU Member States on the Energy Union. On the other hand, divergences emerge with the discovery of new fossil fuels resources, the use of unofficial documents to influence the EU and the preparation of the BREXIT. Finally, the little information publicly available tends to make it more difficult to clarify and understand the UK's position regarding the Energy Union.

EU directive transposition process: example of the Directive 2009/73/EC

To transpose European Directives, the UK Government can lean towards two methods: 'copy-out' or 'elaboration'. The former transcribes the directive into UK law with no additions or changes whereas the latter augments the wording of the directive, to provide greater clarity (Miller, 2014). In 2013, the UK Government developed a list of guiding principles for EU legislation reflecting the UK positioning regarding EU institutions. Before the adoption of Directives, it is suggested that UK representatives discuss the alternatives to the Directive. If it is not possible, it is recommended to engage with the European Commission to increase UK's influence on the drafting of legislative proposals or to build alliances with other MS to increase the UK's effectiveness in negotiation. Once adopted, the Government should not to go beyond the minimum expectation of the Directive. It also recommends ensuring the competitiveness of UK businesses compared with its European counterparts. The guiding principles bring a special perspective to the analysis of the Directive 2009/73/EC concerning common rules for the internal market in natural gas.

Table 12: UK transposition of Directive 2009/73/EC on the internal market in natural gas

Indicators	Outputs
Timing	19 months.
Issues	Incomplete transposition of the Directive.
Type of infringement	Referral to Court Art. 258 TFEU - 260(3) TFEU. While the UK Government indicates that the Directive was fully transposed in 2011, the European Commissions' referral

Indicators	Outputs
	to the European Court of Justice imposed a daily penalty of €148,177.92 for each partially transposed Directive.
Participation in the making process	The UK was not directly involved in the making of the 2009/73/EC at the EU level but still was in favour of the Directive.
Level of fitness	UK Government outlines that the main elements of the Directive were being transposed by the existing regulatory framework and subsequently by the Electricity and Gas (Internal Markets) Regulations 2011. These regulations do 'more than is necessary to implement the Directive' to preserve the independence of the National Regulatory Authority (OFGEM: Office of Gas and Electricity Markets) and enable it to implement binding decisions and ensure a suitable appeals mechanism. Much of UK existing regulatory framework including the Gas Act 1986, Utilities Act 2000, and Energy Acts 2004, 2008 and 2010 have operated in accordance with the principles of the Directive.
Nature of the political discourse	The political discourse of the UK supported the transposition of the Gas Directive. More recently, the BREXIT and an emerging left-wing policy towards nationalising energy utilities have run counter to 2009/73/EC.
Actors involved	The Department for Energy and Climate Change. The National Regulatory Authority. The Energy Ombudsman.
Influencing factors	Good fitness of the UK regulation. Significant changes that resulted from the Gas Directive included requiring "three weeks for changes to made for switching energy suppliers and prevent suppliers from charging customers for any costs associated with changing supplier". As such, the actors and institutions that were affected by the transposition of 2009/73/EC were energy suppliers rather than the UK energy policy. Given that only amendments to existing policies were required, the UK Government did not need to go through the policy making process which sees policies undergo multiple readings, be debated and then passed through the House of Lords to eventually be granted Royal Assent to be made into Law.
Europeanisation mechanism	'Accommodation' could define this transition process as well as 'Retrenchment' considering the incomplete transposition.

In 2011, the European Commission opened 57 infringement procedures against the UK for late transposition of various directives. The country ranked 23rd in the EU-27 in 2011 and 21st in the EU-28 in 2013 in the list of better MS in the transposition process. UK has traditionally considered unfavourably EU legal power. The recent Brexit process reveals the will of a country that disagrees with EU values and legal power and introduces uncertainty in the future collaboration between the EU and the UK.

National policy-making: example of the Climate Change Act

The Climate Change Act introduced by the Britain Parliament in 2008 introduced the world first term legally binding framework to tackle the effects of climate change. It develops two objectives. First it aims at improving carbon management and helps the transition towards a low carbon economy in UK. Second it highlights the strong Britain leadership to fight climate change (NHS, no date). Therefore, the Climate Change Act 2008 implemented among other things, a legally binding targets[20] , a carbon budgeting system[21], a special Committee on Climate Change[22].

[20] A reduction of CO_2 emissions by 26% by 2020 and a reduction of GHG emissions by 80% by 2050 both compared to 1990 baseline.
[21] A cap emission system over five year periods, with three budgets set at a time, to set out our trajectory to 2050
[22] An independent expert body aims at advising Government and informing the Parliament about the progress

Table 13: Analysis of the UK Climate Change Act and the explanatory notes accompanying the discourse

Indicators	Outputs
Origin of the law	It was born out of the need to address climate change from a global platform following the UK's ratification of the Kyoto Protocol. Its necessity is reinforced by the Stern review of the economy of climate change.
Fitness with EU energy framework	The UK Climate Change Act 2008 pre-dates a number of EU legislation calling for action against climate change and a secure and competitive energy frame across Europe. The broad discourse of the UK Climate Change Act 2008 fully accords with the current framework of the European Energy Union regarding the implementation of a sustainable and secure energy system. From this perspective. It is highly likely that the UK Climate Change Act inspired EU policies on climate change and carbon emissions reductions as it provided a template for further policies. This avant-gardist suggests that a bottom-up Europeanisation process was at stake.
Signs of Europeanisation	The law contains only little references to specific EU objectives
Interaction with other MS/ EU	The Climate Change Act has provided a platform and a policy of best practice in addressing climate change for other MS (though there was no direct contact with other MS during the policy making process)
Name of the discourse	Explanatory Notes accompanying the UK Climate Change Act 2008
Context of the discourse	Implementation of the Kyoto protocol since 2005. The Stern review of the economy of climate change. Preliminary discussions about the European Union climate and energy package.
Signs of Europeanisation in the discourse	The text contains very few references to European law. The reasons for this are because the Act primarily focuses on the national objectives and leadership of addressing climate change in the UK.

The UK Climate Change Act 2008 assigned to UK a frontrunner position. UK was in a good position to influence other MS as well as EU institutions through horizontal and pace-setting bottom-up strategies.

iii. An overview of the energy system evolution 2005-2016

Looking at the changes and additions with respect to energy and climate policy in the UK, it is clear that this has evolved and adapted over the past 11 years. Specifically, the UK's energy policy has significantly affected the market, the energy security, the research and development as well as the low-carbon energy efficiency.

Market integration

As an island, interconnection capacity is key to ensure the continuity of the energy supply. In 2005, UK had already achieved interesting progress since the country shared its electricity and gas network respectively with the pair France-Ireland and the pair Belgium-Ireland. Since, the progress has been mitigated.
The current electricity interconnection of UK – around 6% - is far from the 10% interconnection objective fixed by the Energy Union by 2020. However, electrical interconnection projects are ongoing to put UK back on the right track. Indeed, Norway and UK finalise a deal over the construction phase for the 720 km interconnector known as the NSL project. The subsea interconnector with a planned capacity of 1400MW will connect the electricity systems of the two countries. A similar project, the Viking Link is under construction between the UK and the Denmark.
The situation regarding gas is less concerning. The European Commission acknowledged that the 'the British gas system is well interconnected' (European Commission, no date). In 2016, the British gas system was interconnected with 4 countries: Belgium, Ireland, Northern Ireland and the Netherlands. This

diversification contributes to interesting wholesale gas prices which are lower than the EU average. All these interconnections are required to unblock the British grid which suffered even recently from congestion issues. It could be especially profitable considering the reinforcement of the cooperation operated at the regional level. While the country was part of the North Western Market in 2004, UK is today member of 3 regional groups which have been established under the Trans-European Energy networks (TEN-E) Regulation. Take advantage of this cooperation could ease the integration of its renewable energy potential.

