

What can the US learn from the European experience in the construction of a real integrated electricity market?

Yves Smeers*

Harvard Electricity Policy Group,
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* Tractebel Professor of Energy Economics, Department of Mathematical Engineering and Center for Operations Research and Econometrics, Université catholique de Louvain, Belgium

Et ainsi, ne pouvant faire que ce qui est juste soit fort, on a fait que ce qui est fort fût juste (Pascal, Pensées (1670))

1. Introduction

The invitation to participate in this panel reminded me of that student, back in High School, who had been asked, “what do you know about the battle of Waterloo?” He answered “nothing”, failed the exam but contested the decision. As he argued, he had been asked to indicate what he knew and this is exactly what he had done. “Nothing” may be a reasonable answer to the question “What lessons can we (the US) learn from the European experience” in the construction of an integrated electricity market. But only saying “nothing” does not justify crossing the Atlantic and a participation in a panel. Like the student of the story, I should say more during these 15 minutes. My answer will thus be “not much, but something”.

This preliminary remark by no means implies that “not much” happened in Europe in terms of electricity restructuring. On the contrary, some European countries and particularly the UK and Norway were at the forefront of the movement. The whole story even started in the UK under the strong leadership of Mrs Thatcher. Restructuring also took place in Norway with less disruption. Europe was also innovative for integrating electricity markets. Nordpool, which progressively developed around Norway and now comprises the Nordic countries besides Iceland, operates very well. None of these movements was the result of an action of the European Union (EU). In contrast, progress has been slow in the “Internal Electricity market” (IEM), which the EU initiated. I gather from the description of the objectives of the panel that it is the IEM that is mostly of interest to this audience. I will therefore concentrate on that market with occasional references to Nordpool.

It may be relevant to first try to relate this discussion to US concerns. FERC order 2000 and the creation of RTOs provide the opportunity to do so. On June 19 2001, FERC organized a technical conference on interregional coordination. At FERC’s request, PJM later submitted some comments arguing the necessity for FERC to induce a sufficiently harmonized market design in order to properly address the seam problem. On July 12, FERC issued several orders in relation

to the creation of four RTOs in the US. Various statements were made on that occasion with regard to the opportunity of being more or less directive in the process of creating RTOs. In one case at least FERC was directive as it ordered the creation of a single North-Eastern RTO based on the PJM design. The advantage of adopting a common market paradigm, or at least a sufficiently harmonized market design, and the possible need to be directive in the process is the question that I will try to address with reference to the IEM experience.

Needless to say the situations and institutions of the US and the EU are not the same. The IEM can thus at best constitute a case study. But the physics and the economics of power systems are the same so some of this case study may have a general validity. Experience suggests that the unstructured diversity that currently characterizes the European electricity industry and the decentralized decision process that results from EU institutions are a real handicap in the construction of the IEM. Specifically my point is that the IEM illustrates how difficult, if not impossible, it is to construct an integrated electricity market without requiring at the outset some common features in the design of the market. EU experience does not provide enough evidence to show that these features imply a unique market design, or the PJM model for that matter. I will therefore not get into that issue. Common design features can be voluntarily adopted as in Nordpool; this is obviously the ideal solution. When not voluntarily adopted, I believe that the central decision level should find a way to impose them. Without these common features, progress may be considerably slowed down, if not completely stalled, as the example of the IEM shows.

I will try to make this point by concentrating on the seam problem that concerns the interactions between Transmission System Operators (TSO is the European terminology for system operators). This problem underlies several questions raised in the panel. Seams between systems constitute a major barrier to the completion of the IEM. They are also relevant to the design of interacting RTOs in the US as they were to the relations between North-eastern ISOs. I will argue that most of the difficulties encountered by the IEM are due to the fact that European Institutions (I will clarify the term later) failed to impose a sufficient set of common design features on individual markets in the first IEM legislation (EC Directive 96/92 hereafter referred to as the Electricity Directive). It is now well recognized in the EU that interconnections indeed create a problem and the removal of seams is a topic of great discussion. But as briefly argued here and

more extensively discussed in a companion paper (Boucher and Smeers (2001)) the proposed solutions are not really satisfactory. This lack of a common structural model has another consequence, which is not yet really perceived in Europe and that I will not have the opportunity to discuss here because it is not (yet) a result of the IEM experience. It has to do with the capability to adapt to the fantastic volatility of electricity prices. One can indeed argue (see Smeers (2001)) that the same lack of common design elements and hence of a common market of electricity and associated services may drastically reduce if not jam the efficiency of the markets of electricity derivatives that are currently developed. None of these (current and foreseen) difficulties is a fatality of the restructuring process. Referring to Europe, more harmonization at the outset allowed Nordpool to properly, if not perfectly, deal with seams and to operate a smooth electricity derivatives market.

