

Implementing the European internal energy market in 2005 - 2009

A proposal from Academia

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1. Introduction

The European Union's "internal energy market" remains a work in progress. It is even possible that its construction might stall. Given current political, institutional and business conditions in Europe, there are no guarantees that the dynamics of this construction will not dissipate, as in the United States, or that the internal market will not fracture into "national blocks" that may be permanent or persist for a long time. This is exactly what this paper seeks to avoid. It suggests priority actions and secondary

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improvements to sustain the dynamics of the construction of the internal market, from today to the few coming years. It also tries to explain the underlying rationale for these recommendations by describing several aspects of the present state of the construction of the internal market and what factors are blocking its progress and how they may be unblocked.

These actions are recapitulated below to facilitate the understanding of the paper:

1.1. Priority actions

1. *Ensuring better access to, and improvement of, balancing services*
2. *Ensuring access to gas supply long term contracts*
3. *Improving the management of interconnections*
4. *Setting a European Market Surveillance Committee Network*
5. *Encouraging the negotiation of reinforced regional cooperation agreements between TSOs*
6. *Seeking objective criteria for evaluating Europe's interest in grid interconnections*
7. *Encouraging bilateral and regional harmonisation agreements between regulators*
8. *Developing a pan-European knowledge and training in the European Union.*

1.2. Secondary actions

1. *Terminating vested contracts*
2. *Improving the link between the operation of Power Exchanges and grids*
3. *Setting incentive pricing for domestic congestion*
4. *Facilitating regional harmonisation to open a European bilateral market*
5. *Facilitating regional harmonisation for reciprocated opening of organised markets*
6. *Facilitating regional harmonisation for reciprocated opening of balancing mechanisms*
7. *Facilitating regional harmonisation of the collection of, and access to, TSO's databases on markets, grids, and interconnections*
8. *Extending the independence of TSOs to include ownership of transmission assets*
9. *Encouraging regional harmonisation of grid access fees*
10. *Encouraging regional harmonisation of connection fees*
11. *Encouraging TSOs to develop joint forecasts and planning*
12. *Associating national regulators with the Commission's evaluation activities.*

A main constraint has guided our thinking and writing of this paper. We have excluded the development of a new package of European directives and regulations to push for stronger convergence in the construction of the EU internal energy market. In fact, such an event is not likely. By contrast, we have counted on two levers: the conscientious applying of the provisions of the second directive and accompanying regulations, and the promoting of reinforced regional cooperation agreements that will lead to the voluntary opening of some domestic markets to regional “mini internal markets”. We believe and try to demonstrate that thank to these levers a minimal, but sufficient dynamics of construction can be fostered³.

The identified priority actions will allow to progress without precluding further policy changes at a later date. The length of the current phase is defined by the legal lifetime of this European Commission: until 2009.

The paper is divided into 5 sections. Each section corresponds to priorities to improve a critical factor: national market designs, EU internal market design, industry structure, TSOs, and regulators. Each section will indicate what makes this factor key for building the internal market and what are the priorities or secondary actions which could be useful to keep constructing an EU electricity single market from 2005 to 2009.

2. Improving market design in Member States

While the goal of the ongoing reform is the construction of a EU internal market, its first success factor is the market design in Member States. It is perfectly reasonable that remaking an industry that has been a monopoly on the national, regional, or municipal scale for decades must begin with the development of a legislative, regulatory, and professional framework within the Member States and by the adaptation to the rules of operation necessary for a market open to all. Nonetheless, this national restructuring, Member State by Member State, remains a source of diversity that is not always compatible, a priori, with the ultimate convergence towards a single European market. Keeping in mind that we do not look for having a perfect market design in a few Member States but for going towards a EU single

³ Note that perhaps guidelines on how to execute Regulation 1229 can be useful and feasible in short time, for instance guidelines for regulators that have to approve the use of congestion revenue for investment versus tariff reduction.

market, the base question is how to improve the existing national designs in that direction?

2.1. Rationale for improving market design in Member States

The EU national diversity is first and foremost a predictable result of the nature of the compromises between the Member States, formalized by the European Community in the first directive of 1996. According to the insightful commentary of L. Hancher, this first directive allowed nearly everything, except ... an integrated internal market! The Second Directive (2003) and its companion regulations managed to reduce the scope of this diversity, but did not eliminate it.

However, this diversity is also bred into the genes of electricity markets. Several pioneering European countries and American states have voluntarily and independently implemented their own electricity reforms (England-Wales, Norway, California, Texas, and PJM⁴). They opted for five completely different market design models.

The most important components of national market design to consider for the successful implementation of an EU internal market are indicated in Box 1.

Box 1

The key modules of market design

First of all, there are *Bilateral and OTC (over-the-counter) markets*, where the bulk of energy wholesale transactions occurs (up to over 95 %) while the compulsory centralised pool (such as the former English and Welsh Electricity Pool) has lost its position as a model.

Next are the *organised markets*, which are rarely compulsory⁵. Most have

⁴ PJM stands for Pennsylvania-New Jersey-Maryland the first States with Delaware and Washington DC who entered the electricity liberalization era as a multi-state power pool.

⁵ OMEL in Spain is de facto mandatory, as trade on the exchange is encouraged with capacity payments.

taken the form of exchanges that are optional (EEX, Powernext) or semi-optional (Nord Pool, APX), where standardised contracts ranging from the very short term (day-ahead) to the medium term (1-month to 2-year futures) are traded. Within the European Union, these organised markets handle from several percent to 20 % (maximum) of the energy consumed (in the Nordic EU members).

There are also *congestion management mechanisms*, which may function as “pure” energy markets (in a form known as “implicit auctioning”) for allocating transmission capacity (as in the Nord Pool)⁶, or as an organised, single-buyer market (the TSO purchasing on the balancing–“counter-trading” market), or in the form of a bilateral contracting with a single buyer (the TSO) negotiating a portfolio of contracts (“pure” redispatching).

There are also *balancing mechanisms*, which give TSOs the means for real-time balancing of injections and withdrawals. These mechanisms may rely on bilateral contracts negotiated by the TSO or on an organised market. If markets supply balancing to a single buyer (the TSO), and if unbalances from energy traders are discouraged by tacking a penalty on the cost of system balancing (for example, +20 % in the case of France), we speak of “balancing mechanisms”. If, on the other hand, energy is sold (upwards or downwards) at cost and if, in fact, several agents may be buyers (upwards or downwards), we speak of a “balancing market”.

We have *complementary markets*, such as *fuel markets* (especially the market for natural gas) and *capacity markets*, which may provide central markets with the means to ensure their functioning, facilitate the entry of new generators, or contribute to security of supply.