Market liberalisation

With respect to issues of competitiveness and market integration, the UK has remained largely stable. The number of power-generation companies (representing 95%) has remained the same from 2005 to 2014 (17), as did the number of main power-generation companies between the same period (7). Yet the market share of the largest power-generation company increased from 20.5% to 25% between 2005 and 2014. Within the electricity sector, between 2005 and 2014 the number of main electricity retailers (companies) reduced from 7 to 6 with the overall number reducing from 33 to 32. Likewise, the number of main gas companies also fell from 7 to 6 between 2005 and 2014 increasing the market share of some of the retailers yet the largest retailers' market share decrease from 21% to 17%. Despite these steady figures, the European Commission considered that 'the concentrations of the UK's electricity and gas markets are low compared to the EU average and both markets have above average scores for choice of providers and actual switching rates' (ibis).

Energy Security

The energy security path taken by the UK over the period stands in the way of the expectations of the EU. Between 2005 and 2014 its energy dependence grows by 32% to reach a net import dependency around 45.5%. It is mainly due to the decline of domestic oil and gas production, especially from the North Sea. The rarefaction of the resources associated with an unfavourable[23] economic context. In the same time, the nuclear energy production declined in the 2000s. In 2005, the Nuclear Decommissioning Authority listed 20 sites to be retired. This concerning situation, results from 'years of dithering and indecision' according to Dan Lewis, Senior Infrastructure Adviser at the Institute of Directors (Mctague, 2015). The development of renewable energy, especially its off-shore capacity and the recourse to shall gas could put UK back on the right track. It is an absolute necessity when considering both the planned higher energy demand and the vulnerability of UK energy supplies exposed by the conflict between Russian and Ukraine.

Low carbon and efficient energy system

Between 2005 and 2013 the UK made significant efforts in the progression to a low carbon economy. The carbon intensity of the UK fell from 339.1 to 268.2 per tonne of carbon dioxide. This saving of around 20% mirrors the percentage increase of renewable energy in final gross energy consumption from 1.4% to 7% between 2005 and 2014. In comparison to other European countries such as France, Ireland, Germany, Italy and Spain, the UK measures poorly in this context with total primary energy consumption savings of 1.3%. According to the European Commission, 'UK has lowered its energy demand significantly since 2005 and has set itself an ambitious energy efficiency target for 2020. Its economy energy intensity has decreased since 2005 at a faster pace than the EU's, and is well below the EU average. Nevertheless, further efforts will be necessary to meet the 2020 target for energy efficiency. In terms of Decarbonisation, the UK anticipates to over achieve its 2020 GHG emission reduction target' (Ibis).

R&D

With respect to research and development, the UK increased the amount of spending to support renewable energy between 2006 and 2014 from €1 per capita to €4.9. The UK is above the EU average

[23] The 2014 oil crisis drove the price at a very level. It damaged the cost-efficiency of the energy facilities

regarding the research and innovation in energy and environment. This positioning could contribute to draw up UK as a technology leader, especially regarding offshore energies and Carbon capture and Storage.

Different components of the British energy system are aligned with the dimensions of the Energy Union. Nonetheless, it is complicated to measure to what extent these evolutions result from the Europeanisation process. The effects of the Brexit will certainly be revealing. Although the country will not be subject to the European climate energy objective, it is unlikely that UK gives up its leading position in the fight against climate change. Regarding energy, pursue the development of both renewable energies and the exploitation of shale gas seem coherent with the nationalist logic associated with the Brexit. Nonetheless, it is not incompatible with some dimensions of the Energy Union.

iv. Characterisation of the Europeanisation process

UK has been actively involved in the Europeanisation process over the last decade (See Figure 11). Even if somewhat grudgingly, UK has respected the legitimacy of the European Commission and attempted to use its influential power to assert its own interests. The country always pushed for great flexibility and emancipation within the European project. Reinforcing its position as a leader, it proceeded with a pace-setting bottom-up Europeanisation to promote its own climate change policy. The UK enjoys a leading positon in the Europeanisation process and contrary to Germany, which uses its power to shape an EU energy project modelled on its interests, the UK tries to limit the influence from the European Commission.

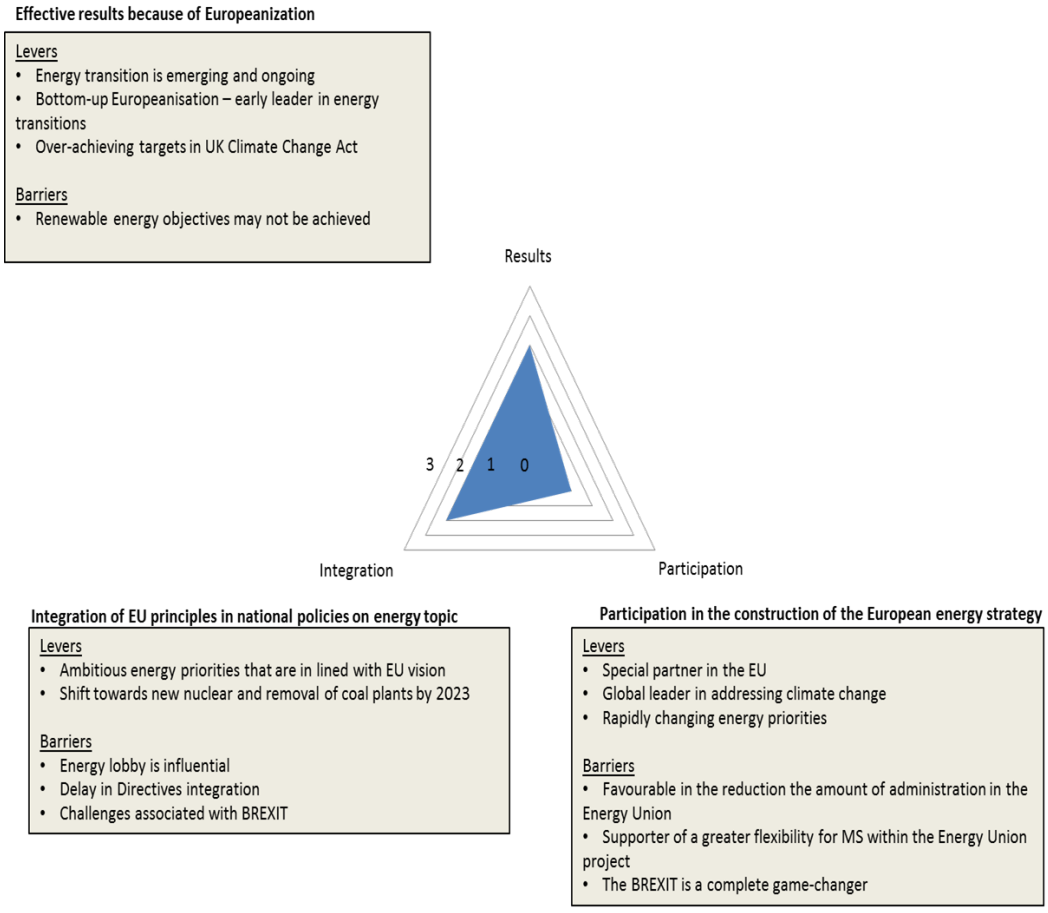

Figure 11: Characteristics of Europeanisation of the British energy system

The Brexit vote and its consequences will bring about major changes in the relationships shared between UK and EU institutions. The UK may opt for a collaboration strategy modelled on the Norwegian case. Otherwise, the country may have to content itself with a suite of bilateral agreements. Only time will tell. Nonetheless the Brexit vote does not mean that national energy decisions will not be influenced to some degree by European energy positions insofar as both UK and EU share common challenges.

4 Replicability analysis: Fostering Europeanisation

4.1 The Sustainable Development Tax Credit - France

Established by the French 2005 financial law, the Sustainable Development Tax Credit (Crédit d'Impôt Développement Durable – CIDD) aims to encourage households to favour energy renovations and renewable energy installations. Its objective was to contribute to the French Kyoto protocol commitment- meaning the reduction of energy consumption and greenhouse gases emissions. The CIDD allows owner occupiers, tenants and housing landlords, to deduct a certain amount of the upfront investment on the works undertaken in its main residence, from their income tax. In the event that the tax credit is higher than the income tax, the surplus is payed off to the households – favouring both high and low-medium social classes.

The tax credit is calculated on the basis of eligible expenses after deduction of other subsidies and caps at 16,000€ per fiscal household. Its value is defined according to energy performance criteria that are regularly reviewed to take the latest technical developments into account so as to focus the tax credit benefit on the most efficient measures.