2. The European Internal Electricity Market and its Context

2.1. The scene

Only lawyers or political scientists have the necessary expertise to properly delineate the respective jurisdictions of the EU institutions and the Member States. This is also true in the energy sector (see Hancher (1998)). I will limit myself to set the scene through a few very rough (and hopefully correct) statements.

(i) The treaties did not endow the EU with an energy policy. There is no EU Energy Regulator.

The European Commission cannot directly enact energy legislation. It can only submit proposals of legislation to the Council (of Ministers of Member States) and to the European Parliament. If and when finally adopted by the Council and the Parliament, the legislation may turn out to be quite different from the initial propositions of the European Commission.

(ii) The founding Treaty endowed the EU with a strong competition policy and a hard competition law. The Treaty also foresaw exceptions to competition law when one can prove that its application would endanger the capability of undertakings to fulfil their public service obligations. The jurisprudence in electricity is limited but it shows that attempts by the European Commission to force Member States to remove monopoly rights

through competition law can often be challenged with success in the Court of Justice through this exception.

- (iii) The founding Treaty allows the European Commission to enact legislation relating to competition affairs. These are referred to in the following as Commission Directives. The European Commission attempted to use that capability once in the IEM. Member States reacted negatively; the European Commission withdrew its proposal and never attempted again to introduce Commission Directives in the electricity sector.
- (iv) EU legislation can take two main forms, namely Regulations and Directives. A Regulation applies as such while a Directive needs to be transposed in national law. Directives therefore give Member States some leeway to interpret the law. Legislation of this type was referred to before as a Council Directive (Regulation) and is now a Council and European Parliament Directive (Regulation).
- (v) In its legislative process, the European Commission must abide by the principle of “subsidiarity”. The principle, which is enshrined in the Treaty, restricts the action of the European Institutions to areas where the EU is better placed than individual member States. One may submit that the principle is frequently abused with the consequence that decisions where an agreement is difficult to reach at the EU level are simply “left to subsidiarity”.
- (vi) There exists a Trans-European network policy. That policy is more and more mentioned as a possible instrument to increase interconnection capacities.

2.2. The actors

- (i) We shall refer to the European Commission, the Council, the European Parliament and the Court of Justice in their role defined above.
- (ii) National electricity regulators exist in all Member States except Germany where the electricity sector is mainly subject to (national and EU) competition law. The Council of European Electricity Regulators (CEER) consists of the national regulators and a member of the German Ministry.
- (iii) EU transmission system operators (TSOs), together with the Swiss and Norwegian TSOs constitute the European Association of Transmission System Operators (ETSO).
- (iv) EURELECTRIC is the association representing the companies of the European electricity supply industry

2.3. The plot

The creation of the IEM is part of the completion of the internal (or single) market that was the main focus of the European institutions in the late eighties and early nineties. The endeavor required a significant legislative effort; but the task remains largely uncompleted in the electricity and gas sectors. As is well known, electricity is difficult to cast in a pure market framework. The product cannot be stored, which requires that supply and demand be always in balance; also the electricity system is subject to physical constraints that only allow very limited tolerances. All this requires a very strong co-ordination of activities. Standard economics teaches that prices and quantities are the two main instruments of co-ordination. The inception of the market in the power industry suggest a reliance on prices. But this requires that these prices be “right”, an objective that is not always easy to accomplish. As frequently recalled in the recent Californian debate, prices may not co-ordinate very well in cases of extreme scarcity (Chandley et al. (2000), Hogan (2001), Joskow (2001)). Interconnections are scarce resources in the power systems inherited from the monopoly regime with the consequence that special care should be given to discover their “right” prices. Were it not for the exception to competition law foreseen by the Treaty, the following (and somewhat provocative) reasoning could have been made: access to the electrical grid is essential to competition in electricity. Because of the important externalities created by the grid, subsidiarity mandates that its access be ruled at EU level. Therefore, all legislation related to access to the grid should be taken through Commission Directives. This extreme reasoning suggests that the inception of common market mechanisms capable of revealing the right prices of interconnections should have been a key element of the whole IEM process. This would have imposed structural constraints on individual systems from the very beginning. But this is not what happened.

