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The example of the European
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Abstract

This paper studies regulatory convergence in the European electricity sector against a series of theoretically informed hypotheses. The paper is grounded in long-term empirical research in 17 European countries (15 EU plus Norway and Switzerland).¹ The paper concludes that convergence in the European electricity sector is observable both in terms of the overall conceptual framework of regulation, as well as in terms of regulatory institutions. Also, the European Union appears to be the driver of such convergence.

Zusammenfassung

Dieser Text untersucht die Konvergenz der Regulierung im europäischen Elektrizitätssektor auf dem Hintergrund von einer Reihe von theoriegestützten Hypothesen. Er basiert auf einer langfristigen empirischen Forschung in 17 europäischen Ländern (EU 15 plus Norwegen und die Schweiz). Der Text kommt zum Schluss, dass Konvergenz im europäischen Elektrizitätssektor beobachtet werden kann, und dies sowohl im Hinblick auf den generellen konzeptuellen Rahmen, als auch was die Regulierungsinstitutionen betrifft. Auch, scheint die europäische Kommission die Treibkraft dieser Konvergenz zu sein.

Résumé

Cet article étudie la convergence de régulation dans le secteur européen de l'électricité contre une série d'hypothèses théoriquement fondées. L'article se base sur une recherche empirique de longue haleine dans 17 pays européens (EU 15, plus la Norvège et la Suisse). Il conclut que la convergence dans le secteur européen de l'électricité est observable à la fois pour ce qui est du cadre conceptuel de la régulation et pour ce qui est des institutions de régulation. En outre, l'Union Européenne semble être le moteur principal de cette convergence.

¹ This paper is a simplified and condensed version of a study to be published in a book on energy regulation, markets, and business strategies under the supervision of Prof. Atle Midttun.

Introduction

In this paper, we will explore the hypothesis of regulatory convergence in the electricity sector. Basically, we want to assess whether a certain convergence of regulatory approaches (section 1) and institutions (section 2) can be observed in the 17 countries selected, and which factors (chapter 3) can explain this convergence today and in the near future.

With Bennett (1992: 219) we consider convergence as a process of “becoming” rather than a condition of “being” more alike. In this perspective, we are not so much interested in assessing similarities but in identifying elements where dynamics toward greater similarities in the future can be expected in electricity regulatory frameworks. Respectively, we will try to track down diverging dynamics that might lead to greater differences across regulatory frameworks. Since this study is among the first of its kind and since a long time perspective is still lacking, these discussions are still largely exploratory.

To start, let us sum up here the converging and diverging dynamics that we can observe in the electricity sector. Indeed, at least two converging dynamics can be identified when analyzing electricity regulation in the 17 countries. The first pertains to the post-liberalization regulatory frameworks, while the second refers to regulatory institutions.

As we will show, there are three different models of liberalization in Europe, which largely influence the shape and content of the post-liberalized regulatory frameworks on substantial issues such as public services obligations (PSOs) and environmental measures. This observation tends to indicate that political and institutional variables represent important factors explaining differences among countries. These factors can in fact slow down or even prevent the emergence of convergence dynamics on the long term. However, one element of these regulatory framework is widely shared and indicates the presence of a convergence driving force in spite of the importance of these models on the regulatory design. Indeed, the almost universal diffusion of the regulated Third Party Access model (except for Germany) is the most spectacular convergent feature, and as such allows to think that other elements of the regulatory frameworks might be the object of further convergence, as we will discuss below, even if rules, scope and scale of the regulatory frameworks do still widely differ.

Quite surprisingly, it is on the institutional level that similarities and convergence can be observed in the electricity sector. The large domination of the “Independent regulatory authority” (IRA) model over the two others (respectively the “Politico-administrative” and the “Quasi-judicial” models) can be considered as the illustration of a strong and coherent converging dynamic, at least for two reasons. Firstly because these independent regulatory authorities were especially created for the purpose of regulating the newly liberalized sector. As such, their design is therefore less subject to institutional and organizational path dependency pressures as it could be the case if they were the outcome of the transformation of an existing entity. Secondly, because all of them, with the exception of UK and Sweden, have been created in a short and congruent time period, between 1999 and 2000, and this similarity in time and context (transposition of the EU Directive), make it is easier to detect converging mechanism in their design process.

Let us look first at the empirical evidence highlighting such convergence in both the regulatory frameworks and the institutional arrangements.

1. Convergence in the regulatory frameworks

“This Directive establishes common rules for the generation, transmission and distribution of electricity. It lays down the rules relating to the organization and functioning of the electricity sector, access to the market, the criteria and procedures applicable to calls for tender and the granting of authorizations and the operation of systems.” (Art. 1 Directive 96/92). Rather than the liberalization of 15 national electricity markets, the explicit goal of this Directive is the achievement of a common European electricity market as the contribution to the constitution of the wider Internal Market. The existence of this common goal does not mean however that each Member State endorse it fully and exclusively. Indeed, Member States usually use their statutory autonomy during the transposition process of EU Directives in their respective legal orders to adapt, interpret, precise or complete the general objective along the national political agenda. Although this process is closely scrutinized by the Commission, important discrepancies and variations in terms of goals, scale, scope and objects can be observed. The electricity sector is no exception as Table 1 shows.

Table No.1: Goals of liberalization and regulation of the European electricity sector²

Countries	Goals of liberalization	Goals of regulation
England & Wales	Introduce competition in the electricity sector	Protect the interest of the consumers and promote competition (art 13 Utility act 2000)
Norway	« lay the basis for an efficient electricity market »(Energy Act 1990)	« control of network operations as a natural monopoly [...] ensure that electricity is transmitted at the right quality and price, and that the network is used and developed in a safe and rational way for society » (Energy Act 1990)
Germany	Delivery of secure, cheap and sustainable electricity and gas	Anti-trust
France	-	Secure the supply on the national territory and the general interest
Switzerland	Create the condition of an electricity markets	Secure the national supply of electricity and fair prices.
Portugal	provide the framework for the exercise of the activities of electric energy production, transmission and distribution	contribute to economic and social development and to the well-being of the population
Netherlands	Extend the possibilities for the generation, supply, import, and export of electricity	Introduce new regulations relating to the production, transmission and supply of electricity, taking into consideration the importance of the reliable, sustainable and efficient supply of electricity
Italy	Liberalization of electricity production and trading	Promotion of competition and efficiency while ensuring adequate service quality standards

² In this table we have only considered the goals that were to be found in the national legislation. We have either reproduce citations of the English translation or reformulate the objective, which were sometimes implicit. In some countries, we were unable to get a English translation of the legislation (ex. Denmark). For other, the formulation of the legal text does not allow us to derive explicit goals (ex. Ireland).

Belgium	None explicit	None explicit
Spain	N/a	N/a
Luxemburg	None	Prevent market power abuse and predatory behavior Enforce PSOs
Ireland	None explicit	None explicit
Greece	N/a	N/a
Sweden	Create competitive energy markets	ensure competition within the electricity supply industry and create an ecologically sustainable and economically viable energy system
Finland	Ensure the preconditions for an efficiently functioning electricity market	secure the sufficient supply of high-standard electricity at reasonable prices
Austria	Creation of an electricity market along EU dispositions	Provide cheap and quality electricity, increase the part of sustainable energy, ensure the provision of PSO (quality, security etc.)
Denmark	N/a	N/a

Sources: national legislations and official documents

Apart from its rhetorical dimension such comparison gives a first, although superficial, indication of the economic and legal tradition, the political priorities, and the political compromises from which these reforms result. Three “models” of market and regulation design can be derived from this comparison.