CIDD achieved great success between 2005 and 2008 giving the opportunity to 4.2M people to undertake energy renovation measures for a total expenditure of 7.8b€. Although this financial mechanism was not perfectly distributed along the different social classes (more widely used by upper class people), its benefits were favourable for a large part of the population. In order to spread the use of CIDD, it is possible to accumulate CIDD with the "Eco Prêt Taux 0", a free interest loan which enable low social classes to initiate renovation works.

Besides, according to ScGES and Menfils - greenhouse gases modelling companies – the CIDD reduced the housing stock energy consumption by 8% by 2010 (compared to 2008) and greenhouse gases emissions by 7.5% compared to 2008.

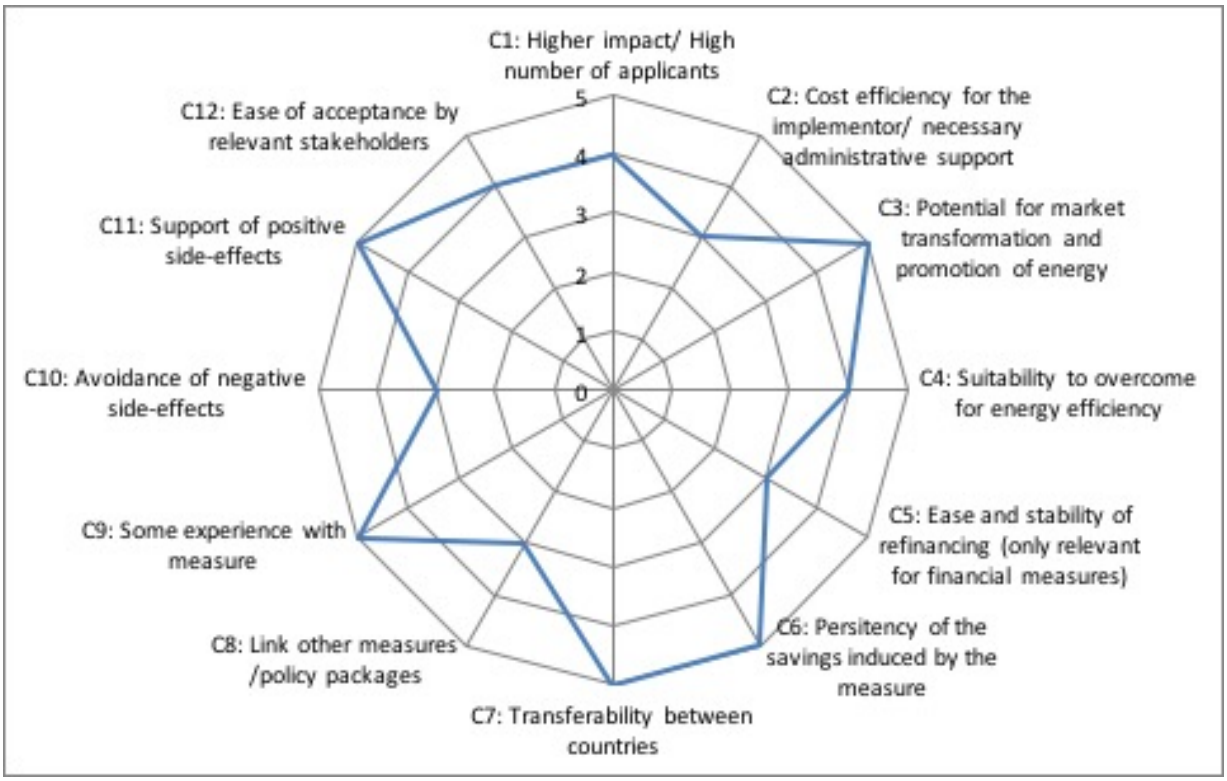

Figure 12: Radar graph measuring the success of CITE (Ex-CIDD) measure [FR] (after ODYSSEE-MURE Project, n.d)

Even if the CIDD has not been replicated yet in other Members States, this financial incitation achieved interesting results. The ODYSSEE-MURE project[24] gave CIDD a 4.1 grade over 6. Figure 12 directly extracted from ODYSEE-MURE website highlights not only the persistency of the energy savings achieved by CIDD and the boost given to promote renewable energy sector but also the transferability between countries of this mechanism.

The success of the CIDD is most likely reflected in its area of application. It was addressed to **different categories** of people, businesses and citizens, who could **choose between a great variety of energy renovations**. The instrument also favoured the industrial sector, which seized an opportunity to develop both technologies and market. The management of this mechanism by the government was also remarkable, the **renewing of the interest rate**, an **optimal coordination** of the financing mechanism and an **effective communication between the stakeholders** succeed in keeping the CIDD momentum until 2015. The recent transformation of CIDD into CITE "Crédit d'Impôt Transition Energétique" – Energy Transition Tax Credit – maintains the instrument on the same basis with a unique rate of interest, which could further contribute to the potential for replicability of this mechanism to other countries.

4.2 Special fund for energy efficiency in SMEs - Germany

According to a report published by KfW (Schwartz, 2013), 'small and medium-sized enterprises (SME) in Germany have been making good progress towards greater energy efficiency with the aim of reducing energy costs'. Nevertheless, there is room for improvement to face the main obstacles, i.e. the allocation of **funds for other investments**, the **insufficient capital** and the **lack of expertise** to implement energy efficiency measures. The Special fund for energy efficiency in SMEs[25], established in 2008, tried to provide a solution to this issue. It was created by the German Ministry of Economics and its main objective is to help SME to initiate energy efficiency measures. This fund consists in two separate programmes managed by the KfW.

The **first programme** targets the **lack of awareness** of potential measures: an independent energy efficiency consulting company informs the SME about their energy saving potential as well as ways/technologies that could be used to reach this potential. To tackle this informational barrier, the fund proposes: 1) an 2-day audit subsidised up to 80% with a maximum amount of 1,280€ or 2) a 10-day energy analysis to prepare a comprehensive strategy for energy saving measures subsidised up to 60% with a maximum amount of 4,800€.

The **second programme** consists in a **financing programme** offering to SMEs a loan with subsidised interest rates to undertake the necessary investments in energy conservation measures. The programme imposes quality criteria: 1) replacement leading to a minimum energy saving of 20% compared to the average consumption of the last three years, or 2) new investment that generates 15% energy savings compared to the branch average. SME can separately apply independently to both programmes but the best results are obtained when both programmes are combined. The instrument, with a total budget of €480 million, has achieved **great success** with 5,000 audits per year. Each SME, on average, implemented 2.8 out of 5.3 recommended measures, which has led to 1.4 terawatt hours (TWh) of energy savings per year - around **€80 million and 470,000 tCO_2 savings**.

Figure 13 summarises the key factors contributing to the success of this instrument – among them its **low threshold access**, the **support from regional partners** and the **high quality of the audits**. The fund has

[24] ODYSSE-MURE project aims at monitoring energy efficiency trends and measures in Europe, with two complementary databases: ODYSSEE on energy efficiency / CO2 indicators, including detailed data on energy consumption, activities and related CO2-emissions (around 1000 data series by country) and MURE on energy efficiency policy measures, including their impact (around 2000 measures).

[25] SME is defined by the EU as an enterprise with less than 250 employees and a turnover of less than €50 million or total assets of less than €43 million

succeeded to overcome certain barriers for energy efficiency while developing economic activity and creating jobs. The fund has a **transparent financing** structure as it is financed from the income of the EU Emission Trading Scheme and the State budget.

The fund received **international recognition**. Indeed, the ODYSSE-MURE project classified the fund as a successful measure with a score of 3.6 over 5. The International Energy Agency (IEA) also recognised its **coherence and effectiveness**. It seems a fund with high potential for replicability – see the score "transferability between countries" criteria which reach 4 over 5. Key factors for replicability are: 1) the selection of SMEs –prioritising those with **low expertise on energy efficiency**, 2) Energy Service Companies (ESCOs) should be able to provide **quality energy audits** -otherwise results won't be worthy, 3) the **interest rate** must be **adapted** to ease investment in the private sector.