Finally, the *retail market* is also an important element of market design⁷. Retail markets are also governed by a significant diversity of rules, not only in Europe (e.g. Great Britain vs. Norway vs. Germany) but even in the United States, where (provided they even exist) they are under the

⁶ Note that the implicit allocation (Nord Pool) or explicit allocation (continent) are about preventing congestion, balancing-counter-trading and redispatching is to remedy congestion that could not be prevented, which is done also in Nord Pool

⁷ Competition in the retail market will not be obligatory until July 2007 in the European Union, so there is still some time –not that much really- before this element will become a common preoccupation on the European agenda.

jurisdiction of local regulators and are not harmonised by federal bodies, who have no authority over retail markets. It should be noted that those European countries and US states that share a common wholesale market (e.g. the Nord Pool in Europe and PJM in the United States) have not structured their retail markets in the same way and have not aimed at a uniform regulatory retail framework.

2.2. Priority actions to improve today Market Design in Member States

A significant diversity among Member States in terms of market design is not necessarily unsettling by virtue of its mere existence. There are different acceptable ways to conduct a competitive energy reform. Nonetheless, however broad the range of tolerable diversities at the beginning or during the maturing phase of the reforms, an absolute minimum of competitive nature and openness must be ensured for these new markets. Several of the necessary guarantees already feature in the Community's legislation or in the Member States', so propositions will be restricted here to two high priority actions.

2.2.1. Access to, and improvement of balancing services

Balancing arrangements must absolutely be transparent, simple, and robust to allow all other energy markets to rely on a solid technical foundation for energy trading in the very short term and also to facilitate the appearance of new entrants in all other markets. In the electricity sector, the balancing market is actually the only real-time market on which energy is traded. Indeed, all the preceding markets function as forward markets, though with ever diminishing time horizons.

All balancing mechanisms use an incentive fee structure for energy supply (upward and downward) applied to grid users or their business representatives (called "Aggregators" or "Balancing managers", Access or Program Responsible Parties, etc.). However, balancing "*mechanisms*" amplify this incentive aspect by charging more than the cost of the service rendered so as to dissuade market participants from planning to voluntarily use these energy trades in their injection and withdrawal programs.

Today, some balancing provisions are discriminatory and handicap new entrants or existing operators that are not vertically integrated. In fact, firms with holdings in both transmission and in generation and sales may favour certain bilateral balancing contracts or certain balancing mechanisms that are not transparent and not open to all potential competitive offers.

An improvement, moving from balancing mechanisms to true balancing markets, is required. When there are no other markets on which operators can trade energy amongst themselves (such trading can be done with implicit auctioning in Nord Pool⁸), on which these operators can thus establish a real-time price for energy and use it to complete the prices set on forward markets, and when the electricity systems of the Member States primarily consist of large, vertically integrated concerns, it would truly be unfortunate to adulterate or “close” the only energy market that can be open to all, the balancing market. Quite the opposite, existing “balancing mechanisms” should be nudged toward “balancing markets” to provide a price signal.

2.2.2. Access to gas supply long term contracts

Gas supply markets should provide for contracts with sufficiently long and competitive terms, especially so that entrants into electricity generation, often using CCGT plants, are able to, at least partially, manage their operating costs: to manage the relationship between the purchase price of gas energy and the selling price of electric energy, the so-called “spark spread”.

Moreover, as pointed out by D. Newbery, competitive gas markets offers the prospect of equilibrating the effective cost of one of the major fuels (being natural gas) across Europe and hence freeing up more interconnection for importing competition into otherwise concentrated markets (as in Nordel).

⁸ The Nordic TSO's swap balancing services, but they do not do this with an implicit auction. The implicit auction is limited to the day-ahead stage in which TSO's do not participate.

2.3. Secondary actions

2.3.1. Terminating vested contracts

Two types of “incumbent” vested contracts have persisted into the competitive reforms. There are bilateral accords (often vertical and sometimes initiated by the government in the immediate run-up to the beginning of the reforms) and “regulated” supply contracts to end consumers, frequently domestic but also businesses of all sizes (up to electricity-intensities of several tens of GWh per year).

The survival of these contracts is completely justified from the perspective of the transition from the old system to the new. These contracts can also provide a certain degree of protection to some consumers and operators while the system becomes sufficiently competitive.

Obviously perpetually renewing these old contractual provisions amounts to an unlimited extension of the old contractual integration between the incumbent operators and their historical clientele (often at over 95 %, sometimes over 99%). In such circumstances, what merit is there in refining the “market design” rules as long as the markets remain under the “custody” of the incumbent operators?

2.3.2. Improving the link between the operation of Power Exchanges and grid operators

The functional link between the PXs and the TSOs remains a cornerstone of competitive markets—one that we simply cannot ignore. Otherwise, we ignore the very functioning of the markets, the very heart of the competitive reforms. How can exchanges promote trade in products if they do not know whether the transmitters are able to implement these trades? How can TSOs compute and allocate their transmission capacity without accounting for transactions negotiated on the exchanges? How can the balancing arrangement allocate volumes and values of balancing operations to the users of the transmission grid independent of the transactions effected on the exchanges?

Thus, there exists a significant potential for concrete improvements in the functioning of competitive markets that would allow more openness of all these markets to all operators, regardless of where they are from or when

they entered the business.

2.3.3. Setting incentive pricing of domestic congestion

One of the keys to functional cooperation between markets and grids is the management of congestion, which is a typical externality and creates an obstacle to realising some transactions (whether concluded on PXs or bilaterally). Neglecting to provide any signal to market operators (and their corresponding uses of the grid) concerning the existence, cost, and value of congestion is not conducive to a smooth functioning of these markets.

3. Improving the EU Internal Market Design

If, in accordance with the target expressed in the previous section, all Member States had adapted their balancing arrangements to open them indiscriminately to all potential suppliers, which must necessarily include suppliers from outside national borders, they had similarly opened the borders to their domestic markets for gas to competitive, long-term contracts for electricity generation, then the main action to improve the EU internal market design could focus entirely on the issue of interconnection congestion management. A possible motor to progress towards this direction is provided by regional cooperation.

3.1. Rationale for improving interconnection management and for regional cooperation

Today, one of the strongest protectionist forces in the EU's internal market is that congestion management is exclusively, or predominantly, domestic or based on domestic criteria. In practice, congestion at the "borders" appears as the outcome of domestic decisions and priorities decreed separately in each Member State. There is no real comprehensive operational cooperation to minimise congestions at the borders or to maximise the capacity available at the interconnections. After the decision against "Grandfathering rights" taken by the European Court of Justice, we could expect that "capacity auctioning" will spread in the entire EU as the main allocation procedure for interconnection capacity. Unfortunately, using auctions to allocate interconnection capacities will not necessarily create a mechanism for

cooperation capable of suppressing barriers to trade. Auction mechanisms do exert competitive pressures on interconnection users, but they do not put any pressure on interconnection managers to maximise capacity. In particular, this is because auctions are usually based on a “veto” rule for defining interconnection capacity. It is no coincidence that this veto rule is adopted by the two parties of grid managers—nor is it based on altruism. Indeed, the “capacity veto” is the simplest means of administering interconnections when there is no desire⁹ to cooperate at the borders, in terms of either computing interconnection capacity or optimising this capacity by coordinated redispatching on the domestic market.