- The *market oriented* model is characterized by the explicit reference to competition creation and efficiency as the primary objectives of the reforms. Emphasis is put on the promotion of competition for the benefit of customers in terms of price and quality. Although redistributive goals and public services objectives (PSO) are not forgotten, they constitute corrective mechanisms and as such are only secondary objectives. Regulation in this model is largely designed to create and then maintain competition in the sector in the interest of the consumer mainly through anti-trust and/or sector specific regulatory intervention. This model can be found in England & Wales, and to some extent in Germany and Luxemburg.
- At the other extreme of the spectrum, the *public service oriented* model emphasizes the importance of electricity as a vital commodity that requires specific protections and safeguards in a competitive market. Generally, the concepts of “competition” or “market” are not used, and if they are used only on exceptional occasions. On the contrary, PSO are very often defined and described in detail and referred to as the main goal of the regulatory reform designed for the citizen, not the consumer, as it is the case in France, Portugal and Spain.
- In between these two ideal-types, the *mixed model* is definitely the most popular in European countries, although the differences between countries can be sometimes substantial. However, what characterizes these countries is the explicit combination or tension between liberal measures like the creation of an efficient market and the willingness to implement large scale redistributive and PSO objectives. Very often, both liberalization and regulation design seek to create the condition for an efficient market

taking into account the public interests. These interests can rank from ensuring the security of supply to implementing environmental measures.

Apart from these general objectives pertaining to market creation, regulatory reforms can vary as to their degree of comprehensiveness. As we saw above, market oriented models, for instance, put a smaller emphasis on environmental issues or PSO as do the public services or the mixed models. Therefore, when comparing regulatory frameworks it is interesting to observe how each country used its statutory freedom in the transposition of an EU Directive to adapt or complete it along its own national agenda and priorities. Table 2 compares countries on four issues. First, the institutional issue: are electricity and gas regulation integrated? In other words, is there one sectoral regulator for each sector or only one taking on both tasks? Secondly, the issue of the object of regulation: what is regulated? What and how many aspects of the policy domain (electricity) are the object of the regulatory process? Apart from the supervision of third party access (TPA), regulation can extend to investments decisions of operators, public service objectives (price, quality, universality) and environmental issues. Each of these four dimensions is ranked from highly regulated to no regulation. This evaluation is based on the appreciation of the precision of the objectives (general goals vs detailed and measurable outputs and outcomes), the type of regulatory instrument (hierarchic vs incentives), and the nature of the control and monitoring instruments (voluntary vs compulsory and recommendation vs sanctions).

Table 2 Scale and Scope of the regulatory process

Countries	Integrated sectoral regulator (electricity and gas)	Scope of regulatory intervention		
		TPA ³	Public service obligations	Environmental measures
England & Wales	Yes (OFGEM)	rTPA	Obligation to connect, standards of service performance, customers complaint	Standard of performance on efficient use of electricity
Norway	?	rTPA	?	Gov. rights in hydro
Germany	No	nTPA*	Obligation to connect	Obligation to purchase renewable sources for grid operators
France	No	rTPA	Obligation to connect and supply, Social tariffs, Fund for PSO	No
Switzerland	No	rTPA	Obligation to connect	Public lawns for stranded costs
Portugal	Yes	rTPA*	Obligation to connect and supply, Code of conducts and practice	Obligation to buy from renewable at governmental set prices
Netherlands	Yes (Dte)	rTPA	Maximum prices for captive customers	Obligation to purchase green electricity, Green certificate

³ This mainly includes grid management, prices and quality.

Italy	Yes (Autorità)	rTPA*	Obligation to connect Social tariffs	Priority to renewables Renewable production quotas Levy on tariffs for stranded costs
Belgium	Yes (CREG)	rTPA	Price caps for captive customers,	Fund for stranded costs
Spain	Yes (CNE)	rTPA	Obligation to connect	Renewable support
Luxemburg	Yes (ILR) ⁴	rTPA	Obligation to connect Equality in captive customers tariffs Compensation fund for PSO	Priority to renewable
Ireland	No	rTPA	N/a	N/a
Greece	No	rTPA	N/a	N/a
Sweden	?	rTPA	Obligation to connect	?
Finland	Yes (EMA)	rTPA	Obligation to connect	?
Austria	No	rTPA	Obligation to connect and supply	Priority dispatching from renewable Stranded costs
Denmark	Yes	rTPA	N/a	N/a

* These three countries also implement the single-buyer model on the local level.

This table inspires the following comments on each of the four aspects considered:

- Although conducted as two different reforms, the electricity and the gas liberalizations are part of the general plan to create a Single European Energy market. Half of the countries considered in the study have translated this policy into their institutional frameworks and created integrated gas and electricity regulatory authorities, while others are planning to do so accordingly when the gas market will be open to competition (ex. France). Several factors can explain this general tendency to consider energy regulation as a cross-sectoral task. First, it constitutes an acknowledgment of the considerable amount of synergies and that can be found between these two sectors in terms of markets and business strategies. Secondly, although different in technical terms, the liberalization patterns of these two sectors are quite similar (access mode, unbundling, etc.). Therefore, governments have considered, thirdly, that in institutional terms the setup of two separate regulatory frameworks would have been too costly and inefficient. One case is however outstanding: Luxembourg. In this country, the regulatory authority covers the entire spectrum of network industries: the same institution is in charge of regulating the telecommunications, gas, electricity, postal radio communication sectors. The Luxemburg government transformed in 2000 this former telecommunication regulator into multi-sectoral authority with the purpose of maximizing synergies and minimizing institutional redundancy and regulatory costs for such a small country.
- The most striking feature of this comparison is definitely the almost universal diffusion of the regulated Third Party Access model, although behind this quasi-

⁴ This authority is responsible for the regulation of postal services, electricity, gas and telecommunications

unanimity, very different patterns and diverging implementations can be found in terms of regulatory process and tariffs supervision or approval. Germany is the only country that opted for the negotiated Third Party Model. As Eberlein (2001) shows, at least three reasons explain this German exception: the federal political structure of the country, the corporatist style of state-society relations, and the social market ideology that inspired many German institutions and policies. With this exception, the dominance of rTPA model all over Europe is unique. Various considerations could explain this. First, it is the logical model of market regulation, congruent with the economic doctrine of state intervention in case of market failure and natural monopoly elements. Secondly, it gives the state the opportunity to continue to have a word to say in the management and regulation of a sector where market imperatives and public interest have to be balanced. Finally, it is generally considered to be the most efficient model to promote competition in network industries.

- Although the concept of “universal services” is not used in this sector, public service obligations, as they are described by the Directive and as they are transposed and implemented in member states, are very close to what can be found in telecommunications and postal sectors. As table 2 demonstrates, access, translated into the “obligation to connect” is the core element or the minimal standard of PSOs. Differences in terms of scope and scale do only partially depend on the category of market and regulation design model. It appears like the difference is not in terms of the nature of the PSO, but in terms of the perspective from which they are considered: from the citizen or the consumer point of view. If *market oriented countries* focus the scale and scope of PSOs on this core element, quality of service considerations are not left aside and are generally dealt with consumer protection measures, for instance like in England & Wales where consumer are associated in the regulation of the sector through the institutionalization of complaints or through the setting by the regulator of quality standards imposed on operators. On the other side of the spectrum, *public service oriented countries* generally include social measures (social tariffs) and set up complex financial or regulatory mechanisms like funds to finance PSOs. This is the case of France and to some extent of Portugal, where a distinction is made between the competitive electricity market and the public electricity system. In between, the mixed model countries combine customer oriented dispositions (code of conducts) and public services measures (price caps for captive customers).
- The situation is identical with the environmental issues. A core element of environmental measures can be found around two dispositions, i.e., measures encouraging renewable energies (obligation to buy, price guarantee, standards, certification) and stranded cost recovery through levies, taxes, or loans. If the second set of measures are transitional and aim at adapting the industry to the competitive environment, the first ones are designed to adjust energy policy instruments to the new context of competition. This adjustment process is rather limited and marginal considering the importance of energy policy issues, such as environmental protection, rational use of energy, and security of supply. It is as if governments did consider that liberalization and energy policies were not really linked together, both on the institutional and the substantial levels.