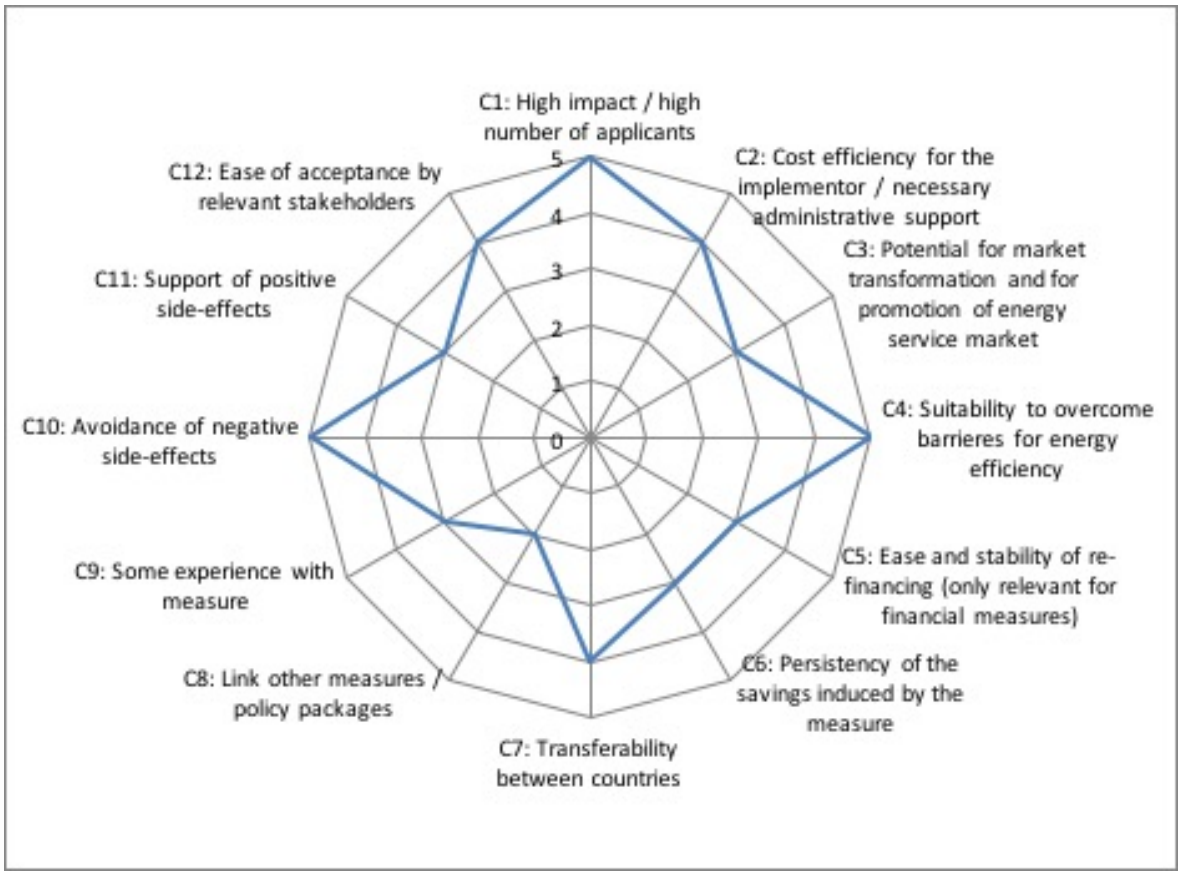

Figure 13: Radar graph of Special Fund for Energy Efficiency in SMEs [DE] (after ODYSSEE-MURE Project, n.d)

4.3 The Renewable Energy Feed in Tariff (REFIT) - Ireland

The Renewable Energy Feed in Tariff (REFIT) is a **national price structure support scheme**. The previous similar scheme, the Alternative Energy Requirement (AER) was widely recognised at the time as not being fit for purpose and efforts were made to **look into support schemes in other MS** (Guidi and Ó Gallachór, 2004; Guidi, 2005) with a particular emphasis on adapting Spain's support structures (Ó Gallachór *et al.*, 2009). For Ireland, the regulated tariff was to be structured along similar lines to Spain resulting in lower cumulative profits for the renewable energy sources (RES-E) generator, but higher internal rate of return (IRR) (McCarthy, 2014 in Ó Gallachór *et al.*, 2009). REFIT guarantees a fixed price for various RES electricity producers and is funded through the Public Service Obligations (PSO) levies (essentially a tax on consumers to support RES start-ups), under the S.I. No. 217/2002 - Electricity Regulation Act 1999 (Public Service Obligations) Order 2002. The PSO levy was itself initially designed to support the ailing state-sponsored peat industry and during the economic boom years from the 1990s to the mid-2000s. Up until the economic crisis, post-2008, it was to this sector that a majority of the funds were directed.

Successive Irish governments have favoured a rather limited competition-based approach that has focused primarily on wind energy production. Despite the sometimes mixed results that their implementation of the pricing structure has generated over the years, the government has remained wedded to this approach. It was eventually forced to reconsider its renewable energy strategy and switch to a feed-in tariff model (REFIT) in order to meet its 2010 targets as set down by the European Union. Feed-in tariffs (FITs) offered a more secure alternative to wind energy producers than earlier support schemes, though the competitive elements associated with earlier support schemes were retained. It has become the dominant support instrument in the European Union, despite initial ideological resistance to it from the European Commission and is now a key instrument for operationalising the EU's decarbonisation agenda.

Miguel Mendonça (2007) has defined a feed-in tariff as: "essentially a 'pricing law', where the rates paid to producers of electricity from renewable sources are set in law, and calculated to provide sufficient profitability for the investment. There is usually a set period over which this payment will be received" (Mendonça, 2007: xiv). This rather succinct explanation belies its inherent versatility—both in terms of application and design—and as Mendonça has argued FITs in all their various designs have proven to be more cost-effective and ultimately more successful when compared to many of the other support schemes implemented prior to it. This is certainly true when compared to the tender model previously applied in Ireland before 2006; though that system still outperformed the quota systems championed in the UK and elsewhere. Working in a similar way to a subsidy, in its simplest terms, a FIT reduces the economic risks RES-E producers are exposed to. This can often come at a cost, however, to the incumbent electricity utilities and to the electricity consumer, but again this depends on how it has been initially set up.

The true effectiveness of FITs in driving the decarbonisation agenda has been alluded to in the work by Ragwitz *et al.* (2005) who show it to have outperformed all other mechanisms that operated in ten applicable Member States during the period 1997 to 2004 (See Figure 14). It is noteworthy that Ireland stayed stubbornly true to the tendering model, despite its failings, right the way through the period 1997-2005. Other Member States adapted to the Feed-in Tariff model much earlier by comparison, with Germany, Spain and Denmark implementing some form of FIT as early as 1997 (Ragwitz *et al.*, 2006). The authors also attribute long-term and stable policy environments as necessary requirements to promote rapid RES-E deployment. Indeed, Mendonça supports Klein *et al.*'s (2006/2010) assertion that a good FIT design should take into account the varying electricity generation costs for the different RES-E technologies. This technology-specific approach to tariff levels, they argue, is essential to maximise both generation and the range of technologies, as well as to avoid rent seeking by producers.