Given the existing institutional framework (to simplify: the Commitology with 25 Member States), it may not be that easy to rapidly push forward common procedures for cooperating in the management of interconnections. We can however imagine that, in the current 2005–2009 phase, EU internal market design could be advanced by the impact of a small, dynamic group of regulators, TSOs, PXs, and market operators seeking to build a consistent framework for a regional market. These regulators would benefit from bolstering the role of the market in guiding the behaviour and performance of the operators. These TSOs could increase the operational security of their grids by cooperating more extensively and could generate new margins of capacity without large investments. These PXs could play a new role, at least over time, in allocating interconnection capacities, for example in the form of coordinated auctioning in a market coupling context. These market operators, finally, would stabilise the framework of action for wholesale markets before the resumption of investment in generation and the opening of retail markets, all the while reducing the governmental and regulatory pressures made necessary by excessively dominant positions on markets that are too local.

This scenario could drive Western Europe (The Netherlands, Belgium, France, with or without the RWE or E.ON control areas) or Central Europe (delimitation to be established), while Portugal and Spain finally implement their long-awaited agreement.

Note that several contemporary examples show us various concrete ways in which the functioning of markets can be unified when it is impossible, or

⁹ TSOs often say that they want to cooperate more but that the national laws or national grid codes do not allow them to.

simply not desired, to completely merge the pre-existing markets. In Europe we have the examples of England-Scotland (contrasting markets between 1990 and 2004), and also of Nordic Countries (with an electricity volume comparable to the United Kingdom). The Nordic countries operate their day-ahead wholesale markets as a single market when the grids allow it, while a shared mechanism for allocating interconnections again divides them into distinct zones when the grids become overloaded. Within the United States we find more examples, including Texas and PJM. In Texas (approximately the same size as France) a system operator (SO) has been put in place who does not own the transmission grid and who prevails over the vertically integrated incumbent companies to manage the flows of trades and congestions between the different zones within Texas from a single, jointly-organised energy market, the balancing market. In Pennsylvania, New Jersey and Maryland a SO was also put in place. PJM's geographic footprint has expanded in the last couple of years to include portions of West Virginia, Ohio, Kentucky and Illinois.

We must consider it a real progress when clusters of European Union Member States use regional agreements to expand their reforms in their own fashion to move faster and further than the EU rules require. Of course, one must ensure that regional groups of Member States avoid getting stuck on market or grid-access mechanisms that are incompatible or grossly discriminatory toward third parties from other Member States or regional groups.

3.2. A single priority action: improving the management of interconnections

As mentioned before, the EU internal market design could focus entirely on the issue of interconnections' congestion management. In practice, it would then be useful to see the Commission taken two decisions.

Firstly, to push national regulators and TSOs from their last holdouts in matters of voluntary improvements to provisions for managing congestion at interconnections, specifically by making each one clarify (under rules of transparency and non-discrimination):

1. the exact processes by which interconnection capacities are computed and what has been done to render them compatible with

the procedures of their partners on the various borders;

2. how domestic and foreign congestion factors are defined and calculated (= using reference scenarios and “power transfer distribution factors” –PTDFs-, for example);
3. what exactly are the procedures that guarantee equal and reasonable treatment of domestic and foreign congestion factors;
4. what provisions for cooperation are under study or in use to minimise congestion at the interconnections or maximise interconnection capacity.

The second useful decision would be to undertake a comprehensive technical and economic analysis of existing congestion management practices in the European Union so as to better distinguish best practices from bad and from those that aren't so good, and to identify potential improvements.

3.3. Secondary actions to improve the EU Internal Market Design

For the reasons mentioned above, the following secondary actions of harmonisation can mostly take place at the regional level.

3.3.1. Harmonisation to open a European bilateral market (“European purchases and sales passport”)

Quite aside from the congestion management issues discussed above, a minimum of harmonisation in the definition of contracts, clearing rules, rules governing declarations or nominations to TSOs, etc. would facilitate the creation of a “European energy transactions passport” that would allow supply and demand on a pan-European scale and thus open a large bilateral market. This harmonisation of bilateral market frameworks could doubtlessly progress more rapidly on the regional scale. It could be helped by the recent European Court of Justice's decision to reject the legacy of “Grandfathering rights” on interconnections capacity. Then many incumbents will have to look more closely at actual trading conditions in the EU bilateral market.

3.3.2. Harmonisation for reciprocated opening of organised markets (“virtual EuroPX”)

In addition to a harmonisation of European bilateral markets, a minimum of voluntary harmonisation of the rules governing counter openings and closings, registration, transferring orders, guarantees, clearing, etc., between the principal Power Exchanges in Europe would go some way towards increasing their general attractiveness and reinforcing the “open” quality of the European market and overall liquidity. These advances are envisaged on a regional scale, too, cf. OMEL becoming IberoPX or, for an example from another field, the integration of several Western European financial markets into Euronext. Similarly, do APX, Belpex, and Powernext not have some interest in offering the same service as a EuroPX, even a “virtual” EuroPX? May EEX and other Central PXs be next to proposing a virtual EuroPEEX?

3.3.3. Harmonisation for reciprocated opening of balancing mechanisms (“Balancing club”)

When national balancing mechanisms are no longer closed to supplies from abroad, why not reciprocally open balancing procedures while seeking a process that will preserve each TSO’s “security” properties while clearly making available to all TSOs belonging to the same “balancing club” all supplies that may be accessible to them.

4. Coping with the EU Industry Structures

While a variety of market designs are acceptable in a competitive energy reform, it is impossible to indiscriminately apply any one of them to just any industrial structure. A certain level of compatibility must always exist between the basic rules of the retained market design and the vertical and horizontal integration characteristics of the corresponding industrial structure. Of course, in some situations a few voluntary adaptations to the market design may remedy certain industrial designs that are otherwise inimical to competition. However, no finessing of the market design can remedy all industrial structures that are anticompetitive by nature. And then what can be done?

4.1. Rationale for handling today existing EU Industry Structures

Improving industry structures is one of the main difficulties in the construction of the internal energy market. The Commission cannot dictate to Member States the best industrial structures of activities destined to operate on a competitive market, nor can it promote appropriate matches between market designs individually chosen by Member States and the industrial structures they retain. There are no arrows in the Community's quiver beyond European competition policy¹⁰—which can touch industrial structures except under agreements negotiated for the acceptance of mergers and acquisitions or, more exceptionally, for “large-scale” dossiers of State Aid (major sectorial restructuring with government help, which is more widespread in the air transport sector, but has been reintroduced in Britain for British Energy). Member States are sovereign in defining the industrial structure of their electricity sector at the beginning of the reforms.