In short, a common model of regulation is slowly but clearly emerging, taking the form of an integrated electricity and gas regulatory framework resting upon the regulated Third Party

Access model. The picture is more uneven on the substantial level. Although, a “universal” core definition of PSOs does exist, differences can still be important between on one hand countries focusing on consumer protection and on the other countries inspired by a more citizen oriented conception of public services.

2. Convergence in institutional arrangements

Regulation is a multi actor process. In its wider sense regulation is the meta-process including all the actors (governments, operators, regulatory authorities, customers, political parties, associations etc.) that act in one way or another within the sector. In its strictest sense, it encompasses the relations between political authorities (government), the regulatory authorities, appeal institutions, and the industry, although in some cases, consumer and interests groups can also be included in the process. These actors form institutional arrangements determined by statutory attributions (e.g., relations between the regulatory authority and the sponsoring ministry) and formalized in the law, by reputational or resource based power distribution, and by informal relations. Table No.3 summarizes these arrangements in each country by considering three dimensions. The first pertains to the relationship between the regulatory institution and the governmental authorities and identifies the legal and organizational nature of the regulatory institution (independent, administrative or judicial). The second pertains to the relation between sectoral regulatory institutions and the competition authority. Finally, the role of courts and/or dispute settlement institutions gives an indication about the way disputes are resolved and about the degree of judicial intervention in the regulatory process.

Table No.3: Models of regulatory institutions in the electricity sector

Model*	General features	Countries
Politico-administrative	<ul style="list-style-type: none"> • Concentration of regulatory functions in political hands • Existing independent regulatory institutions can act as consultative or advisory bodies • Competition regulation as a complement to sectoral regulation • Courts and judicial systems as appeal authority 	Norway, Switzerland, Spain, Luxemburg, Netherlands
Quasi-judicial	<ul style="list-style-type: none"> • Generally weak resources • Generally weak regulatory powers • Important role of ministries as coordinators and appeal authorities • Mainly ex-post regulatory intervention • Weak or no ex-ante regulatory intervention • Competition regulation is the sectoral regulation • Sectoral regulation is part of a judicial process 	Germany
Independent regulatory authority	<ul style="list-style-type: none"> • Wide range of attributions to the independent authority • Combination of ex-ante and ex-post regulatory intervention • The regulatory authority generally takes decisions on its own • Coordination with competition authority 	England & Wales France Italy Portugal Belgium Ireland Greece

	<ul style="list-style-type: none"> • Ministries as appeal authority (1st order) • Courts and judicial systems as appeal authority (2nd order) 	Sweden Finland Austria Denmark
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*We considered the dominant regulatory actor, i.e., the actor responsible for the core regulatory functions (TPA and network access management).

- In the *politico-administrative model*, sectoral regulation is integrated in the governmental and political process. If an independent regulatory body exists, as is the case in Spain, this institution acts as an advisory body for the sponsoring ministry which monopolizes most of the regulatory functions. In this model, the general competition regulation represent the second pillar of the sectoral regulation framework, if it is not the sole regulator, like in the Netherlands, where the sectoral regulation of electricity is responsible for a division of the competition authority. The situation in the Netherlands is however unique, as the Ministry can give binding instructions to the competition authorities. This explains why this case is not placed in the second model.
- It is difficult to speak of model since Germany is the sole example illustrating a *quasi-judicial regulatory authority*. However, in many ways, this framework can be considered as an alternative to the dominant independent regulatory authority model. At least, this how the advocates of this model (i.e., the German government) see it. It is generally considered that this model is more market-oriented than other models, as it relies on the dynamics of the markets on a self-regulatory and on a competition regulation basis. Operators and actors of the market act “*in the shadow of government intervention*” (Eberlein 2001:383), and regulatory intervention is only required to settle disputes or to prevent market power abuse. Regulation is therefore ex-post, and competition regulation is an adequate substitute to costly and inefficient sectoral regulation.
- The third and dominant *independent regulatory authority* model can be considered as a combination of the first two others or as a mid-spectrum solution. The rationale for the delegation of regulatory powers to independent regulatory authorities (IRA) are numerous⁵: credible commitment, political uncertainty, expertise, flexibility to which we should had the reduction of regulatory inconsistency and discrimination when governments are at the same time owner of operators and regulator. Generally, to be qualified as an IRA, the authority has to meet at least three requirements (Thatcher 2002: 103): it has its own powers and responsibilities under public law; it is organizationally separated from ministries and it be neither elected nor managed by elected officials. Their attributions can widely vary, but generally comprise ex ante and ex post powers as table 4 shows.

Regulatory authorities can differ in terms of nature as we saw in the previous section. We compare now these sectoral regulatory authorities in terms of missions, competencies, powers, political autonomy and resources, as is summarized in the following table.

⁵ See Vol 8, Issue 1, Spring 2002 of the Swiss political Science Review for a discussion on the main theoretical arguments for the creation of IRAs.

Table No.4 Sectoral regulatory authorities*

Sectoral regulator	Name	Missions	Competencies in electricity Regulation	Powers	Political autonomy	Resources (2001)
England & Wales	Office of Gas and Electricity Markets (OFGEM)	Promote competition and consumer protection	Price control, Licensing, Network access enforcement, Quality standards setting, Dispute settlement	Inquiries, Financial penalties, legal enforcement	Licensing decision by DTI	Board: 1 +(10) Staff: ~ 300 Budget: 35 M £ coming from licensee fees
Norway	Norwegian Water resources and Energy Administration (NVA)	Administering water and energy resources	Licensing, Network access regulation, Market monitoring	Legal enforcement (licenses); recommendations	All decisions can be revised by Ministry (MPE)	N/a
Germany	Office of Cartels (Bundeskartellamt)	Enforce Cartel law	Dispute settlement and abuse of dominant power	Legal enforcement	Anti-trust law	Board: - Staff: 5-6 Budget: ?
France	Commission de regulation de l'électricité (CRE)	Regulate network access	Access tariffs review, dispute settlement, advice to Minister, grid management supervision	Legal enforcement, financial penalties	Access tariffs are set by the Ministry	Board: 6 Staff: 80 Budget: 60MFF from public budget
Switzerland	Office of Energy (OFEN)		Licensing, Benchmarking, Policy Advice, Codes setting	Inquiries, Sanctions	None. Disputes are dealt by a special independent commission	Board: - Staff: ? Budget: ? from public budget
Portugal	Energy Regulatory Authority (ERSE)	Regulation of electricity and gas sector	Transmission and distribution tariffs regulation	Secondary legislative power (Codes of conduct), Inquiries, financial penalties, legal enforcement	Decisions from ERSE can only be appealed before Courts	Board:3 Staff: 42 Budget: 4.5M Euros from "use of system" tariffs
Netherlands	Dienst Toezicht en Uitvoering Energie (DTE)	Regulation of network access	Policy advice (licenses), System tariffs approval, Codes setting, Grid management regulation	Inquiries, Sanctions	DTE can receive binding instructions from Ministry	Board:1 Staff: 33 Budget: 4 m € from operators contributions and state budget
Italy	Autorità per l'energia elettrica e il	Promotion of competition and efficiency	Price regulation (price-cap), Enforcing	Inquiries, Hearings, Quality	-	Board: 3 Staff: 63 Budget: 18 m€