Interconnection is not a new issue in Europe. The industry had focussed on interconnections well before the beginning of the discussions on restructuring. UNIPEDE, the ancestor of EURELECTRIC indeed regularly conducted studies on maximal economic exchanges between control areas in the pre-restructuring days. Even though the computations were often based on the pipeline model of transmission lines, the capacities of these pipeline were computed from optimization of security constrained economic dispatch using a DC load flow approximation. Computational models of this type were available in the open literature in the early seventies. The

economic interpretation of nodal prices was also known to the industry. Boiteux in EdF, who is probably best known for the peak load pricing theory, wrote in the early fifties a paper explaining how a constrained dispatch could be interpreted in terms of decentralisation of plant operation through nodal prices (Boiteux and Stasi (1952)). Even ignoring this paper, the work of the MIT group (Schweppe et al (1988)) was known, at least to some important European companies in the early nineties, that is from the very beginning of the discussions on restructuring. In short the European electricity industry was equipped to tackle the interconnection problem both computationally and economically. But governments of Member States had other priorities; all the attention was devoted to monopoly rights and public service obligations. Market design was not an issue.

2.4. The play

Act 1: Directive 96/92

The very first contribution to the IEM took the form of two rather innocuous Council's Directives (transit and price transparency) that are now of historic interest. EC Directive 96/92 (EC 1996) or the Electricity Directive was the first real breakthrough. It came after 6 years of negotiation and considerable consultation. The Directive mostly concentrates on the removal of monopolies in the electricity industry of the Member States but does not pay much attention to the market structure that may result from this elimination or to the interaction between these markets. The European Commission initially had stronger plans in mind. Its original intent was to follow a dual Directive approach that had proved successful in telecommunications. A first (Commission) Directive would remove monopolies on the ground that they are per se incompatible with the Treaty. A second (Council) Directive proposal would deal with the peculiarities of the power sector. This approach left the issue of market design to the Council Directive and hence did not put the European Commission in a position to impose a common market model. But the Council would initiate a process whereby to search for such a common model. The Member States perceived the attempt to remove monopoly rights through a Commission Directive as a "coup". The European Commission finally withdrew its two Directive proposals and later introduced a proposal for a new Council Directive, which was to become the current Electricity Directive. This was probably the only feasible strategy left to the European Commission: any attempt to proceed further with the two tier approach would have stalled negotiation of the Council Directive and hence the

whole process. There is indeed no point in removing monopolies in electricity if one is unable to organize its market. The European Commission finally ended up with very little leverage on Member States because the application of competition law to remove monopolies in the power sector proved difficult. This limited capability was later confirmed by the Court of Justice in various cases. This limitation restricts the scope of the lesson but does not void it. True, EU governance requires more decentralization than in a Federal State. But the IEM experience can testify of the outcome of decentralization when the initial points of view at the regional level are far apart.

The Electricity Directive has been analyzed at length by different authors. Hancher (1998) calls it “a framework in the loosest sense of the word: its objectives are laid down in very general terminology and moreover, Member States are given a substantial degree of choice in how they are about introducing more competition into their electricity markets. Indeed the margin is so substantial that it would seem possible for the determined anti-market countries to avoid introducing any meaningful degree of competition at all”. The common view is indeed that the Electricity Directive is a rather weak law. It mainly deals with methods to partially or completely remove entrenched monopolies. The Directive does not introduce or hint at any common market design. This is completely left to subsidiarity, that is, to the transposition into national law. The Directive mandates access of third parties to the network but only foresees that access can be regulated or negotiated. The details are also left the transposition into national law. This implied for instance that Germany, which does not have any energy regulator, could choose the negotiated access to the network. Previous studies had provided ample evidence that the European power system was indeed quite diversified. Reading the Directive, one may get the impression that the Council was not really seeking a “real integrated electricity market”. Its main goal was to find a common position that in some sense would minimize the deviation with respect to the national electricity systems of the time. This was a purely political process with not much concern for economic consistency.