The industrial reference model for electricity reforms completely changed between 1995 and 2001. It has shifted from a preference for structures that are vertically disintegrated between generation, trading, and sales to final consumers toward a preference for vertical reintegration of production, trading, and final sales. Among the best illustrations of the changing “industrial paradigm” are the shifting attitudes of financial markets, financial analysts, rating agencies, and banks vis-à-vis disintegrated structures, especially concerning “pure” trading and “pure” generation (*Merchant Plants*). Bankers and financiers have finally joined company with stockholders and managers of firms operating in competitive energy markets and concluded that vertical reintegration is the best protection against volatility and the cyclical nature of markets. Nowadays, most national and European energy trades involve firms that are vertically integrated. Thus, it is no surprise to observe that organised wholesale markets (day-ahead and futures PXs) can remain quite illiquid and exposed to the weight of dominant operators. These dominant operators are not particularly interested in seeing the organised markets develop and, in particular, in offering futures contracts that can facilitate the entry of new operators. This foot-dragging by the dominant operators can delay the transformation of balancing mechanisms (generally detrimental to new entrants) into balancing markets (which can be more propitious for them). Finally, this lack of interest on behalf of the

¹⁰ Using transmission for opening domestic markets within a more competitive European market was identified long ago in the European Union and expressed during the Barcelona Council. Nonetheless, as we shall see below, this is a difficult goal to translate into an effective European policy.

dominants in a greater role for organised markets may also slow the transformation of interconnection management and the building of a new “borderless” cooperation mechanism between neighbouring TSOs.

We also observed intense activity in horizontal mergers and acquisitions, the most significant example of which is doubtlessly in Germany, where the ten biggest electrical and gas concerns that existed at the time the European directive was adopted in 1996 have become four today. As in the German example, integration and concentration between electricity and gas is another defining feature of this new “consolidation” phase in Europe’s energy industry. The E.ON-Ruhrgas merger approval by the government will remain a bone of contention and a source of confusion for a long time. It is unfortunate the Commission did not claim any jurisdiction over this merger. The same devil is haunting Spain today with a projected merger between Gas Natural and Endesa. However merger cases EnBW/EdF and EdP/GdP have shown that the Commission is not ready to be lenient in approving alliances that may hinder the liberalisation electricity process.¹¹

Finally, while gas wholesale markets and concerns have persisted in courting the entry of large European and North-American petroleum and gas companies, electricity wholesale markets, and electricity and gas retail markets, have not experienced any comparable influx and the small attempts that were made in the beginning forever disappeared. Thus, the upshot is a net “consolidation” of the industry on the pan-European scale, with an increasingly concentrated small number of international European firms in the sector, sometimes mockingly called the “seven brothers” in a transparent reference to the “seven sisters” of the international petroleum industry in the 20th century. Nonetheless, on a country-by-country basis, the European Union often comes across as juxtaposing domestic markets of monopolies or duopolies with a small competitive fringe in which one, two or three fringe new entrants operate. The potential for exercising market power is therefore huge at the national level of some Member States.

By contrast, the European Union is still in its infancy in matters of detecting and remedying market power in the field of energy. In a few Member States, a more or less permanent arrangement exists for detecting market power on some of these markets—but never on all of them—and even more rarely an array of organised remedies. The implicit assumptions appear to be either

¹¹ Other case to be watched is the offer made by GdF and Centrica on Belgian companies SPE (mainly producer), Luminus (supplier), and ALG Negoce.

that existing markets function sufficiently well that ongoing monitoring would be a waste of valuable time on a non-priority activity; or that detecting and correcting eventual anomalies is not very difficult, so that any problem will reveal itself spontaneously in a timely fashion. Both assumptions are wrong.

Market monitoring may not even be relevant to competition authorities, especially if they are not authorized to implement surveillance or corrective actions on their own. This appears not to be the case for the European Competition Authority, though, which has launched a sectorial enquiry “Energy”, nor for the Scandinavian Authorities, who met as early as 2003 to jointly tackle the area of energy—which they ultimately found quite difficult to understand and control.

4.2. A single priority action: the setting of a European Market Surveillance Committee Network

DG Energy conducts a very influential “Sunshine Regulation” exercise in the form of annual benchmarking of the progress towards an internal market, including the development of market structure. This work is very effectively enhanced by another, the quarterly publication of prices.

A complementary and stronger action in signalling lack of competition and refraining firms from exercising market power is the creation of a permanent market surveillance unit with diverse competences (engineering staff from the energy sector, specialists in computerized database management and data analysis software, and economists with expertise in modelling markets and conducting econometric tests). The first purpose of this team would be to give the Commission its own, internal expertise. By way of comparison, the US federal regulator’s permanent market oversight team (called OMOI) consists of more than one hundred individuals. Below a certain level of permanent surveillance activity, there is no internal expertise to be added on difficult subjects. Given the current European environment of generalised price hikes, there have been and will be an increasing number of referrals to the Commission and requests for intervention from the Commission (cf. the large electricity-intensive firms, for example). The second purpose of this surveillance unit is to create a network from national or regional similar units dedicated to monitor electricity markets and grid access, and wherever lacking to stimulate their creation and learning.

4.3. Secondary action: Harmonisation of the collection of, and access to, TSO's databases on markets, grids, and interconnections

TSOs are *de facto* inescapable intermediaries in the realisation of transactions on energy wholesale markets. To perform their function, TSOs need to collect and process large amounts of detailed information on generation, injections, market transactions and the corresponding grid access requirements. This information is thus vital to the authorities responsible for overseeing the competitive nature of the operation of markets in this sector.

Nonetheless, quite aside from any shortcomings in domestic legislation or regulation attributable to a failure to anticipate that the new markets may not be immediately or sufficiently competitive, TSOs themselves are not necessarily aware of the social usefulness of their function as data collectors or of the interest the public may have in this function.

Conversely, in some countries (the United States, Norway) TSOs or ISOs—whether integrated with Power Exchange (PXs) or not—are direct assistants of higher market oversight authorities. Without wishing to push the European Union in this direction, since it appears detrimental to some regulators and incompatible with the tenuous independence of some European TSOs vis-à-vis the incumbent operators, it would nonetheless be useful to open a voluntary framework for harmonising TSO's data.

On the regional scale, harmonising procedures for gathering, storing, and querying TSO's data would allow market monitors to fully engage in their mission of overseeing all operations with a cross-border dimension, which are increasingly common. This harmonisation should also facilitate greater cooperation between adjacent TSOs.