	gas (AEEG)	and quality standards	quality standards, Grids management regulation, Policy advice (ex. licensing), Dispute settlement.	standards setting and enforcement, Financial sanctions		from levy on operators
Belgium	Commission de regulation de l'électricité et du gaz (CREG)	-	TPA regulation, Grid management regulation, PSO regulation, Dispute settlement, Policy advice	Inquiries, Financial sanctions	CREG is responsible for the regulation of high tension grid, while regional reg. Take over regional grids.	Board: 4 Staff: 40 Budget: 9.4 m€ from levy on network users
Spain	National Energy Commission (CNE)	Regulation of Gas, Electricity and Petroleum	Advice to ministry; Dispute settlement, approve M&A	Monitoring, Expertise, Investigation	No decisional power. Propose decisions to Ministry	Board: 9 Staff: 120 Budget: 6.5 M\$ coming from consumption tax
Luxemburg	Luxemburg Regulation Institute (ILR)	Prevent market power abuse and predatory behavior Enforce PSOs	TPA tariffs and conditions proposition to ministry, Dispute settlement, Administration of compensation fund, PSOs enforcement	Inquiries, Sanctions	Most regulatory functions in the hands of the Ministry (licensing, tariffs etc.)	Board: ? Staff: 1? Budget: ?m€ coming from levy on regulated operators
Ireland	Commission for Electricity Regulation (CER)	Promote competition and protect the interests of consumers	Licensing Grids tariffs approval, Setting of performance standards Dispute settlement, Policy Advice	Inquiries Sanctions	CER can receive instruction on PSOs	Board: 1 (4?) Staff: 27 Budget: 5 m€ coming from levy on regulated operators
Greece	Regulatory Authority for Energy (RAE)	N/a	Tariffs proposition to ministry Monitoring of law	Inquiries, Sanctions	RAE is mainly a consultative body to ministry	Board: 5 Staff: 10 Budget: 4.5m€ from energy taxes
Sweden	Office of	Supervision of	Licensing for	Codes and	Licensing	Board: 1

	Electricity and Gas Regulator (OEGR)	natural monopoly elements	network operations, supervision of network tariffs, Data collection, Policy advice	guidelines setting, Recommendations	decisions can be appealed to ministry	Staff: 33 Budget: 6.5 m€ from State budget
Finland	Energy market Authority (EMA)	Monitoring of electricity markets	Licensing, Retail prices monitoring, Grid management monitoring	Investigation, Data collection, Sanctions (licence withdrawal, financial penalties)	Technical and economical regulations are fixed by the ministry.	Board: ? Staff: 15 Budget: 1.2 m€ from license fees and State budget
Austria	Electricity Control ltd. (ECGmbH + Electricity Control Commission (ECC))	Monitor the liberalization of electricity	Network tariffs approval, Dispute settlement, technical standard setting	Investigation, Data collection, binding decision, Financial sanctions	ECCmbH is a private law organization working for the ECC; ECC is the judicial and decisional regulator	ECCmbH Board: 1 Staff: 43 Budget: 7 m€ from levy on network user ECC Board: 3 Staff: -
Denmark	Energy supervisory board (ESB)	Monitor the liberalization of Energy markets	Tariffs supervision, Dispute settlement	ESB acts on an ex-post basis	Licensing by Ministry	Board: 7 Staff: 30 Budget: 2.5 m€ from levy on consumption, production and transmission

* When there is no formal sectoral regulator, we consider the actors which assume the sectoral regulatory functions (i.e., network access, technical, and prices regulation).

Sources: European Commission reports, national legislations and regulatory authorities annual reports

Although the *competencies* of regulatory agencies can vary a lot, it is possible to find core tasks that are shared by many. The supervision of network access tariffs and prices monitoring undoubtedly represent the core missions of regulatory authorities organized around the Third party access issue. Some authorities have extended competencies such as dispute settlement and even licensing attributions.

The *powers* of these authorities are organized along a four circles model. At the center stand information, data collection and investigative powers which represent the basic powers of a regulatory authority whose tasks is to monitor the process and act as a consultative body. The second circle is organized around the settlement of dispute between actors of the regulatory system. The third circle is characterized by the ability for the authority to take binding decisions (for instance sanctions) on matters ranging from prices, grid management monitoring to penalty and license revoking. The most powerful regulatory authorities cumulate these three circles of competencies. However, some have extraordinary powers that add a fourth circle: quasi-legislative powers. Some authorities have the ability to draw and adopt codes of conducts, which act as legal regulations imposed on the regulated industries. An authority that cumulates all four

regulatory power circles would in fact integrate judiciary (dispute settlement), executive (binding decisions) and legislative powers.

The independence or *autonomy* of regulatory authorities varies also a lot. It is however interesting to note that even with powerful regulatory authorities (ex. UK) the role of the sponsoring ministry is still important. In such situations, the ministry is often the recourse authority, the final decision maker acting on the recommendation of the regulatory authority (ex. France), the legislator, or can give binding instructions on specific matters. The institutional arrangement between the governmental and the regulatory authorities and the question of independence that characterize it are undoubtedly one of the many crucial issues of the regulatory process, as we will see in section 3.5 below.

Two interesting observations can be formulated on *resources*. First, all regulatory authorities consider that in the next years their financial and staff resources should grow in order to act as fully functional regulatory bodies. Secondly, the nature of the financial resources varies a lot from one case to the other (public budget, levees, taxes).

In short, we can observe regulatory convergence on the issues presented in the table below.

Table 5: Elements of convergence in the electricity sector

Element of convergence	Objects of convergence	Remaining divergence	Potential for convergence
Policy goals	<ul style="list-style-type: none"> • Creation of Energy markets 	<ul style="list-style-type: none"> • 3 models (market oriented, public service and mixed) • Definition of Public services objectives 	<ul style="list-style-type: none"> • medium
Policy instruments	<ul style="list-style-type: none"> • Third party access modes (regulated) 	<ul style="list-style-type: none"> • Pricing methods • Grid management supervision • PSO supervision 	<ul style="list-style-type: none"> • high
Policy institutions	<ul style="list-style-type: none"> • Large diffusion of IRA model • Tendency to increase staff and budget 	<ul style="list-style-type: none"> • Mission, powers, autonomy 	<ul style="list-style-type: none"> • medium

3. Factors explaining regulatory convergence

Several theoretical arguments are currently available in the literature advocating policy or institutional convergence. In this section, we confront them with the above empirical observations and transpose them in the context of electricity sector regulation. We start by discussing the role of the EU as a convergence driver and follow with the evaluation of EU law as a convergence promoter. The third section looks at the EU policy process, while the fourth and fifth sections evaluate the role of informal institutions and national regulatory authorities as convergence agents. A sixth section look at external factors.

3.1. The role of EU as a convergence promoter

With the exception of the two British and Norwegian precursors, all the others countries⁶ have liberalized their energy sectors under the initiative and the supervision of the European Union and more particularly the Commission. As both initiator and supervisor, the EU can be a powerful driver for convergence. In this section, we look at the formal powers of the EU (mainly the Commission) which affect the national regulatory frameworks. We focus on the formal attributions of the EU on each regulatory function. Considering four of the main regulatory functions, table 10 compares both national and EU powers for each regulatory function.

Table 6 : Comparison of regulatory functions between EU and national levels

Economic (1st order) regulation	Political (2nd order) regulation
<p><i>COMPETITION REGULATION</i></p> <p>National level</p> <ul style="list-style-type: none"> • Endogenous rule-making or European follower • Abuse of dominant position, mergers and acquisitions etc. • Usually does act on institutions and existing structures <p>European level</p> <ul style="list-style-type: none"> • Rule making (directives) and control of implementation and application • Harmonisation of national law • Subsidiarity principle • Mergers and Acquisition control • Cannot act on institutions and existing structures 	<p><i>PUBLIC SERVICE REGULATION</i></p> <p>National level</p> <ul style="list-style-type: none"> • Definition of content, financing mechanisms and implementation • Definition and implementation of national policies <p>European level</p> <ul style="list-style-type: none"> • Definition of “General economic interest” and “Universal” or “Public services” minimum standards. • Control of EU directives implementation (jurisprudence)
<p><i>SECTORAL REGULATION</i></p> <p>National level</p> <ul style="list-style-type: none"> • Definition and implementation of TPA. <p>European level</p> <ul style="list-style-type: none"> • Definition of possible TPA conditions, methods and access pricing standards • Possibility of legal recourse on access 	<p><i>PUBLIC PROPERTY REGULATION</i></p> <p>National level</p> <ul style="list-style-type: none"> • Through national, regional or local ownership • National rules on state aids <p>European level</p> <ul style="list-style-type: none"> • Rules on State aids

⁶ Including Switzerland, although indirectly.