Aside from minor exceptions of no interest here, Member States had two years to transpose the Directive into national law. As the European Commission would soon realize; the outcome of this transposition was far from a “real integrated single market”.

Act 2: the second Harmonization report.

The problems of the seams between Member States systems appeared quickly. It is a key theme of the second Harmonization report (EC1999) published by the European Commission after the transposition period. The report begins by recalling the objective of the IEM namely “the need to insure that the implementation of the Electricity directive does not result in 15 liberalized but separate and rather isolated electricity markets, thereby failing to create a common market.”. This objective is justified by the claim that “It is the creation of one common market which is expected to produce the benefits from synergies, scale economies and shared resources throughout the EU”. In order to achieve this objective “obstacles to the cross-border trade of electricity among Member States have to be actively addressed”. The report is confident that this can be done now that Member States have transposed the Electricity Directive: “It was in the logic of a gradual approach to implementing the internal electricity market that specific issues have to be addressed after the principal strategic implementations choices have been made by the Member States”. This optimism may be unjustified: fatal errors can easily occur in a process as complex as the restructuring of a network industry. A fatal error in the quest for a real integrated market occurs when the pieces do not fit, that is when the individual markets cannot be integrated because their design does not permit.

The seam problem had already been identified in May 1998 when “available interconnector capacity and cross border transmission pricing were recognised as key issues”. The problem had been posed to the TSOs who were “encourage(d) to co-ordinate their actions via a new representative association of all independent European TSOs, and to develop an adequate system of cross border tariffication and settlement in the light of the development of the competitive internal market”. As with the Electricity Directive, the European Commission initiated a process but did not lead it. In line with subsidiarity, it is the responsibility of the Member States, here the TSOs, to produce a solution. At best, the European Commission could launch “an independent study on cross-border electricity transmission tariffs in order to evaluate the different proposals...”.

The second harmonization report does not elaborate much on the real nature of these seams. It simply notes, “it is in fact organisationally and economically difficult to choose a supplier situated in another Member States, in particular if a third or fourth Member State has to be

transited. The reason for this is simple: there is no tariff framework for cross border transactions. Each transaction has to be negotiated, and each concerned TSO will require a transmission fee, which is not necessarily co-ordinated with the transmission fees already payable to other TSO. Thus the sum of all required transmission fees will in most cases add up to a prohibitive amount, making it cheaper for the customer to stick with the local supplier.” Pursuing on this reasoning the European Commission report concludes “At the current state of discussion, the key issues to be solved are: (i) to reach an understanding which costs may be recovered in the access fees, (ii) to reach a conclusion with respect to nodal (note: nodal means non transaction based in European Commission parlance) vs. transaction pricing, (iii) to agree on a pricing policy that does not involve “pancaking”, (iv) to agree on a pricing policy for congestion”.

Some remarks of the report illuminate the underlying reasoning. Specifically, congestion pricing and capacity allocation are seen as closely related but not identical problems: “pricing for congestion is closely related to the allocation rules for available transmission capacity”. This distinction between congestion and allocation rule is not unusual. A prominent commentator even argued, “this (capacity allocation) is dealt with in the same context as congestion management, which is to confuse two separate issues” (Hancher (2000)). Also congestion of the interconnection is seen more as an accounting than as Nordpool a market design problem: following a common reasoning, the report notes, “Experience from suggests that the costs of congestion resolution do not even reach 1% of the total transmission costs (infrastructure costs). Thus the actual cost impact of the system chosen (note redispatching, counter-trading or auctioning) is limited and emphasis should be put on a simple and trade encouraging approach.”

The diagnostic of the European Commission is clear: the solution of cross border trade problems requires an add-up to the Electricity Directive, not a major overhaul. The main steps of the restructuring process were achieved in the transposition of the Electricity Directive in full compliance with subsidiarity and these results should not be questioned. True, handling cross-border trade requires by definition more centralization, but not too much: it suffices to find an agreement on two problems, access charge to the grid and allocation of existing interconnection capacities and congestion pricing. The Florence Regulatory Forum, initiated by the European Commission in 1998, will be in charge of these questions. Nowhere is there any hint that it might

be necessary to have common elements of market design in order to achieve “a real integrated electricity market”.