5. Improving the “Transmission and TSOs' Governance”

First, to state the obvious... the functions exercised by TSOs are vital. They can in themselves determine the success or failure of the construction of the European internal market. It is because they manage the vital and really “essential” facilities of the electrical industry and of the electricity markets.

Second, these infrastructures of the European internal market are administered by organisations for whom the internal market initially cures not the principal or normal mission or performance criteria and who have no explicit incentive¹² to establish close operational cooperation with neighbours to facilitate a unified functioning of the market.

Third, not every TSO fully controls the part of the network that is used for transport as opposed to distribution. Although there is a thin line between transport and distribution, voltage levels and the meshedness are determining. Note that a distribution and a transport network follow a different operational logic so that the latter should be completely under the control of the TSO.

At the beginning of the current phase 2005–2009, no powerful lever appears to exist that is capable of directly shaking up the status quo on a European scale. Conversely, we may be able to count on some regional subsets of TSOs being more interested in creating improvements. Reinforced procedures for regional cooperation are key and TSO's may be motivated to exchange their veto power for a real collaboration with their neighbours.

5.1. Rationale for, and main issues in, improving Transmission and TSOs' Governance”

TSOs do not passively manage the security of grid operations, they also actively intervene in flows, and thus by extension in corresponding market transactions. Managing the “technical” link between injections into, and withdrawals from, the transmission grid is often equivalent to intermediating between supply and demand on the wholesale market. Furthermore, TSOs also manage balancing mechanism, where they are “single buyers” of indispensable services for balancing and compensating all other wholesale markets, all of which are “forward markets” whose energy transactions are in fact cleared by this balancing mechanism. Finally, TSOs are *de facto* administrators and managers of the Union's internal market. Notably, they define the maximum and minimum extension of the internal market, in terms of size and volume, since they manage its entry and exit points, i.e. interconnections between Member States. They thus define the

¹² TSOs cannot always sign mutual agreements to coordinate grid rules because those are often subject to national laws (grid codes) and regulation.

conditions for access to the “internal market” by defining the criteria for using interconnections.

We have to keep in mind that all TSOs are, at best national, and sometimes infra-national (Germany, previously Denmark). Their legislation, regulation, regulators, owners, staff, experience, internal procedures, performance criteria, etc., are all essentially national. TSOs are thus national bodies, organised and regulated on a national scale. This is also true in regional markets such as Nordpool. Perhaps national laws – grid codes should be benchmarked to highlight where they hinder TSO cooperation. In general, is it a good idea to have grid codes implemented in national law?

The rules of the Nordic wholesale market include a mechanism for the coordinated allocation of interconnections managing congestion at all of their shared borders. Nevertheless this common wholesale market is Norwegian in Norway, and thus is not directly subjected to authorities from other countries. Yet, since the non-Norwegian TSOs are all direct stockholders in the common wholesale market company (the Nord Pool company), they all directly participate in its governance. Matters become more difficult for these Nordic TSOs when they need to harmonise anything other than their common wholesale market, as for example calculating interconnection capacities, creating rules for domestic balancing and counter-trading markets (= domestic management of congestion deemed internal by the TSO), establishing connection and access fees (level and distribution in G/L), joint planning of the expansion of domestic lines and interconnections.

In a nutshell, national TSOs in fact manage the core essential facilities of the European Union’s internal market, interconnections. Logically, this poses a series of problems related to organisation, coordination, and incentives (cf. Box 2).

Box 2

Key problems raised by the national tropism of TSOs

True independence of the TSOs

Although, in principle, the second directive enhanced the independence of the TSOs, this question remains a central one. There can be no credible European internal market if all TSOs are not truly independent of the other industrial, commercial, and financial interests in the sector. Thus, we continue to wait to see how formal (*legal*) independence will be implemented in the Second package implementation by Member States.

Effective decisional independence is essential. Indeed, there is reason to fear that the first “structural” obstacle to the construction of a competitive energy market (being the collusion between the transmission grid manager and the incumbent operator) will be quickly followed by a second “behavioural” obstacle to building a competitive, pan-European, market: collusion between the transmission grid manager and the “national interests”.

This problem has already been seen in the Nordic countries, in the context of their shared management of Nordic interconnections that, we recall, simultaneously define the effective size of their common market and the volume of energy allowed to transit between the sub-markets during periods of Market Splitting. The Swedish TSO, not really a firm but a government body, is apparently obliged to prioritise Swedish interests when they conflict with optimal use of the Nordic common market.

This Swedish example has the advantage of transparency—when things are stated with such clarity among partners sharing a common wholesale market. However, what would become of the construction of the European Union’s internal market if each European TSO would behave like that in practice, systematically putting the interest of its “stakeholders” upfront of any need to optimise the internal market as a whole?

A similar question arises in Germany, though on a local scale this time, since TSOs are averse to nationwide management of their transmission

grids and operation of their electrical systems (including reserves and balancing). Are we to conclude that the local interests of the stakeholders of each of the four zones take precedence over that of Germany as a whole, and that only “leftovers” are dealt with on the national level? Consequently, virtually all room to manoeuvre and adapt would already have been exhausted within Germany before any consideration is given to optimise the European internal market?

Coordinated operation of electrical systems

It would be useful for TSOs to be truly independent of incumbent operators and, moreover, as much as possible dependent of national interests. However, it would not be good at all if they were all independent of each other.

It is true that only few TSOs depend on themselves (Ireland, Cyprus, Malta, Great Britain, etc.) or are linked to a small number of neighbours (Portugal-Spain). Most of them manage many borders, and thus have many interdependencies.

However, TSOs can run their existing zones like autonomous areas, only adding rules of “good neighbourliness” at the borders, where they become interdependent. *A priori*, this does not violate any rule of the secure operation of these grids, which have functioned like this for decades. This arrangement does preclude, *a priori* to obtain the most from the potential of the EU internal market.

As observed in Sections 1 and 2, if interdependencies between zones are not managed in a highly coordinated fashion, each TSO will need to supplement its own “internal” scenarios with in-house estimates and its own protection against unknowns and uncertainties liable to arise from the interdependencies at the border. Unfortunately, it is by definition the domestic TSO that is the most incompetent and poorly placed to define, calculate, or forecast what might come at his borders from the outside. Neighbouring TSOs are better placed to tell what may eventually come from within them. Finally, in a too poorly cooperative game, none of these TSOs, wherever located, can truly predict the full array of new interdependencies on their own. Since these new interdependencies are the outcomes of the interactions of multiple events and scenarios from various origins. Ideally, all TSOs should invest together for jointly exploring their

new interdependencies so as to optimise their operational behaviour without imperilling their security.