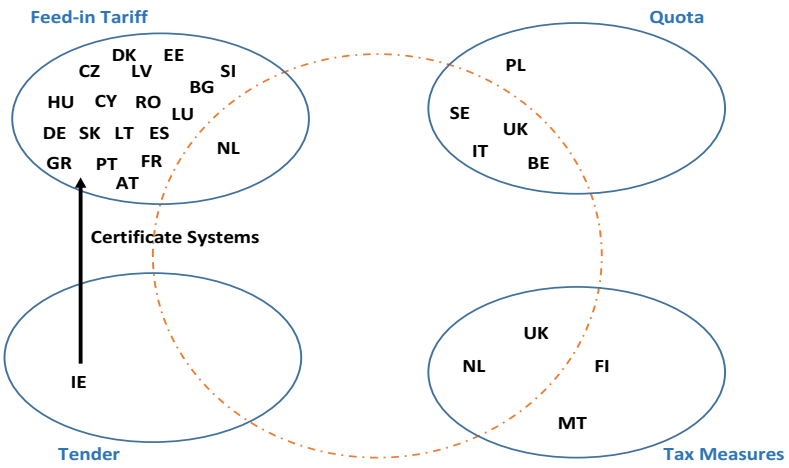

Figure 14: Overview of renewable electricity support schemes in EU27 and Ireland's shift from a tendering system to the Feed-in Tariff model (Ragwitz *et al.*, 2006)

The idea of avoided electrical loss in the national grid due to installed RES-E generation is often referred to as the "Portuguese Approach". RES-E producers in Portugal are entitled to monthly payments calculated from a mathematical formula based on the prevented costs arising from the existence of RES-E power plants (Klein *et al.*, 2006/2010). Most of the other Member States have opted for less complicated administrative structures. In Ireland, the thinking has been very much focused on a stepped tariff design where payment is differentiated depending on each of the targeted RES-E sources. This design was again copied from other Member States, including Portugal, where flexibility in terms of market supports has been considered a premium. This approach factors in the generation costs without paying particular attention to other externalities. There are certain nuances to this approach with tariff levels dependent on plant size that in effect differentiate between what can be considered commercial and domestic wind turbines. While the advantages of this type of tariff can outweigh the disadvantages, one must consider a note of caution regarding its application, especially in **terms of reduced transparency and an unintended increase in uncertainty for investors** given the complicated pricing structures involved. For instance, investors must consider a technology that is subject to different levels of support depending on the size of generating plant being used, etc.

While it may be **difficult to suggest** that this tariff is a **good example of bottom-up Europeanisation** per se, it does **have the potential** (when implemented correctly) to **provide communities with access to the financial capital** that would otherwise be unavailable to them, for purchasing affordable microgeneration plants. However, this ultimately depends on the willingness of governments to endorse, and implement such policy.

4.4 White Certificates – Italy

In 2004, Italy introduced White Certificates, also known as 'Energy Efficiency Certificates' scheme through the Ministerial Decree of 20th July 2004. The legislation regulating White Certificates has been progressively modified in order to adapt it to the changes occurring at the international level. Indeed, Ministerial Decree 28th December 2012 and Legislative Decree 102/2014 have updated the legislative framework concerning the mechanism to include new measures and to make it coherent with the objectives outlined by the energy efficiency Directive 27/2012/UE. According to Art. 7 of this Directive, MS must establish an energy efficiency regime. This is necessary to achieve the goal of final cumulative energy saving equal to 1.5% of the average annual energy sales to consumers by 2020. At the same time, modifications are necessary to avoid overlapping with other incentives that, as the National Energy Strategy (NES) also stresses, prevent from a correct and coherent allocation of public resources aiming at increasing energy efficiency (GSE, 2015). NES has fixed the objective of saving 20 Mtep by 2020 in accordance with the 2020 climate and energy package and 5.5 Mtep/year should be saved through the White Certificates mechanism (Ibis). Furthermore, it is worth noting that this mechanism has been introduced in order to support the medium and high capital intensity initiatives aiming at introducing new technologies on the market that cannot be supported only through the instruments already provided on the market (Ibis).

White Certificates are tradable instruments giving proof of the achievement of end-use energy savings through energy efficiency improvement initiatives and projects whose targets are electricity and natural gas distributors. Under the scheme, electricity and natural-gas distributors are required to achieve yearly quantitative primary-energy saving targets, expressed in Tonnes of Oil Equivalent[26] (TOE) saved. In particular, White Certificates concern electricity, natural gas, fuels used for transportation and other kinds of fuels (ENEA, no date). The Gestore dei Servizi Energetici (GSE) is the responsible body for the evaluation process and the certification of the savings obtained with energy efficiency projects (Ibis). White

[26] A ton of oil equivalent is a "Unit representing energy generated by burning one metric ton (1000 kilograms or 2204.68 pounds) or 7.4 barrels of oil, equivalent to the energy obtained from 1270 cubic meters of natural gas or 1.4 metric tons of coal that is, 41.87 gigajoules (GJ), 39.68 million Btu (MMBtu), or 11.63 megawatt hours (MWh)

Certificates play an important role in the achievement of the Italian energy objectives. They strongly contribute to the reduction of energy consumption.

The amount of money that is possible to save with White Certificates depends on several factors like the energy savings through the implementation of the system and the value of the certificate on the market. On average, a kW saved corresponds to a White Certificate whose price on the market is around 110 euro. In 2015, 999 Proposte di Progetto e Programma di Misura and 10.763 Richieste di Verifica e Certificazione dei Risparmi for which the GSE has given 5 million titles of energy efficiency (GSE, 2015). Lombardia is the most active region in the mechanism, followed by Veneto, Piemonte and Emilia-Romagna. In southern Italy the most active regions are Puglia, Campania and Sicilia (Ibis).

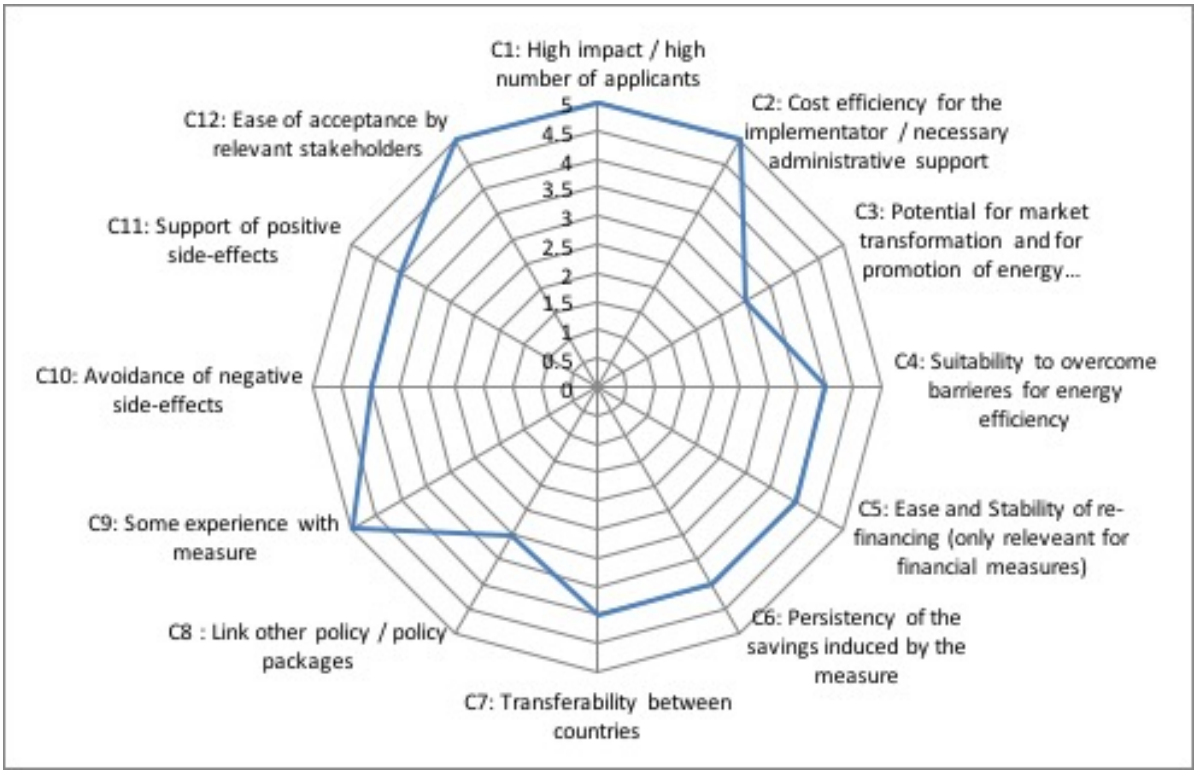

Figure 15: Radar graph measuring the success of White Certificate measure [IT] (after ODYSSEE-MURE Project, n.d)

Italy was the first country in the world to use White Certificates to incentivise energy efficiency (ENEA, no date). Later, France used a similar mechanism. This mechanism has been a success for market based systems both for limiting the domestic demand of energy and as a model to increase energy efficiency of the whole national energy system (GSE, 2015). Figure 15 summarises the success factors of the White Certificate Scheme. It is interesting to point out the high impact of this measure which benefits from a great acceptation and a facilitated implementation. To a lesser extent, ODYSSEE-MURE acknowledges the good level of replicability of this mechanism. For this reason, similar schemes could be replicated in other countries. It could be achieved through different manners such as tax deduction schemes, guarantee funds or incentives for interest (schemes that finance the interest rate given by banks, thus making convenient for third party financing and energy performance contracts).