Act 3 the Florence Regulatory Forum

In 1998 the European Commission set up the Electricity Regulatory Forum of Florence. “The Forum convenes twice a year at the European University Institute near Florence and consists of national regulatory authorities, Member States, European Commission, Transmission System Operators, electricity traders, consumers, network users, and power exchanges. The Forum was set up to discuss issues regarding the creation of a true internal electricity market that are not addressed in the Electricity Directive. The most important issues addressed currently at the Forum concern cross border trade of electricity, in particular the tariffication of cross border electricity exchanges and the allocation and management of scarce interconnection capacity.” (EC 2001a)

Again, the responsibility of the restructuring process is in the hands of representatives of the Member States. But the objectives of the Forum are this time well focused; there are two questions namely “the tariffication of cross border electricity exchanges and the allocation and management of scarce interconnection capacity”.

I will quickly dispose of the first point because it relates to harmonization more than to economic co-ordination. As noted in EC2001b, “The Forum rapidly agreed the basis principles upon which a tariffication must be based; transparency, simplicity, cost reflectiveness and non discrimination”. It then undertook to propose a one-year provisional tariff based on these principles. Cost reflectiveness and non discrimination are potentially quite rich concepts that can be developed into a doctrine. Maybe the European Commission could have tried this approach and use its capability to enact a Commission Directive on non-discrimination in access to the electric grid. After all, this is a competition issue, a domain where the European Commission has extensive powers. Also European institutions had been more intrusive on questions of access in telecommunications. But the obstacles encountered in electricity were probably too formidable. The European Commission and Forum documents often mention “cost reflectiveness,

transparency and non discrimination” but never really elaborate these notions into a doctrine of access to the grid in general and to interconnections in particular.

After considerable debates the Forum proposed a transitory tariff that harmonizes the conditions of access to the grid. Pancaking is eliminated even though some national regulators are still fighting against the retained solution. The progressive elimination of the export tax, a notion that I find unbelievable (and certainly discriminatory and non-cost reflective) in a real integrated market has attracted a lot of attention. The export tax is still there today but it should disappear in the future. The very active subgroup of the Forum that worked hard on these issues is still amazed at how difficult it was to achieve this progress. But this was a real step forward.

My interest in this paper concentrates on the management of congestion of the interconnections as this is directly related to the co-ordination of activities through market instruments. Here again the Forum agreed on a general principle and concluded “that capacity should be allocated through market-based mechanisms”. The European Commission comments, “The adoption of these guidelines represents a step forward on this issue. However, their implementation in practice at national level is wholly voluntary in nature” (EC 2001b). These two statements are astonishing: recognizing “that capacity should be allocated through market-based mechanisms” in a market is more a tautology than a step forward. But subsidiarity seems to mandate that even a tautology should be interpreted restrictively: market-based mechanisms should drive the use of interconnections, but there is no requirement that they drive national grids. This maybe consistent with the institutions. The question is whether this is consistent with physical and economic realities.

There are different ways to answer this question. One is conceptual and based on economic reasoning. This is what I tried in Smeers (2001). Another possibility is to analyze the outcome of the process, in this case the Draft Regulation on cross border trade (EC 2001c) introduced by the European Commission in March 2001. This is the aim of a companion paper (Boucher and Smeers (2001)). Last, one can simply go through some of the statements of the Forum in order to assess their internal consistency. This approach is what I briefly attempt in the following.

ETSO produced a first report on congestion management methods for the November 1999 meeting of the Forum (ETSO 1999). The report examines different approaches namely, curtailment, auction of transfer capacities, market splitting, redispatching and cross-border coordinated redispatching. Two proposals were quickly disposed of, but for quite different reasons. The first proposal, namely curtailment, consists of allocation rules of the “First come first served” type. Not surprisingly, this approach was rejected as a non-market mechanism in the absence of a secondary market. The market splitting of Nordpool is the third proposal in the list. It was not retained either but for an opposite reason. Even though it is a true, but imperfect, market solution, and one that the European Commission favored, market splitting was rightfully considered as impracticable because of the current development of electricity markets in the EU. It requires some common structural elements that the national systems issued from the transposition of the Electricity Directive do not have. The ETSO report does not suggest any remedy to the situation. Similarly, the Forum did not propose any steps towards the Nordic organization and this notwithstanding the advantages accruing from adopting a model that is often reported to work well, and of which three of the four participants are EU members. It was obvious that the adoption of the Nordic market splitting would require further harmonization and possibly design constraints that Member States are not willing to accept.