Increased interdependence, spurred on by liberalised trade, could push TSOs to cooperate much more intimately. However, they will also be able to manage this additional interdependence in a more limited fashion. Even though this would clearly be suboptimal at the EU level, some TSOs may prefer to refrain from investing in new methods and processes for comprehensive cooperation that could undermine their independence...with other TSOs.

If truly reinforced cooperation is to emerge, it is to be hoped that it will involve technical (information, data, scenarios, algorithms, criteria, etc.), but also economic cooperation (costs, prices, investment incentives, economic efficiency decision criteria, etc.).

Coordination of the expansion of interconnections

The Maastricht treaty already foresaw the need for a “large trans-European grid” infrastructure that would, however, conditional to each Member State having a veto right over any intervention at its borders or in its interior, and within a budgetary framework only determined by the European Council. The Barcelona summit more recently launched the idea of bringing the interconnection capacity between Member States to a minimal value (10 per cent).

This cannot conceal the fact that the investment procedures in effect in Member States typically remain national. As a rule of thumb, each TSO studies the grid at its side of the border. Each one has its own methodology for combining the capacity and the direct costs of the interconnection with the other interdependencies specific to its grid. Using its own criteria, it evaluates the technical consequences (especially on security) and the economic consequences (if at all) exclusively in the context of its own control zone. Then, on each side of the border, the resulting investment projects are submitted to the nationally competent decision makers (stockholders, regulator, and minister) who decide on the basis of the domestic interests they represent. If the two national decision chains coincide up to the final decision, then each TSO assumes all the costs incurred at its side of the border.

There is nothing about this process that evokes any structured cooperation for expanding the European grid.

Harmonisation of grid access fees

One may expect the pricing of services rendered by TSOs to be a key element of the joint construction of the internal market. In fact, the opposite is true. Rather energy prices, per MWh on wholesale markets, are one of the major elements. This is what everyone is watching as a signal for the progress of convergence among national markets. Yet, the fees set by or for the “regulated” monopolists, their level and structure, the costs that underlie them, etc., remain a nearly impenetrable maze.

In practice, it are the same countries that have progressed quite far in creating competitive markets (Great Britain, Norway) that have also progressed in the development of incentive pricing structures, in which the grid access fee no longer consists of an annual postage stamp covering all the TSO’s expenses (except the costs of balancing) and in which access to the grid is no longer free for generators. Conversely, in the two biggest electrical countries of the Union (Germany and France = 1000 TWh) it still seems to be conventional wisdom that the electricity grid functions like a mailbox. This mailbox’ cost function is seen as so simple that one cannot find any logical or economic reason for the sender (the generator) to buy a stamp (or half a stamp), since the mailman can easily make the recipient (the consumer) pay for the whole service.

Network monopolies can be left outside of the economic sphere of market incentives at the early opening of competitive markets, but it is difficult to imagine how a competitive market can function smoothly in the long term using such costly infrastructures (60 per cent of the wholesale price of energy) without delivering appropriate economic signals to the market operators.

Of course, upward harmonisation (= collecting from those who have not paid at all; by setting $G > 0\%$) is more difficult to implement than downward harmonisation ($G = 0\%$, $L = 100\%$), which quite “spontaneously” spread across the continent. In light of the importance of transmission costs (especially costs associated with infrastructure facilities, congestion, losses, and reserves) to generators operating on highly interconnected markets, we must seek a harmonisation of TSO’s fee

structures at least within regional zones.

Harmonisation of connection fees

What was just said regarding grid access fees is also true, *mutatis mutandis*, for grid connection fees—another of the main “regulated” functions of the transmission monopolies, and another of the “mazes” confounding the internal market.

Independent of the diversity of TSO’s technical prescriptions and variations in the cost of the same technical act of creating a new connection, there exist a wide variety of pricing formulas that range between two extremes: “*Deep cost*”, in which the user being hooked up pays all costs incurred (though the constituents remain to be defined!) and “*Shallow cost*”, its opposite, in which a large proportion of these costs are socialized (= integrated into the overall grid access price).

Consequently, in countries using both the “Shallow Cost” and the integral “Postage Stamp” with $L = 100\%$, there is no grid-based economic signal transmitted to the generators. It is as if the grid was free, or the behaviour of the generators had no impact on the availability or costs of the grid. However, when there is no payment, there may be queues that the TSO manages using “In house” criteria for prioritising connections—which is hardly conducive to transparency in choices.

For as long as TSOs are far removed from any “investment boom” in generation, the choice between methods of price setting for connections has few practical consequences. In Europe, England and Wales are the only case combining a lengthy period of competitive reform with a high level of investment in electricity generation (the equivalent of 40 % of the original base). The Scandinavian countries are themselves just about to arrive at the investment phase.

Harmonisation of cross-border transit cost

There is a mechanism (ETSO CBT mechanism) to compensate for the costs caused by transits through the national networks, to which TSO's have to contribute in proportion to their net exchange levels. Currently this system does not take into account that due to the high wind penetration in some countries, other countries have to reserve their

interconnectors for the uncertain event of large transits. This opportunity cost can therefore be high even if transits on a yearly basis are relatively low. In other words, the legitimate penetration of wind in some areas of the EU electricity markets has to be harmonized with the creation of a single Electricity Market in the whole Europe.

5.2. Priority actions to improve today “Transmission and TSOs Governance”

At the beginning of the current phase 2005–2009, no lever appears to exist, capable of directly shaking up the status quo on a European scale. Conversely, we may be able to count on some regional subsets of TSOs being more interested in creating improvements using reinforced procedures for regional cooperation. They may be more motivated to exchange their veto power for a real improvement with their neighbours.

Naturally, all the factors that contribute to stonewalling and veto rights at the level of the whole Union can also exist at the regional level, but they may be more malleable if progress has already been made by some TSOs. Such progress is also more likely to be shared by corresponding PXs and regulators in an environment in which market operators (generators, suppliers, or traders) can derive a commercial or regulatory benefit from them.

The case of the United States reveals that competitive reform can sometimes create an interesting dynamics of business interests for the participating firms (cf. the expansion of the PJM zone, the evolution of ERCOT in Texas). The Iberian example reveals that the opposite is not always beneficial: postponing of the implementation of the Iberian market is clearly not favourable to the merger of the two Portuguese national champions.

This suggests that a push could be expected from the “interested” building of a few voluntary regional cooperation agreements much more than coming from the “institutional” discussion held in the “mini Fora” process. Therefore, we propose the two priority actions.

5.2.1. Encourage negotiations for reinforced regional cooperation agreements between TSOs (creating “virtual RTOs”)

During the current phase, some TSOs should be encouraged to take, or retake, the initiative in creating reinforced cooperation. They could be looked upon as so many components of a “virtual” regional ISO.