Adapted from Genoud & Varone (2002: 239)

Competition regulation is historically a strong component of EU regulatory intervention and constitutes an important part of its work dating back to the creation of the European Economic Community and the Treaty of Rome in 1957. It was from the beginning aimed at promoting effective competition and protecting consumers, but through time many other goals have been added such as the promotion of innovation and the monitoring of industrial restructuring processes (i.e. Mergers and Acquisitions) (Neven et al. 1998; McGowan & Cini 1999). Over the years, the EU competition policy and legal order have become the referent for many national competition policy reforms (Eyre & Lodge 2000) and has largely contributed to the harmonization and coordination of national dispositions in tune with the European framework. Competition regulation in the EU is a two-level process involving both national authorities and the Commission (DG Competition) mainly focused at the EU level on Mergers and Acquisitions (M&A) cases. If national authorities can generally act whenever they decide a violation of the national law has happened, the intervention of the Commission is limited to cases where M&A are foreseeable and or planned. Although in appearance limited, the EU competition regulation has become extremely active and powerful as we will see below.

On the contrary, *sectoral regulation* is weakly developed at the EU level since it is limited to the definition of general rules and/or the regulatory instruments that member States can choose from (ex. regulated, negotiated TPA etc.) and to the legal recourse against an improper implementation of EU rules at the national level. In fact, the Commission has no direct formal powers in sectoral regulation. Most sectoral regulatory issues are dealt with at the national level where the rule makers design the regulatory framework pertaining to the sectoral regulatory function (regulatory institutions, instruments etc.). The Commission acts mainly as a recourse authority.

The concept of “*public services*” has progressively gained importance at the European level over the years. Divergent national traditions pertaining to public services objectives (PSOs) have often constituted obstacles on the path to greater liberalization. If very often the definition of the content of PSOs, their financing mode and the organization of their production are the duty of national political authorities, the EU has progressively gained influence on these matters over the years, through the gradual and slow apparition in the EU legal order of concepts such as “General economic interests”, “universal” or “public” services. The emergence of this vocabulary was made necessary by the wide differences between definitions among countries that strategically used this fuzziness to oppose or wrongfully interpret the EU intervention and actions. Moreover, repeated decisions from the European Court of Justice on such matters have contributed to the constitution of a first definition of European PSOs.

Contrary to what is often thought, the EU does not lead a crusade against *public ownership*. Public ownership regulation at the EU level is not an issue as such. Not only a public European ownership does not exist, but EU legal framework is almost “public ownership blind”. It is in fact exclusively through the rules on State aids (i.e. indirectly) that public ownership is “regulated” at the EU level.

Several observations pertaining to convergence can be drawn from this short analysis.

- First of all, there is a difference of nature and degree in the EU regulatory intervention regarding 1st order and 2nd order regulation as identified in the table above. EU powers on economic regulation combine hard law making (directives), soft law making (White and Green Papers) and regulatory coercive powers mainly on competition regulation matters. While second order regulation exclusively rely on hard and soft law making and very little on regulatory coercive powers or indirectly through competition regulation. In fact, the European regulatory framework in electricity and gas regulation – and even more in other network industries such as telecommunications and airlines – is characterized by some sort of “cannibalization” of all regulatory functions by the competition regulation function. Competition regulation is the sole regulatory function at the EU level which is conceptually defined, legally legitimized and institutionally organized, while the other are weakly and poorly conceptually and institutionally organized at the EU level. Constitutionally deprived of direct powers and prerogatives on sectoral and public services regulation which are still member States privileges, the Commission is bound to act indirectly, through judicial review or legislation, if it wants to have a word to say on such issues. In fact, empirical evidence show that anti-trust and competition regulation have been used as an indirect mean at least to perform sectoral regulation aimed at increasing competition in the sector. This blurring of the ex post competition regulation and ex ante sectoral regulation (Pelkmans 2001: 447), although limited but nascent in the energy sector, is a reality. Since the opening of electricity markets in 1999, the Commission has numerously used the competition promotion argument or its prerogatives in M & As to set the conditions (divestiture, transmission and interconnection change of rules) under which a merger or an acquisition in the energy sector would be acceptable under the EU law as the VEBA/VIAG, RWE/VEW mergers and the EDF takeovers in Germany, Italy and Spain have shown. In other words, mergers control tends to become a quasi-regulatory function affecting now national regulatory prerogatives and other regulatory functions.
- The consequence of this is that the EU regulatory framework is either mute on specific matters (public property regulation) or acts as it usually does in the process of liberalizing network industries: it first sets up a first minimal liberalization framework through a first directive, then controls its implementation through reports and soft laws, to finally redesign the framework in order to harmonize and create “governance or regulatory regimes” with the help of a second directive or amendments of the first. This three stage process is the second, although weaker and slower, instrument in the hands of the Commission to intervene beyond its natural prerogatives and to initiate a convergence and harmonization dynamics.
- The existing EU regulatory regime of electricity – and gas by extension – can be qualified as “intergovernmental” (based on reciprocity and negotiated by governments), “narrow” (nothing on ownership, tariffs and planning), and “indecisive” (choice for countries for TPA model, pace etc.) as opposed to the “supranational” regulatory framework found for example in telecommunications (Levi-Faur 1999). The inability of the Commission to liberalize the energy sectors as it did in the telecommunications can be explained by various factors. For Schmidt (1998), the Commission was unable to liberalize the electricity sector through the use of its competition regulation powers (Art. 90 and 90.3 of the former Treaty), as it did in telecommunications, for several reasons. First, the Commission did have very little support from the industry itself. Second, the

Council (Members States' Ministers), and the European Parliament did not support, at the beginning, the prospect of liberalizing through competition regulation as opposed to the more traditional three stage strategy. Finally and consequently, in order to preserve its credibility, the Commission did not dare to overcome the Council of Ministers by starting to act alone. It however used its statutory powers (initiative, proposition) and its favorable informational asymmetry to propose various projects of liberalization directives, which gave greater maneuver to Member States, while not hindering its ability to act through competition regulation and the supervision and monitoring of the implementation of the electricity and gas directives. The final stage of indirect regulation process was launched in March 2001, when the Commission, after having threatened to use its statutory powers to give a new pace to the liberalization process through the use of the competition regulation path if members States refused to adopt new measures, presented its proposal for a reform of the electricity directive. This proposal for a new directive on electricity follows two goals: completion of the liberalization process and harmonization. In its various documents, the Commission justifies the second objective by the differences in the scope, pace of the liberalization and the institutional dispositions of the regulatory framework. Four main barriers to greater competition are identified: high network tariffs, high level of market power of existing generation companies, inadequate network tariffs structures and insufficient unbundling (Commission 2002: 2). It is thus clear that the intention of the Commission is to legislate a second time in order to achieve greater convergence in the completion of internal energy markets. What was not possible to achieve in the first Directive and what not possible to monitor through indirect means, the Commission tries to get through new regulations on the base of a benchmarking and evaluation process.