The good results obtained with this mechanism have been recognised by the European Commission which has deeply studied this mechanism. Directive 32/2006 defines White Certificates as one of the instruments that is possible to use to achieve the 2016 objective of reducing energy consumption by 9% per year. In

conclusion, White Certificates are an important incentivizing scheme for energy efficiency that gives excellent results in terms of reduction of consumption and energy costs.

4.5 Urgent measures to face emergency in housing and energy poverty – Spain

The Catalan Law 24/2015 regards the urgent measures that need to be taken to face the housing emergency and energy poverty (DOGC, 2005) in the region. This law was an initiative that emerged from citizens (unusual in the Spanish energy system). A similar initiative was presented at Spanish national level in 2012 but this proposition only concerned housing emergency, which collected support from 1.5 million signatures. After the economic crash in 2008 and its subsequent social crisis (jobs lost, non-payment of mortgages, rents and bills), this initiative was intended to facilitate the access to a house for those who have lost it or ensure the access to basic services supply, such as electricity, gas and water. When the initiative arrived to the Spanish parliament, the government at that time blocked its complete application by the approval of the law 1/2013 which diluted the core of the Popular Legislative Initiative.

After this unsuccessful attempt at Spanish level, the Popular Legislative Initiative (ILP) was extended and presented to the Catalan Parliament by the entities Plataforma Afectados Hipoteca - PAH (Affected Mortgage Platform), Drets Econòmics Socials i Culturals - DESC (Economic, Social and Cultural Rights Observatory) and Aliança contra la Pobresa Energètica (Alliance against Energy Poverty) (ILP Habitatge, 2016), as there was no real political initiative to fight against the vulnerability of the fundamental rights regarding housing and basic services (electricity, gas and water) access.

The 3 above mentioned entities needed to collect a minimum of 50,000 signatures so that the Catalan chamber could start discussions. The initiative reached 143,000 signatures in one year and the law was approved the 23rd July 2015, by unanimity.

The purpose of the law was to face the 2008's economic crisis and its consequences in the Spanish and Catalan society: mortgages executions, difficulties to pay the rent, the low share of social buildings within Spanish cities, existence of many empty buildings in hands of financial entities, etc.

Regarding energy, in 2011 the Catalan Ombudsman reported that 193,000 families in Catalonia were not able to pay the bills in order to maintain the house comfort temperature. In addition since 2008, the electricity and water bills increased by 60% and 66% respectively, while the 5 major electric utilities have obtained more than 7,600 M€ of benefit, similar benefits obtained by the 5 major financial entities in Spain (APE, 2016).

The law objective is very wide. Besides addressing fuel poverty, it also covers the fundamental right of access to a house and ensures that no evictions are executed due to mortgage's non-payments. Among others, the law guarantees that:

- Public administrations must guarantee the access to basic services as potable water, electricity and gas to the vulnerable families in situation of residential exclusion.
- Public administrations have to reach the necessary agreements with the suppliers of electricity, water and gas; in order to guarantee that these grant repayable aids to people and families in residential exclusion risk or offer them substantial discounts.
- Establishes a protocol which implies the obligation of communication to the social services and their intervention to avoid services' cuts when non-payment is due to lack of economic resources[27].
- Utilities have to inform of the rights related to energy poverty that this law establishes, when they send a notification of service non-payment.

The promoters of this legislation have reported that, six months after the approval of the legislation, utilities used to cut services without notifying the social services, neither telling the consumer the existence

[27] In order to achieve this, suppliers that have to proceed to a service cut must request a report from social services to know if that family or person has risk of residence exclusion, if it does then the supplier must guarantee the service supply.

of this present law, which could help them to avoid services' cuts. In April 2016, the Spanish government brought this legislation (law 24/2015) in front of the Constitutional Court (Tribunal Constitucional - TC), which suspended the main articles of the law with the pretext that the Catalan government has no competences on those matters. The reasons behind this decision could be mainly due to the political tense situation between Catalan and Spanish governments. Since 2011 and until May 2016 the Spanish Government has appealed against 34 Catalan norms to the Constitutional Court and the Catalan Government has done the same to 51 Spanish laws (ARA Barcelona, 2015).

On the other hand, some Catalan city halls have shown its commitment to the legislation and they publicly announced that they will report and penalise utilities that are not in non-compliance with the law. In April 2016, 3,770 families benefited from 1,1M€ provided by the Catalan Government to pay their bills and debts and 29,144 vulnerable families had not suffered services' cuts (Tort, 2016).

The success of the replication relies on the particularity of its policy making process, the active participation of citizens on the fuel poverty topic, which is a high priority for the European Union.

The law was proposed and approved acknowledging the economic difficulties of many households in Spain, but it is replicable to many countries with similar situations in the European Union. The most adequate countries could be those with larger unemployment rates and so hard economic situation, but it could be applicable to any country where families struggle to have access and pay for basic services. Countries with a social political culture are the most likely to replicate this policy. To ensure the long-term success of the policy in any EU Member State a clear commitment of all actors involved is needed namely the national government, the local authorities and the suppliers.

In this context, new suppliers are appearing in the market, such as electric retailers (SOM Energia or HolaLuz) more conscious of the energy poverty matter and closer to current people's needs. They provide advice to their customers struggling to pay their bills by providing them information on which procedure to follow in these cases (Garcia Fuster, 2016).

It represents a good example of a bottom-up initiative that is completely aligned with a European energy priority of ensuring access to basic services and fighting against fuel poverty. The Law 24/2015 tackles exactly the fuel poverty issue, among other issues that affects or could affect the most vulnerable citizens in Europe. In Catalonia it hasn't accounted with the explicit implication of large suppliers, so the law is not fulfilling its expected goals, however public entities and local authorities have demonstrated its strong commitment.

4.6 The Climate Change Act 2008 - UK

The UK Climate Change Act 2008 is the first legislation in the world to call for a legally-binding cap on carbon emissions and greenhouse gases by 80% by 2050 from 1990 levels (Dagoumas and Barker, 2010; Lockwood, 2013). The Act grants the Secretary of State for Energy and Climate Change the necessary powers and responsibilities to introduce measures to achieve the reduction targets to transition to a low-carbon economy (DECC, 2009). These responsibilities include putting in place measures that meet the five-year period carbon budgets and reporting on risks posed by climate change to the UK. An independent body, the Committee on Climate Change, was created under the Act to provide advice to the Government and outline a series of carbon budgets that are designed to place a limit on the amount of carbon emissions produced. The Act establishes a new approach to managing and responding to climate change in the UK, with real progress made by 2020 resulting in an emissions reduction of 34% (OPSI, 2009).

The UK Climate Change Act 2008 represents best practice in a national government approach to addressing climate change and paving the way for a low-carbon transition to sustainability, facilitating changes to the energy system in subsequent energy policies. Examples of these include the Low Carbon Transition Plan 2009; the Energy Act 2010; the Energy Efficiency Strategy 2012 and the Energy Act 2013. The Act has

received notable international recognition for outlining a comprehensive national strategy to address climate change. The Act addresses a major environmental issue and threat that is often a difficult policy problem due to low political salience and immediate costs (Lockwood, 2013).

The Act places a legally-binding cap on the amount of greenhouse gases to be reduced by 2050. This 80% reduction of emissions has been accepted into law. To ensure that this target is met, the need to establish carbon budgets set by the Committee on Climate Change supports the overall target (Lockwood, 2013). Placing an overall target on the reduction of greenhouse gases in the long term provides the UK Government with a platform to launch further policies that support energy transitions and sustainability. This is a significant advantage of the Act that secures long-term considerations of addressing climate change.