This clearly applies to the TSOs of the Iberian Peninsula. And, in light of the high degree of interdependence and the exchanges of flows in the western part of the European continent, this process could also begin between the TSOs of Benelux and France, who could sketch out a kind of “western RTO”, which would, of course, only be “virtual” by a greater voluntary cooperation. The abutting zones of RWE and E.ON could also join, either as parties to the accords (which presupposes they would put their veto rights on the negotiating table) or as simple users, according to their legitimate commercial and institutional interests.

5.2.2. Seek criteria for evaluating Europe’s interest in grid interconnections

What is needed is to weave the strands of the European interest from all threads of national interconnections. Again, the most realistic way to achieve this is probably to focus on smaller arenas, where the interests of one and the other are more easily reconciled through more precise targeting of the negotiations (Dutch’ connections to Norway or Germany, Belgium or Spain connections to France, etc.).

Nonetheless, there may be some pedagogical utility in reminding ourselves that an internal market exists above and beyond bilateral negotiations covering individual points on borders. We could seek objective criteria for evaluating the European interest in grid interconnections or issue a call for proposals for such criteria, and then submit them for discussion amongst stakeholders in interconnection projects. It would doubtlessly be useful to reposition national bilateral interests, legitimate though they are, in a broader context of the Community’s interest for the final EU internal market.

5.3. Secondary actions to improve the “Transmission and TSOs’ Governance”

5.3.1. Recommend extending the independence of TSOs to include ownership of transmission assets

We have seen that TSOs have a natural tendency to prioritise their historical zones over the interests of other zones within the internal market. The maintenance of a direct link, in capital and stock value, between TSOs and the generators in their historical zones of vertical integration ensures that the coalition of local interests versus the interests of other zones is cemented. If no legal precautions are taken, this perpetuates the veto rights of generators over any subsequent grouping of transmitters into ISOs or RTOs, real or virtual, responsible for the functioning and expansion of the internal market’s infrastructures.

5.3.2. Encourage harmonisation of grid access fees

As seen from the example of the Nordic countries, it is not necessary to unify grid access fees (or connection fees) to jointly manage a common wholesale market. However, these fees must show a modicum of compatibility if they are not to impede the normal functioning of this market.

We may, thus, expect generators to call for a basic level of harmonisation from regulators and/or TSOs. However, what generators cannot be expected to do on their own is to extricate themselves from an established system of “downward” harmonisation, in which access and connection is free to all generators in all transmission zones. In this event generators will be badly placed to request subsequent harmonisation, and TSOs will need to take the initiative and submit the first proposals for change. It would, moreover, be in their interest to do this before the resumption in investment that is on the horizon on the continent. It would truly be a waste to miss this window of opportunity and enter into the investment phase without having corrected the fee structure with its specious “freeness”.

5.3.3. Encourage TSOs to develop joint forecasts and planning

For coordinating the evolution of their operational procedures and the

development of their grids, TSOs must have access to shared forecast and planning elements. Thus, they should be encouraged to become involved in these cooperative efforts, which are clearly of greatest interest on the regional level and which could be the first elements of some of the “virtual RTOs” envisioned earlier.

6. Improving the “Regulatory & Regulators’ Governance”

Regulation in the European Union is decentralised, with fundamentally national roots. There is neither a supranational regulator who could create additional, complementary, rules to drive national ruling or behaviour toward convergence, nor a federal regulator with the power to legitimate national operational rules *ex ante* or launch *ex post* reviews to national decisions taken. Thus, pan-European convergence between national blocks has to be reached by other means.

6.1. Rationale for collective action between regulators

The best known other means is the process of voluntary agreements between the stakeholders: the Florence and the Madrid Forum. This is a self-regulatory process, but different from the German one since it integrates national regulators. Competent authorities and stakeholders meet voluntarily to establish principles or rules that, though not binding, delimit a “code of good conduct”. Nevertheless, when the underlying dynamics appeared to lag, the Commission sought to reboot it up with a Second Directive (and regulation) to contain national divergence and bolster convergence.

Nonetheless, in the absence of a central or federal regulator, these new shared rules or regulation have no outlet in technical and operational provisions that are uniform and ready to use. Simple guidelines stand in for regulation, laying down general principles susceptible to various implementations neither equivalent nor mutually compatible. Notably, new common rules must always be approved (= negotiated) in advance by the Member States under the rule of the qualified majority (Council of Ministers, or *Comitology*). This particular approval process always makes possible any “unified” block of “national interests” to veto convergence on some points it deems “vital” and adverse to its interests—or what it believes

to be its interests, since no national lobby can truly know all consequences of all variations on different possible changes.

Furthermore, the process of European convergence is incomplete by nature. This is of no consequence, and thus ruffles no feathers and threatens no interests, in case of “national blocks” trading little with others or already ahead of European regulation. The classic example is Great Britain. Britons rarely have the opportunity to verify the existence of this European-style regulation, since Great Britain manages energy systems that are –soon to be said: “have been”- largely self-contained and has a good lead on the competitive content of the EU regulation.

This situation is almost exactly reversed on the continent, where despite the overlap of energy systems, their meshed infrastructures, and the persistently reiterated need to adapt national regulatory frameworks to bring them up to a European standard, implementation of a uniform framework for the competitive functioning of grids and markets has proven impossible.

However, since a truly “seamless” functioning between Member States cannot be directly created by regulations emanating from the EU, it remains an attempt to reach a voluntary organisation among regulators on a regional basis. Of course, nothing guarantees that “regionalisation” of the actions of regulators actually reinvigorates the construction of the internal market. It is also necessary that TSOs, PXs, and mostly “market forces” find their interest in building “regional internal markets”, even *a posteriori*. But without regulators, the institutional feasibility of a renewed regional dynamics for building the internal market could fail to materialize (see box 3).

The principal interest regulators could find in pushing to the regionalisation of their domestic markets would be to create “market dynamics” and the concomitant “market discipline” that would facilitate the exercise of their jobs and the achievement of their goals. Without a vibrant market, the regulator is responsible for everything...and can be held responsible for anything. The regulator also spends a lot of time arbitrating “trading” between the national champion(s) and domestic political authorities. In a more active market, market players assume their responsibility more directly, and regulators theirs. There is more clarity and less ambiguity. The dream competitive reform scenario for a regulator is that market forces do most of his work while he can claim all the merit for being such an excellent regulator. European national regulators have therefore every interest in

voluntarily seeking to expand their domestic markets to develop the competitive dynamics that are very difficult to build on a purely national basis. They also have all the competences required for finding the means to realise new advances compatible with the unique characteristics of the energy system and the reform in their country.

Box 3

The main challenges today in 'Regulatory and Regulators' Governance

Implementation of the second directive: independence and means

So far we have assumed that the Second Directive would be implemented by the Member States, but this is, in fact, one of the major concerns. Before proceeding any further, national regulators are a must. Will these national regulators have a sufficiently arm's-length relationship with their governments? Will they have the powers and resources to fulfil their missions? In each Member State it is vital to draw the regulatory competencies that need to be put to work building the internal market.