- But the EU is not limited to regulatory intervention in the shape of legislation, monitoring, and competition regulation. Financial intervention in the shape of budgets allocated for specific projects, for instance to build new transmission capacity and infrastructures represent another form of intervention. This raises the question whether the degree to which the EU can act as a direct promoter of convergence depends or not on the existence of a formalized and institutionalized energy policy at the EU level. In other words the existence and the development of a common or European energy policy could play a significant role in the convergence of regulatory frameworks of members States. Energy is one of the pillars of the European construction: the European Coal and Steel Community and Euratom were designed to lay the foundation of a single or coordinated European energy policy. The creation of an internal energy market quickly became a secondary objective of the completion of the Single European Market. The dependence of a European Energy Policy on the creation of a corresponding internal market has largely determined the shape and content of this policy. This policy is founded today on four pillars (Matlary, 1996): price transparency, the development of energy infrastructures (Trans European Networks), tax policy and the European Energy Charter on investments. In this context, it possible to consider that the Commission will use the TEN program to build new cross-border transmission capacities to obtain competition and convergence objectives. In other words, the Commission as a "policy entrepreneur" might seek to use the energy policy as a levy toward the completion of internal markets and greater integration of markets and regulatory frameworks.

To sum up, the Commission does represent a heavy driver toward greater convergence in both electricity and gas sectors, be it through the use of the competition regulation powers, of its

statutory power of initiative on new directives, and through a strategic use of the energy policy. But the real issue is whether the EU is condemned in electricity and gas sectors to focus its regulatory intervention on sole competition problems for structural (Commissions legal attributions) and political reasons (Member States' reluctance to abandon regulatory powers on such vital sectors), or if it is able to shift its strategy of pursuing a negative integration of market creation to a positive integration based on the development of real public policies (Scharpf 1999)? To answer this question, one needs to have closer look at the role of formal institutions such as the EU law and at the policy formulation process at the EU level.

3.2. The role of the formal institutions: the European law

The EU is a legal and administrative entity before being a political one. The legal order, treaties, directives, regulations, jurisprudence are the core elements of the European Union. This recognition of the law as a fundamental, if not as the only, driver of the European integration raises several questions pertaining to convergence. Law and especially European law is a regulatory process in itself, with its own objectives (integration of markets etc.), its rules (ex. subsidiarity, reciprocity) and its institutions (Commission, ECJ) which to an extent can be distinguished from the political process that adopted it, since it has a life and a dynamic of its own. In other words, European law can be analyzed as an independent and systemic object. The question is then: is the European legal system a driver of convergence in general and in network industries and energy sectors particularly and how? Behind this question, stand the issue of whether is a European legal order emerging above national legal systems, with its own dynamic? Although the answer to this question is not clear-cut, several empirical and theoretical observations tend to confirm the possibility of such a process.

Undoubtedly, the liberalization of network industries in the last decade on the initiative of the EU has contributed to the constitution of nascent but coherent and solid regulatory regimes. Through the adoption of directives, their monitoring and the corrective or proactive actions of the Commission and the ECJ regarding their implementation, common rules and principles have progressively emerged at the EU and have in return affected national contexts. An illustration of this systemic effect of EU regulatory regimes can be found in the debates around the emergence of a "public service" doctrine in the EU. As Rodrigues has clearly shown (1999), the progressive construction of a "public service" doctrine, which is still nascent and unstable, is the outcome of a two stages systemic process. In the first stage, national PSOs traditions have been strategically used by members States either to promote or oppose the adoption of new dispositions toward greater competition. For instance, in the beginning, France opposed the liberalization of the energy sector advocating the performance of its "public service" system of public monopolist. Through political bargaining, a consensus could be achieved and the directive adopted, thus giving birth to a minimal, but existent "public service" concept in electricity at the EU level. The second stage is when this new legal order on "public services", mainly through judicial actions of the Commission or of the ECJ giving content and substance to the concept, starts to affect in return the national legislations and traditions. Countries where the tradition of "public services" was highly developed (France, Spain, Italy) were forced to make concessions, while countries that never had an articulated equivalent concept suddenly incorporated in their legal framework a new principle. The outcome of this process is double. First, the conditions for the emergence and construction of a "public service" doctrine at the EU level appear to be met. Secondly and consequently, this emerging public service doctrine at the EU level might contribute as is has already begun to initiate a vivid convergence dynamic across countries and sectors.

3.3. Convergence through politics: the EU policy process

Harmonization policies initiated by the Commission do not harm member states' sovereignty as much as other strategies, like for instance the use of coercive powers through the recourse to the European Court of Justice on the mis-implementation of a directive. Coordinated harmonization maintains free movement and integrates national administrative and political national authorities into the process (Dehousse, 1997: 249). However, this form of "bargained" harmonization is often a sub-optimal solution for various reasons. It is a slow and cumbersome process and high risks of transposition bottlenecks and over-regulation remain (Dehousse 1997: 250) as the discussion on the second electricity illustrates. The power game between the Commission seeking convergence and national governments trying to preserve their sovereignty and prerogatives on sensible national political issues is not new. It is a part of the equilibrium and the dynamics of European institutions. The presentation of the Commission project amending the first electricity directive in March 2001 has launched a new series of debates and political discussion between and within national governments. The French government is opposed to any changes before the German government does not deal with the remaining competition barriers on its electricity market. On the other hand, the German government accuses the French one to overprotect its national champion. In this context, the Commission is faced with a dilemma: cooperating and negotiating with member States in order to find a minimum consensus or act alone following the competition regulation route with the risk of losing political support and legitimacy. The risk with this situation is that in either case the process is risky, costly, hazardous, slow and incoherent and leads to "implementation gaps" (McGowan & Wallace 1996) or "regulatory gaps" (Dehousse 1997:251), which at first sight hinder the progress of market integration and harmonization, but which might play in favor of the Commission in the short term. There are several examples of "regulatory gaps" in the electricity sector that are the outcomes of the legislative compromise or of the diverging implementation and transposition of the directive in national frameworks due to the possibility for member states to choose its appropriate solution within the EU framework. The difference in the unbundling dispositions (legal, organizational or accounting) across countries constitutes a serious challenge for price transparency and regulatory intervention. Differences in access rules and competition mechanisms also represent competition and regulatory barriers. On the institutional level, differences in regulatory frameworks, such as the powers, missions or the main regulatory authorities and the remaining role of governmental and judicial authorities brings in more diversity and increases transactions costs for operators. Issues which are not within the scope of directive constitutes other "regulatory gaps" for instance like cross-border trade pricing.

Aside from its legislative and its competition regulation powers, the Commission intervention includes the monitoring and implementation control of the EU legal order. The existence of differences in national regulatory framework, sometimes leading to incoherence, and the reluctance of member States not to cooperate in the harmonization process, push the Commission to find other ways by exploiting at the maximum its privileges and by developing informal institutions and process bypassing the formal decisional process to fill in these "regulatory gaps".

3.4. The role of informal institutions on convergence

The legislative option and the transfer of regulatory powers to supranational levels are slow, delicate and highly improbable processes that lead to the creation of “regulation gaps” harming the construction of a coherent internal market. An answer to this frequent situation in EU policies has been found in phenomenon described by political scientists as “Regulation by networks” or “Comitology” (Dehousse 1997) which have emerged over the years as pragmatic answers, sometimes initiated by the Commission, to the need toward harmonization and the empirical need for more integrated and coherent policies design and regulatory frameworks. This new form of “governance” based on expertise, partnership and information exchange is a response to many functional needs: to create a depoliticized arenas whose function is to deal with policy problems from a expertise point of view, to collect, analyze and organized information, experiences and know-how, to create forums where national experts or officials can share experiences, to build non-political consensus and solutions and to legitimize the action of the Commission etc. The form of these new governance entities can vary from the forum where experts and bureaucrats meet and discuss, to the building of “European agencies”, like the European Environment Agency (EEA) or the European Agency for the Evaluation of Medicinal Products (EMA) whose tasks are to collect and organize data and act as consultative bodies. Although these “forums” and “European Agencies” are few – although they tend to multiply - and being denied regulatory powers by both national governments and to a lesser extent by the Commission, “regulation by information” is a powerful instrument to pursue harmonization or at least to initiate regulatory convergence.