The Committee on Climate Change is an independent body that supports the work of the UK Government with respect to monitoring and reporting on addressing climate change as well as advising the Secretary of State for Energy and Climate Change regarding carbon budgets. The role of the independent body provides the UK Government with impartial and scientific advice to support the development and implementation of climate policy. As such, other EU Member States should consider the role that such a body could contribute to wider policy creation. Expert advice on the optimum trajectory to 2050 comprises multiple components of sustainability that consider different elements of the economy and society that are applicable in further policy and practice discourses.

One of the significant aspects of the Climate Change Act relates to the Climate Change Act placing a duty on the Secretary of State for Energy and Climate Change to focus on addressing the impacts of climate change through adaptation measures. This ensures that the UK Government must monitor and report on the risks of climate change and publish an adaptation programme every 5 years. This is a significant strength of the Act in the sense that the policy does not solely focus on mitigation, a criticism of previous climate policies (Prins and Raynor, 2007).

The Act allows for devolved administrations to be given powers to set up their own emissions trading schemes relating to greenhouse gases through secondary legislation. This element of the Act is beneficial for countries similar to the UK that are comprised of a union of nation states. Specifically, the trading schemes proposed by the Act allow for schemes that limit activities that lead to emissions of greenhouse gases, directly and indirectly. The schemes developed by devolved administrations must seek the advice and approval of the Committee on Climate Change, further reinforcing the need for an independent body advising the government on appropriate implementation of the Act.

The Act also indicates other measures that should be implemented to reduce greenhouse emissions that include waste reduction schemes; charges for single use carrier bags; renewable transport fuel obligations; carbon emissions reduction targets; and carbon offsetting. These additional provisions in the Act outline that there is a need to consider wider industries (such as waste and transport) that contribute to the UK emissions profile. In doing so, it allows for the UK to implement the Act across all sectors of industry. Furthermore, the UK Government and civil estate are also required to make steps on improving the efficiency and contribution to sustainability. It is evident that these lessons have been applied in wider contexts within the European Union and in national contexts such as the climate change acts of Bulgaria and Denmark. The Act itself has sparked a growth of support within business and energy industries that are increasingly transitioning to sustainability. Previous policies including the Energy and Climate Change Act 2006 have supported the current Act while subsequent policies including the Community Energy Strategy 2012 and the Energy Act 2013 have supported the national discourse for addressing climate change in the UK. Investments made by the former DECC that was abolished following Theresa May becoming Prime Minister supported the growth of renewable energy installations across the UK. Further successes that underpin this policy allows the devolved administrations of Scotland, Wales and Northern Ireland to

integrate the Climate Change Act in ways that are appropriate for them and build on the policy as the administrations see fit.

Yet there are weaknesses in the policy that should be addressed if replicated in other EU MS and beyond. While the Act has produced some institutional innovation and positive policy feedback effects, Lockwood (2013) states that investment effects are incomplete and the Act has failed to produce political certainty and investor confidence. Pielke Jr (2009: 6) criticises the policy itself, labelling it as "backwards" given that the structure of the Act begins with setting out the target but only later indicates how the target might be achieved "with no consideration for whether the target implies realistic or feasible rates of decarbonisation" (Pielke Jr, 2009: 6). Furthermore, simply making progress to the targets requires actions of a magnitude that seem practically impossible for the UK to achieve a carbon efficiency of its economy equal to that of France in 2006 in a time period considerably less than a decade (Pielke Jr, 2009). Because there is little research and practical insights around how fast a large economy can decarbonise, any policy or policies focused on decarbonisation will have to proceed incrementally with constant adjustment based on the proven ability to accelerate decarbonisation (Anderson *et al.*, 2008). Yet Pielke Jr (2009) concedes that the UK has demonstrated rates of decarbonisation higher than those of other large economies. Consequently, while the Climate Change Act is a model of best practice that could easily be replicated across other European member states, these issues should be considered indrafting future climate policy.

4.7 Key success factors and potential replicability

The study of the above mentioned policies at national level is summarised in the following table to identify the key factors that have been contributed to the success of these policies in its different contexts of application.

Table 14: Key success factors of national policy documents

	Key success factors and potential for replicability
The sustainable Development Tax Credit – France	- Wide area of application: households, businesses and industrial sector - Wide variety of renovations - Smooth coordination - Regular updates on technical developments - Unique interest rate - Communication among stakeholders
Special fund for energy efficiency in SMEs – Germany	- Two programmes addressing lack of expertise/awareness and financing - Low threshold access - Support from regional partners - High quality of the audits - Transparent financing structure - Selection of applicants – prioritizing those with low expertise on energy efficiency - Interest rate adapted to ease private sector investment
The Renewable energy feed in tariff – Ireland	- Ensuring sufficient profitability for the investment - Inherent versatility: in terms of application and design - It reduces the economic risks to RES-E producers - Long-term and stable policy environments - Take into account varying electricity costs of different RES-E technologies to avoid rent seeking by producers - Transparency of the instrument - Avoid complicated pricing structures and administrative burden
White Certificates – Italy	- Avoid overlapping with other incentives - Adapt the instrument to EU changes at international level and to the evolving

	Key success factors and potential for replicability
	energy objectives - Target new technologies that cannot be supported other ways - Monitor the value of the certificate in the market - Complementarity with other instruments as tax deduction schemes, guarantee funds or incentives for interest
Urgent measures to face emergency in housing and energy poverty – Spain	- Context of deep economic crisis, large unemployment rates, social exclusion and increasing fuel poverty - Strong commitment at regional level of all actors involved: government, local authorities, citizens and suppliers - Good communication among stakeholders - Active participation of citizens
The Climate Change Act 2008 - UK	- Outline a comprehensive national strategy to address climate change - Establish long-term, achievable targets for GHG reductions - Ensure the adapted carbon budgets to support the ambitious targets - Independent body to support UK government on the Act deployment with technical expertise - Periodic reporting on mitigation and adaptation programme – duty on the Secretary of State for Energy and Climate Change - Empower administrations with flexibility to set their ETS systems through secondary legislation (replicability with similar structure – union of nation states) – reviewed by the independent body - Large scope including wider industries and its related sectors, to have a comprehensive approach - Coherent and stable policy on climate change for many years

All the selected policies have been successfully implemented in its national context. By analysing the key success factors of each case, it is possible to extrapolate some good practices to be taken into account for replicability. However, further studies on the national energy context in which the different policies and instruments have been developed are recommended to ensure a successful replicability of the measures.

5 Discussion

Europeanisation is a dynamic process influenced by the actions of several actors: the European institutions, in particular the Commission, lobbies and the MS themselves. The conceptual framework analysed in this study shows that all MS are involved in Europeanisation. Characterising the typologies of established Europeanisation processes results to be more complicated. The variety of actors, the existence of various power struggles and the lack of information on certain processes may explain this complexity, and deeper look at the lifecycle process of EU directives illustrates this. Directives are initiated at the EU Commission, but their adoption requires the approval of at least one of the two other EU institutions (Council or Parliament). Indeed, the Parliament, if consulted, can intervene in the process via three main procedures:

- **Consultation**: Parliament can adopt, reject or demand the amendment of the proposal;
- **Consent procedure**: Parliament can only adopt or reject the proposal;
- **Co-decision**: Parliament is associated with the Council to make recommendations and amend the proposal.

On the other hand, the Council systematically investigates directives and decides on their validation. In addition, it is important to take into account the 'non institutional' influence operated by the lobbies in this 'institutional' power game. This is why the transposition of directives has been one of the policy making processes included in this analysis.

Within this political struggle, the levels of influence and the capacity of negotiation of the different MS studied vary. The construction of the Energy Union has been another policy making process included in the analysis as it is a recent example that reflects the political power of MS. Germany, France and the UK have proven to have more political influence than other MS, which have been more impacted by economic or political crises.

When a directive is approved, its implementation via transposition into the national PLS is not straightforward. All MS are subjected to top-down Europeanisation. Nonetheless, the inherent nature of directives grants MS with room for manoeuvre in the measures implemented. While there is an obligation to produce results, the means to achieve them is at the MS convenience. In some cases, the legislation can be largely discussed through intense national parliamentarian debates and negotiations.