Amazingly and in apparent contradiction with the above, ETSO recently issued a report (ETSO 2001a) arguing that market splitting is not sophisticated enough to deal with the important loop flows that result from the complex meshing of the continental grid. Again, I believe that this argument is correct: the Nordic system is a zonal pricing scheme. It may be effective for dealing with cross border trade between the Iberian or the Italian peninsula and the rest of Europe. But it would probably operate very poorly in the more central zones of the continent where the constrained flow gates change too often. But it is the combination of the two arguments that is interesting. Market splitting is recognized as a true market mechanism; it is too demanding for Europe in terms of market design but insufficient in its capability to manage loop flows. The logical conclusion would be to enhance the design of the national systems to accommodate a more sophisticated version of market splitting that takes care of loop flows. But this would question the results of the transposition of the Electricity Directive and intrude on Member State prerogatives.

Can one find alternative market solutions that are compatible with the diversity of systems inherited from Directive 96/92? ETSO's second proposal, namely the auction of transfer capacities seems to receive a lot of attention. Transfer capacities have a flavor of flowgate but with no underlying theory. They can be interpreted as continuously changing aggregate flow gates. Very much as it may be difficult to identify a small set of stable "commercially significant flow gates" (see the correspondence on this notion available from <http://ksgwww.harvard.edu/hepg/flowgate.htm>) it is difficult to specify a priori how the transfer capacities are changing ahead of time. Last but not least the definition of transfer capacities involves the very same difficulties as those invoked by ETSO in its second argument against market splitting, namely the existence of important loop flows in the central part of the European grid! The evaluation of useful transfer capacities therefore remains a serious if not unsolvable problem whatever the effort made by ETSO to define them. Auctioning transfer capacities does not help. Because usable transfer capacities depend on the transactions that use them, one needs to know the outcome of the auction to fully determine the capacity to auction! ETSO recently issued a new report (ETSO (2001c) proposing a coordinated auctioning of transfer capacities across Europe. Replacing transfer capacities by flowgate in that report would move us closer to the flow gate model. But even then, the lack of a true real time market would remain a serious shortcoming for implementing this flowgate model. Not surprisingly ETSO recognizes that there are indeed many implementation problems. ETSO was well aware of all these difficulties from the very beginning. It indeed already indicated in 1999 that " in many cases they (Net transfer capacity or NTCs) may be a somewhat ambiguous information.... to help market agents in managing the risk of transaction curtailment, NTC publication could include indications on upper or lower bounds, statistical uncertainty of published values and dependencies on numerous factors such as other cross-border exchanges in other directions" (ETSO (1999)). To be certain that users are sufficiently cautioned about the ambiguity of transfer capacities, ETSO went through considerable pain in various reports, elaborating on how careful one should be using them (ETSO (2000), ETSO (2001b)). It also insisted that its publication of long term transfer capacities could only be indicative (ETSO (2001d))and that ETSO members could not be held liable if the announced capacities were not available. The shortcomings of transfer capacities were recently confirmed in the interim report of an independent study requested by the European Commission, which also pinpoints the inherent difficulty of computing transfer capacities. A

brief reference to the US may help complete the picture. As in California, the organization of the transmission market (here the auction of the transfer capacities) in ETSO proposals is not meant to be co-ordinated with a PX. But in contrast with California, this is not a pillar of the market design since the Electricity Directive does not refer to any market design. It just happened that the energy and transmission markets are separated. The collection of these statements is frustrating but not surprising. These are not sentences extracted from their context; they are the context. They express a very simple but fundamental phenomenon; it is difficult if not impossible, to reconcile systems after the “principal strategic implementations choices” have overlooked the externalities that link them.

Counter-trading and cross-border counter-trading are the two remaining solutions examined by ETSO. Again I will not elaborate on their content but concentrate on what I see as signals of confusion and logical contradiction. Cross-border counter-trading or re-dispatching is a technical solution for relieving congestion that contains many elements of nodal pricing (in the US sense) (Cadwalader et al.). Because the European Commission requires and Member States agree that methods used for congestion management should be market based, ETSO had to examine how to charge the cost of cross border counter trading to those responsible for them. Nodal pricing is obviously a way to do this in a cost reflective and non-discriminatory way (in the economic sense). But ETSO does not mention nodal pricing even though cross-border counter trading is so close to it. It leaves the problem of allocating the charges of re-dispatching in a cost responsive and non-discriminatory way unsolved.