For instance, informal contacts between national regulators are being encouraged by the Commission as the existence of forums like the Council of European Energy Regulators (CEER), the Madrid and Florence forums. The CEER created in March 2000, brings together 16 European energy regulators and act as both a cooperation platform between national regulatory authorities and as an advice body for the European Commission on energy regulatory issues. These same regulators also take a important part in the Florence and Madrid Forums which brings together since 1998, electricity and gas regulators, the European Commission, transmission system operators, electricity traders, consumers, network users and power exchanges. These two types of “informal” organizations work outside the direct control of national governmental authorities and have substantially contributed in the preparation of new European Directives for the European Commission. They also helped through the organization of discussion and the exchange of information and expertise to resolve practical regulatory problems such as cross border tariffs in a depoliticized context. These informal entities are also functional answers to the growing complexity of public policies formulation and regulatory task in electricity and gas sectors and encourage the search for ideal solutions outside the national context. These forums or information and expertise platforms represent the ideal infrastructure to initiate policy learning and emulation process, in which actors learn from experience and best practices. Coercion is not the sole driver for policy transfer, the perception of the necessity of a transfer and lesson-drawing are also powerful instruments (Dolowitz & March 2000: 13). By organizing these platforms, the Commission suggests best practices, models and original solutions (Radaelli 2000: 26), although indirectly since it is either the experts or the actors of the forums that build together the outcomes.

This increasing use by the Commission of soft law and facilitating mechanisms based on information might indicate a profound shift from command and control public intervention toward regulation based on information and incentives as Majone foresaw it (1997:269) and could act as a powerful tool toward the achievement of harmonization policies. In these contexts characterized by uncertainty, complexity and the strategic value of information and expertise as

key policy resources, the Commission can develop various strategies and tools to pursue its goal of internal market creation and regulatory convergence: the legislative option, the competition regulation route and the “regulation by information” path, which increase its powers, its credibility and add a new aspect to its attribution, i.e., the function of instigator.

3.5 The role of regulatory authorities as convergence drivers

The discussion has focused until now on the role of the EU and more precisely of the Commission as a convergence driver. But national regulatory authorities also play an important, if not crucial, part in the regulatory process. The large diffusion of the Independent Regulatory Authority (IRA) model is at the same time the illustration of a strong convergence and a powerful driver for further convergence. Indeed, their “independent” nature, as we will see below, puts them in a better position to import and learn from experience versus a politico-administrative and quasi-judicial regulatory authorities embedded as they are in bureaucratic and legal constraints.

The regulation process of network industries (i.e., mainly telecommunications, electricity, gas, railways, water and postal services) is a game in which multiple actors play: private and public operators, customers, governmental authorities, competition authorities, IRAs etc. In games, actors elaborate strategies, gather and consume resources, act and interact in the objective of attaining one or multiple goals. In this respect, IRAs are no exceptions. In charge of regulating a sector within the boundaries of the legal regulatory framework designed by governmental authorities, they have missions, objectives, financial, human and legal resources. One key issue of the regulatory process involving IRAs pertains to the relationship between IRAs and its or theirs sponsoring governmental authorities. How will these relations evolve through time in terms of power and positional centrality in the regulatory process? Will these IRAs strictly act within the formal legal framework set by the government or will they exceed or at least try to exceed their legal and constitutional attributions in order to become the dominant actor of the regulatory process on the expense of governmental authorities and ministries? And if yes, how will this happen and why?

A power gain for an IRA can be the consequence of the success of a double strategy: the consolidation of their existing legal attributions (ex. policy advice) and/or the appropriation or the creation of new substantial *de jure* (ex. mergers and acquisition review) or *de facto* regulatory attributions (ex. dispute settlement). In other words, IRAs might try to use their resources and asymmetrical position versus their governmental principals in order to move up the scale of the regulatory powers from simple consultative body, through executive activity, to full scale legislative or quasi-legislative powers.

Using a biological metaphor (Bernstein 1955, Philipps 1985:166-169), the life of an IRA can be characterized by four periods of activity: gestation, youth, maturity and old age. The first two phases witness the constitution of a “crusading” commission seeking to draw popular support, to affirm its independence and to attract qualified staff in order to establish its legitimacy and its credibility. The two remaining phases are characterized by the IRA progressively becoming more conservative and progressively identifying with the object of its activity (regulated industries) and by ending up as being fully captured by the regulated. Largely metaphoric, this theoretical approach however finds robust theoretical and empirical support in organization sociology approaches, for instance, from Crozier & Friedberg (1977). Strategic analysis focus on

the structural features of the power distribution within an organization and on the strategies of individual actors seeking to increase or maximize their influence by maintaining their “uncertainty zone” (i.e. their expertise and attributions). On an interorganizational level, we could therefore anticipate that as newly born organizations, regulatory authorities will seek, at least during their consolidation phase to impose themselves and to create their own zone of uncertainty (or regulatory space) by expanding their expertise, by flexing their muscles and by affirming their legitimacy, credibility and competence versus the public, the regulated industry and the government. The thirst of power, the need to increase its legitimacy and credibility and organizational dynamics would justify this willingness to gain power and importance.

Contemporary policy analysis literature (Scharpf 1993, Marin & Mayntz 1994) focuses on resource variables as key variables for the determination of the spatial location and the power significance of an actor within a policy process or policy network. The actors or group of actors which possess one or the key resource(s) in a network is in the position of being a dominant actor. In policy and regulatory process, information and expertise, as we saw above, are key resources which largely affect the quality, efficiency and effectiveness of regulation. In this situation, regulatory institutions are institutionally put in a better position than governmental authorities for various reasons. Expertise is usually considered as one of the key factor justifying the creation of IRAs and as a necessary condition for a credible regulatory intervention due to the high level of complexity and technicality of the issues at stake. Responsiveness and flexibility (i.e., the ability to quickly adapt to the new challenges addressed by the environment by constantly fine-tuning the rules, the standards and the regulatory instruments) are also factors affecting the efficiency and effectiveness of the regulatory process. In both cases, IRAs are more adapted than governmental bodies in terms of resources, missions and procedures. As stated above, experience has shown that independent agencies have quickly become the main source of information, legitimacy and expertise for governments both in policy design and policy implementation phases (Dehousse, 1997). In sectors where technology and market mechanisms are dominant features as it is in the energy sectors, flexibility, responsiveness, credibility and professionalism are key elements for efficient and effective regulatory processes. Regulators are, again, both for institutional and organizational reasons better equipped than administrative or political authorities. Moreover, independent bodies are very often precisely designed to increase the credibility, the legitimacy and the efficiency of a specific policy process (Majone, 1997) characterized by uncertainty and a high degree of technical and scientific qualifications. In this context, regulatory authorities might try to reshape their institutional environment in order to constantly adapt themselves to the new challenges they are confronted to. As adaptability to the environment is a fundamental condition of maintaining its sphere of influence and power within a policy network, IRAs might try to take advantage of this structural advantage to strengthen their power and increase it. In other words, by looking at the context (rules, actors, issues) in which IRAs are embedded in, network analysis reveal the importance and significance of the constraints and the opportunities that the direct environment offer to an actor in order to achieve its goals. IRAs might be willing to use the context as a playing field and seek to maximize their structural and institutional position in the regulatory process, and use it as a resource to increase its powers, for instance, versus its sponsoring ministries.

A good illustration of these dynamics can be found in the study of the French “Commission de Régulation de l’électricité” (CRE). In less than two years of activity, the CRE has adopted and elaborated a considerable amount of reports, position papers, communications and decisions. All of them clarifying, completing or implementing the existing legal framework. In this very short

period of time, the CRE has acted in ways that can be easily interpreted as first but superficial empirical confirmations of the postulates and hypothesis presented above.