Other national factors - economic, political or institutional – also have the capacity to influence the national energy landscape. This study has reviewed the alignment between the European energy vision supported by the directives and the national policy and legal system, to characterise the resulting top-down strategies, namely accommodation, retrenchment, inertia or transformation. The analysis of one transposition process does not reflect or characterise the transposition process of one country, but provides insights on specific process. On the other hand, MS have the capacity to influence European policies through bottom-up Europeanisation. The analysis has provided insights on two main strategies. On one hand the pace-setting approach, the replication of domestic policies at European level and subsequently adopted by other MS. As an illustration, the promotion of nuclear energy in France and UK is a key factor that contributes to the achievement of the European energy policy goals (French Embassy, 2012).

The foot-dragging approach is the other identified type of bottom-up Europeanisation. This is represented by the blockage or delaying of costly policies in order to stop or at least reduce the attempts of some MS to impose their policy models at the European level. The French negatives during their negotiations with Spain and Europe on the interconnection issue are an example of this approach. Horizontal Europeanisation was the least common type of Europeanisation identified in the study. MS rarely integrate information about the origin of the replication in its political discourse. The different Europeanisation processes identified reflect that the European energy project is a driver of the national transition of the energy system. It develops a long-term vision detailing the objective and the time framework, which has been designed as a large and non-excluding corridor (see Figure 16) to encompass all MS energy systems. It is also malleable - to some extent - since it is shaped by European institutions, lobbies and MS.

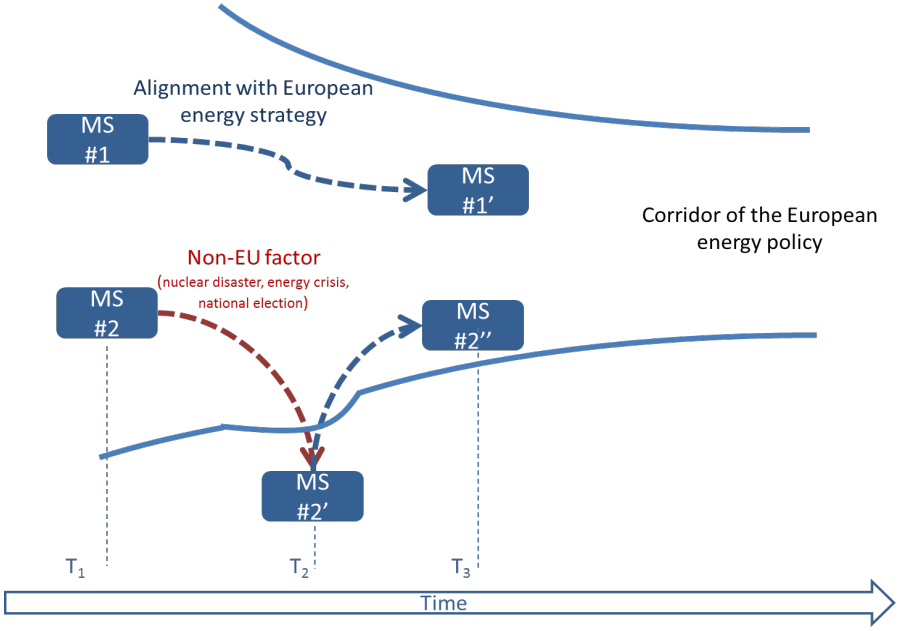

Figure 16: Corridor of the European energy policy

Unexpected events can also have important impacts on national energy strategies. The Fukushima disaster, the economic crisis, etc. have been strong game changers pushing MS "outside" the European vision. The German nuclear phase-out decision and its subsequent increase of coal consumption and GHG emissions is an illustration. These types of decisions generally result in quicker transformation of the national energy policy than the one that could have been achieved by the alignment with the European energy integration. Via the power game, MS would attempt to deform the corridor to defend its own interests. Nonetheless, the integration of the European regulatory texts will progressively take the MS back to the corridor defined by the European strategy. Figure 16 aims at representing this context.

6 Conclusions & Recommendations

In can be argued that the energy systems of Member States' are all integrated to some extent. In order to meet current global uncertainties, such as energy security and climate change, the transition toward a low carbon economy requires a meaningful, coherent and comprehensive EU energy policy. One which will effectively ease the transition process and establish the main strategic goals for Member States. The creation of just such a EU energy policy is shaped largely through Europeanisation.

The conceptual approach taken in this document in studying Europeanisation is based on the characterisation of the Europeanisation processes identified above. Europeanisation is a dynamic process that results from numerous influences. This study argues that Europeanisation contributes to carving out a corridor in which Members States operate the transition of their energy system and integrate the different aspects of the Competitive, Secure and Sustainable framework and Energy Union project. Nonetheless, the national characteristics of energy systems and international events could appear as major game changers that have a direct impact on national energy strategies. Taking into account the result of the analysis carried out, this document proposes recommendations that could promote the alignment of national policies with the European energy strategy.

Recommendation 1: The energy topic should continue to be a shared competence between the EU and MS.

A completely top-down approach – with the European Commission having total competence on the MS energy systems – does not seem to be a possible alternative. The diversity of approaches to the energy system at MS level, its impact on MS economy and the risk of other countries leaving the EU project highlight some of the current difficulties of this approach. A shared competence between the EU and MS appears to be an effective solution to face common challenges related to the energy and climate sectors.

Recommendation 2: Finding common areas of understanding among MS to progress in the definition of the EU energy strategy is essential.

As of now, the European Commission has used the market and climate to dictate energy policy. Other topics to explore for common understanding between MS could be:

- Reinforce the role of consumers via defining an EU prosumer status. It could legitimate renewable self-consumption for instance.
- Reduce progressively the share of the most polluting production capacity in the MS. Targeting directly a specific source, i.e. coal, nuclear, gas, etc. does not seem to be a good strategy as it penalises particular countries while favouring others.
- The research and development sector could also be used to find a common understanding among MS. The European entity could propose a certain share of the national budget to be dedicated to sustainable R&D. R&D on climate and market could be used as a lever to indirectly shape the national energy landscape and reflect the European Commission's strategy.

Recommendation 3: Pursue the construction of the Energy Union to ensure a coherent and comprehensive project.

A project that integrates the different aspects of energy for all MS is a complex negotiation process, but it allows different national realities to coexist in a wider European vision. For example, both German and French energy strategies can claim to match certain aspects of the Energy Union. Defining a broader political vision is critical in order to include every MS before making a step forward toward a more accurate energy project.

Recommendation 4: Reinforce consultations between EU Member States on the energy topic.

Consultations on the energy topic open to other MS could enhance dialogue between the different MS. The elaboration of different energy strategies at national level is not necessarily problematic, but it should be discussed and well-coordinated, and could become an arena for horizontal Europeanisation.

Recommendation 5: Introduce flexibility on the energy and climate targets to adapt to the energy context at international level.

Due to globalisation, geopolitical and economic events have an impact worldwide and influence energy systems. The EU energy framework has set rigid targets to progress in the fight against climate change. However, the process would be eased if flexibility in EU energy policies was added to reach these targets in the event of a major crisis or natural disasters.

Recommendation 6: Extend the timeframe for transposition to ensure a better translation of the EU directives.

Although the transposition process has been improved by several MS, the analysis in this study shows that the number of infringements is still substantial. These are not generally the consequence of a retrenchment strategy operated by MS, but are often the result of administrative delays. Consequently, an extension of the transposition timeframe could be beneficial to ensure a better translation of the directives.

Recommendation 7: Enhance dialogue between the EU and MS to improve the transposition process.

New communication means between the European legislative machine and its national counterpart could ease the transposition process by providing guidelines, supervision, best practices, etc. Information about the barriers other MS have encountered and how MS have overcome specific problems could be beneficial to the whole process. In addition, to ensure effective results, the Commission should check the actual decree-laws implemented at national level instead of the National Implementing Measures - the regulatory text published in the National Official Journal. Last but not least, in the carrot and stick approach, the Commission uses only the stick through fines.

Recommendation 8: Further studies of Europeanisation processes could address their impact at EU level and other countries.

This study focused on the interactions between MS and the EU. Further information on Europeanisation processes could be obtained by analysing the influences between the Commission, the Council and the Parliament. Furthermore, the analysis of other countries, such as Denmark or Poland could bring interesting insights to this study.

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