European mobilisation of national regulators

The competences of national regulators must absolutely be mobilized for the construction of the internal market. This is essential because the Commission lacks institutional means, resources, and relevant information to do it all alone.

The "European Regulators Group for Energy and Gas" created by the Second Directive is a structural incentive to rejuvenate national regulators' interest in building the internal market. This is especially true if the dynamics of construction can be sustained or extended by the Commission. In the absence of such a dynamic, national regulators may be tempted to limit progress on the European front to make their work easier on a strictly domestic level.

Regionalisation of the construction of the internal market

During the current phase, construction of the internal market could continue to advance in a decentralised framework in which national regulators could play a key role. We may consider that the problems of the internal market can best be addressed where they actually arise, which is what regulators already know how to do within their “national blocks”. Problems of unification and convergence between Member States are most pertinent where trade is larger, interconnections most sought after, and wholesale market prices already tending to converge. Voluntary regionalisation of convergence between some pioneering “national blocks” thus appears to be a promising step in the right direction during the current phase (2005–2009). In the best case it would work so well that some institutionalisation of the convergence could be achieved within the existing “mini Fora”. In less successful cases deeper regionalisation will grow apart of existing “mini Fora”. In the worst cases nothing will emerge without any “external” push to be discussed in the coming years.

Notably, regulators could bring their institutional competences to bear on this, which would be particularly valuable for successfully combining potential regional advances with the existing state of affairs at the national level and selling it to their respective governments and public opinions. This would also be a useful experiment with the exercise of the ERGEG’s new function of advisor to the Commission, where regional initiatives could inject elements of dynamics and innovative “best practices”.

Concerted professionalisation of regulators’ personnel and regulatory environment

Regulation of the electricity sector is not a temporary phenomenon. Owing to the fact that its infrastructures retain an “essential facility” nature, a sustainable form of regulation will need to be practised for a long time. Regulatory functions thus become ongoing professional activities, even though the individuals who exercise them may come and go.

Across Europe, if we include professionals performing regulatory activities within regulatory bodies and DG TREN, regulated bodies, various consulting firms on one side or the other, many EU or national professional associations, and large companies in the energy sector and large consumers, there are probably about 2000 professionals.

Furthermore, as we see energy challenges become increasingly intense and intractable worldwide and in the European Union, the competitiveness of the European economy and the welfare of its residents will depend more and more on real efficiency in the regulation of the energy sector.

The moment is appropriate for enhancing the professionalism of this environment throughout Europe, so as to help national regulators and create a truly common professional knowledge in European regulation. While it may be too expensive for a single regulator to invest in professionalizing its human resources on the scale of the nation, with approximately constant fixed costs this investment could be very profitable on pan-European scale. Then a concerted investment in European regulation improvement would appear to be a very “constructive” way to pursue building the internal market during the current period.

6.2. Priority actions to improve today “Regulatory & Regulators’ Governance”

In the context described above, the two following priority actions aim to encourage initiatives from the regulators to stimulate new steps in the voluntary construction of the internal market.

6.2.1. Encourage bilateral and regional harmonisation agreements between regulators (Rules for reserves and balancing, access to interconnections and congestion management, compatibility of access and connection fees, joint approval of investments in the grid, etc)

On the bilateral and regional scale, regulators should be encouraged to examine (within their fields of competence) the minimum conditions for expanding their domestic markets into wider markets: For example, harmonisation of the rules to share access to a pool of reserves or of supplies for balancing mechanisms, rational management of interconnection capacities and their congestion, case-by-case adjustments of access fees and connection fees to facilitate cross-border entry between the countries, shared procedures for approving investments in the grids, etc. Those having already reached this level of reciprocated openness could address other

issues like the compatibility of rules for retail markets—especially information management processes—and for metering equipment (especially *smart meters*).

6.2.2. Develop a pan-European regulatory knowledge and training in the European Union.

Owing to the high cost of creating efficient regulation, especially the cost of investing in the professionalisation of human resources, it would be useful to invest on the scale of Europe to develop an efficient knowledge and professional training. A “rule of thumb” suggests that in all of Europe at least half of the professional issues that regulators deal with are common. Furthermore, this proportion should increase as Europe’s regulatory framework converges, especially as implementation of the Second package makes itself felt. Also, as has already been demonstrated—especially in studies by the World Bank—many of the human capital costs to regulators are fixed costs that would be less onerous if they were spread out more among regulators.

Finally, the European Union is constructing a regulatory framework that has no equivalent anywhere in the world. Thus, it would be particularly opportune to develop a corresponding knowledge and training, while constantly seeking to increase the professionalism and effectiveness of this regulation. One institution already exists within the European Union that has already begun this labour in collaboration with European regulators: the *European University Institute* in Florence. Therefore it seems strongly recommended to support the *Florence School of Regulation*, namely its programme in charge of research and training in the area of energy regulation.

6.3. Secondary actions

6.3.1. Associate national regulators with the Commission’s evaluation activities

Since national regulators possess competencies and direct information in the Member States and have collectively become the Commission’s advisor in matters of regulation, it would be useful to permanently associate them with the design and implementation, depending on the case, of the Commission’s

evaluation activities. Especially for the annual benchmarking reports and the major progress report of 2006.

A new, specific contribution that the regulators could bring to the table would be the progressive achievement of a regional “status and outlook” report, using the same template as those for regional internal markets. One strength of this new contribution could be that it would permit periodic identification of blocking and unblocking factors, as perceived by regulators in the exercise of their missions on the regional scale.

Another interesting aspect of this association would be to open up a space in European public opinion for challenging evaluations and healthy emulation among national regulators, the regional groupings they constitute, and the Commission itself.

7. Conclusion

We have no electricity “Single Market” in the European Union. But we could have one. Not tomorrow but within a decade. Electricity industry is an intensive capital industry whose infrastructures and facilities constrain for a very long time the actual size and shape of its markets. However an EU single market is actually feasible in technical and economic terms, even if it never does assume the form of a complete merging into a single pan-European mechanism for the operation of all markets and all grids. The workable type of “Single Market” we can reach is an internal market that functions with no or with limited “border effects” between Member States or between regional groupings of Member States.

Then the core difficulty faced by this goal is not being unfeasible but being attractive enough and for a long time. Since competitive reforms are modular by their very nature. Since many modules have to be harmonized to make an EU internal market work and to make it robust. It results in a reform which is very demanding over a rather long period of time.

This is exactly what this paper would like to contribute to by setting eight priority actions and twelve secondary improvements which can sustain the dynamics of construction of the internal market, from today to 2009.