The approval by the CRE on 20 September 2001 of the rules regulating the electricity spot market organized by “Powernext” is the illustration of the use by the regulator of “regulatory gap or void” in order to create new rules and to grant itself new attributions within the existing legal framework. Although the ministry of the Industry did not oppose this approval, the final decision was heavily challenged by members of parliaments wondering about the legality of the CRE decision to create a spot market, since the law and the preliminary legal works clearly indicated, to their opinion, that this was not possible without the modification of the existing legal framework. In a short but dense communication (CRE 2001), the CRE justified its decision and its ability to accept and regulate a spot market in France. This example is a spectacular illustration of the legal interpretation power and the strategic and opportunistic move of an IRAs in a context characterized by regulatory voids or uncertainty which inevitably result from the delegation of implementation and quasi-legislative powers. With this decision, the CRE has created new rules and gained new regulatory powers, without governmental interference or parliamentary approval. It is, as a member of the CRE foresaw it, *“according to the objectives and missions of its legal framework, the CRE has contributed to fill the gaps and silences of the present regulatory framework in order to ensure a continuity of the open market”*⁷ (Tuot, 2001: 54-55).

Similarly, the CRE monitored in Autumn 2001 a first “virtual power plant” auction of 6000MW from Electricité de France (EDF). This decision came from the European Commission in exchange of the approval of EDF joint control takeover of the German operator EnBW (Energie Baden-Württemberg AG). In this operation, the CRE clearly stated its willingness to make the French electricity market competitive even if it meant taking unpopular decisions against the public national champion. In doing so, the CRE explicitly wished to prove its independence from both the French government as owner of EDF, and EDF itself. It can also be interpreted as a positive and explicit sign to foreign competitors and investors who stand among the strongest supporters of the more liberal electricity market in France that the CRE advocates.

This French example is significant in many ways for the discussion on convergence. First of all the CRE is a member of the CEER, and as such takes a part in this informal supranational regulatory structure where experiences are exchanged and empirical problems more and more dealt with. It therefore acts as an incubator of best practices and foreign experiences. Secondly, if convergence and harmonization are not a first priority of the CRE or any IRA, its quest for power and centrality in regulatory process could engage spillover effects and initiate convergence and harmonization, provided that this convergence results in power gains for the regulatory authority, by offering more legitimacy and credibility. Thirdly, IRAs, more than other kind of regulatory authorities, tend to be more easily compared to their foreign counterparts in terms of efficiency and effectiveness. This benchmarking could increase the pressure toward institutional isomorphism based on best practices evaluation.

3.6. External factors of convergence

⁷ *“au nom des objectifs et des missions que la directive et la loi lui fixent, que la CRE a entrepris dans plusieurs domaines de jeter des ponts au-delà des fossés, gorges et abîmes du droit positif pour s’efforcer de donner au marché ouvert une continuité”*

The previous sections were exclusively concerned with factors for convergence that find their source in the inner dynamic of the regulatory process. In other words, the role of the Commission, of EU law, of informal institutions and regulatory authority in convergence are factors that are structurally rooted in the regulatory process itself. External factors that either affect the regulatory process in itself or the context in which regulation takes place might be the source of convergence dynamics.

- Generally speaking, technology and technological progress are strong harmonization or convergence drivers. Although innovation in the electricity sector is not as powerful as in the telecommunication industry, technological progress in the production and transport of electricity can lead to profound changes in the industry. New efficient and low costs gas-fired generators have already affected the industry structures of countries where gas was not a massive source of electricity production. The “dash for gas” that initiated this technological innovation has contributed for instance in the integration of electricity and gas regulation in the U.K. One must also mention here the new information and communication technologies which make unbundling, trading, and precise measurement and billing of energy even possible.
- The dynamics of the markets might strongly affect the regulatory frameworks for several reasons. Firstly, instead of a pan-European Electricity Market we observe the coexistence of regional or even local markets delimited by technical boundaries due the different interconnections and capacities of cross-border networks. For instance, the UK and the Spanish peninsula constitute local markets, while there is an emerging continental market composed of Germany, France, Belgium, Italy and the Netherlands, next to a regional market integrating Norway, Sweden and Finland (Glachant, 2001). Therefore, an increase in the interconnection of these markets both in technological and commercial terms will affect the way the sector and the operators will be regulated. Secondly and consequently, market integration in the form of power exchange pools or specific markets will undoubtedly push toward a greater harmonization of the regulatory structure.
- The fast emergence of Trans-National Corporations in the energy industry on the model of the water industry could also deeply affect national regulatory framework. Operators like E.on, RWE or even EDF growing in size both on home and foreign markets through M & A will push for harmonization of the playing field at least at the European scale.

4. Conclusion

It is still too early to assess or even predict with certainty whether convergence will develop or not in the near future in energy sectors and what will be its content. However, it is possible to present solid hypothesis on what kind of convergence might be observable and what actors support or encourage it.

At least three out of the five elements that compose policy convergence (Bennett 1991:218) (i.e. policy goals, policy content, policy instruments, policy outcomes, policy style), can be

expected to be the object of converging trajectories in the future in energy sectors: policy goals, and policy instruments.

Although liberalization and regulation goals still differ among countries in terms of scope, scale and focus, as chapter 2 and 3 show, common regulatory objectives can be identified. The creation of effective gas and electricity markets is the core feature of liberalization and regulation in all the countries. With its willingness to deepen and accelerate liberalization the Commission contributes to reaffirm the rationale for the reforms and confirm their strategic importance for European integration. Convergence on PSOs might be slower and less intense, due to the highly political dimension of the issue at national levels and the important divergence that still exists in national tradition. However, the slow emergence of a public service doctrine at the EU level can be considered as a powerful driver for convergence on minimal standards for the definition of European public services obligations. The convergence of energy policies is more uncertain. National traditions and institutional divergences constitute heavy obstacles. It is not however impossible that market dynamics, and especially markets integration, could affect the pertinence and effectiveness of existing energy policy instruments.

This raises the issue of policy instruments. Under this category, we must distinguish two things: policy tools and the institutions that are supposed to use them. As for the tools to liberalize and especially to regulate energy sectors are already quite similar across countries and sectors. Competition regulation is conducted through M&A and through anti-trust tools. More precisely, the development of incentive remedies, like divestiture or sale of assets tend to replace more and more structural remedies. As in sectoral regulation the regulated third party access model is already almost universal. In environmental matters, certification, levee and taxes to encourage renewable energies are already widely used and new instruments might emerge together with the integration of markets. As for institutions and more precisely regulatory authorities it can be expected that although convergence is due to happen it will be on a slower pace and on a smaller case. Institutional dynamics and political inertia will certainly limit the degree to which regulatory authorities will become alike. However, it seems quite possible that regulatory pressure will not decrease, but more like be stable if not increase.

As for policy content, policy styles and even more for policy outcomes they are too dependent on heavy structural and political factors too consider that they might be under the pressure of heavy convergence pressure.

Three types of actors have appeared as credible convergence dynamics drivers: the EU Commission, the informal institutions at the EU level and the national regulatory authorities. The statutory powers of the Commission and its central situation in the EU energy regulatory regimes place it in a strategic position. Initiator and supervisor of the liberalization and re-regulation processes, the Commission can follow various strategies to achieve its goal of internal market creation and harmonization. If the legislative and the competition regulation paths remain at the center of its intervention, it has the opportunity to progress without the burden of political bargaining by relying on the many informal institutions that bring it expertise, legitimacy and credibility. These same informal institutions are expected to gain more power and centrality, especially as long as the legislative path is blocked at the EU level and act as heavy convergence drivers both at the EU and national levels. Finally, national regulatory authorities and especially independent regulatory authorities will most certainly amplify and accompany the convergence dynamics that originated at the supra-national level.

In short, our analysis throughout this paper indicates that convergence will be achieved less through the political path than through an alternative technocratic and network shape like process integrating national and supranational levels in one emergent but coherent governance mechanisms.

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