The whole story of the Florence regulatory Forum can be seen from different points of view. The optimist will rejoice that there has been progress in domains that required difficult compromises between initially diverging positions. This is true. But all the discussion about access charge could indeed be pursued independently of any underlying market mechanism. In some sense it was an easy problem. The pessimist will lament that even progress on access to the network has been quite slow because these initial positions were so far apart. But the logical inconsistency of the outcome of the work on congestion management and interconnection allocation is the real worry. The lack of a common market design and the difficulty, if not the sheer impossibility of moving towards common design concepts, did effectively constrict the Forum in its attempt to find a satisfactory solution to the seam problem. Keeping with the positive side of the argument,

one may emphasize the progress made and the fact that it was achieved in full compliance with subsidiarity. This may have convinced the European Commission that it was time to cast some the outcome of the work of the Forum into law. Even this was too much for the Council.

Act 4 the new legislative proposals and their dismissal by the Council

Hancher (2000) recently suggested that opportunities for legal advances with respect to the Electricity Directive at the EU level were quite limited. She argued that a new Council and Parliament Directive was unlikely: the process would take too much time and Member States could decide not to start the consultation procedures if the European Commission took the initiative of such a proposal. The events of March 2001 showed this to be a remarkable insight.

At the beginning of this year the European Commission took the initiative to make two new legislation proposals. One revised the Electricity Directive in a very mild way, that is without introducing a common market design (EC 2001d). The second legislation proposal is a Regulation on cross border trade (EC 2001c). Draft version of these legislation proposals were circulated widely, even if unofficially, for consultation. The Regulation is essentially based on the results of the Florence Regulatory Forum. As argued in a companion paper (Boucher and Smeers (2001)) these results are meager and the Regulation remains far from solving all problems. But it fosters thinking and foresees additional steps. On March 13 the European Commission adopted these draft legislation with the view of presenting them at the Stockholm meeting of the Council 10 days later. The European Commission saw the introduction of these two new proposals as a major event. Possibly as a sales argument, it even stated, with no real evidence, that this legislation would create “a truly integrated market, which means, for instance, that Europe will avoid the type of problems currently faced by California, which have resulted from inadequate legal framework and inadequate production capacity” (EC 2001e). At the Council, France, supported by Germany, dismissed the whole package arguing that California showed all the dangers of moving ahead too fast. In the May meeting of the Florence Regulatory Forum, the infinitely patient European Commission accepted the provisional export tax that it had rejected at the November Meeting.

Principles that have not been adopted in new legislation can still be implemented in the application of European competition law (Hancher (2000)). But designing markets through

competition law is an endless if not totally hopeless project. Is this all one can expect? Maybe not. The EU is endowed with a Trans European Network policy that can be invoked to build new infrastructure (see EC 2001b). Removing the congestion through increased capacity and harmonizing the access to this expanded network may be a solution. But there is no experience to date on this approach. There is another possibility. The power industry has been relatively silent so far. Maybe it saw the lack of market design as a protection against too much competition. California showed that uncertainty in market design could contribute to catastrophes that bankrupt even the most solid companies. The protection could turn into a threat. Industrial voices have recently expressed their concerns (Bouttes et al. (2001), Hansen (2001)) that it is not enough to talk about the market. One should also design it carefully.

3. Conclusion

Can this help draw some conclusions that might have the value of a lesson for the US? There is not much but maybe there is something. The message holds in a few lines: so far, the IEM has not been able to find a consistent way to remove the seams between its disparate systems. But Nordpool could do so on the basis of a more structured market design. None of the IEM Committees, whether the Council, the Forum or the pre Directive Consultative Committees has been able to come up with a good market design. But a single country, Norway designed a structure that would later serve as a basis for Nordpool. Can the IEM succeed in removing its seams without a common design? Extrapolation of the painful history of the IEM says no. Economic logic concurs. Is it because European institutions are flawed? Not necessarily; the subsidiarity principle also means that what cannot be decentralized to Member States should be decided at the central level. True, the burden of the proof that a central action is required may be heavier for the European Commission than for the Federal Energy Regulatory Commission. But the story of the IEM strongly suggests that “the Commission” should do its utmost to insure that the necessary elements of economic consistency are present in all parts of the market that it wants to integrate.

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