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DIRECTORATE-GENERAL FOR ENERGY AND TRANSPORT

DIRECTORATE C – Conventional Energies  
**Electricity & Gas**

**DRAFT**

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## **STRATEGY PAPER**

### **MEDIUM TERM VISION FOR THE INTERNAL ELECTRICITY MARKET**

#### **1 Overall Objective**

**The Community is seeking to create a competitive market for electricity for an enlarged European Union, not only where customers have choice of supplier, but also where all unnecessary impediments to cross border exchanges are removed. Electricity should, as far as possible, flow between Member States as easily as it currently flows within Member States.**

**Improved cross border flows will increase the scope for real competition which will drive economic efficiency in the sector, leading to benefits for customers both in the business and the household sector in terms of lower energy prices, improved service and products tailored to their own needs. These benefits will feed through to higher overall economic growth in the European Union.**

#### **2 Background and Context**

##### **2.1 The new Directives and Regulation**

The new electricity Directive and Regulation on cross border exchanges was adopted by the Council and Parliament on 16 June 2003. Among the measures required are full market opening, legal unbundling and the introduction of sector specific regulation in all Member States in order to ensure non-discriminatory access to networks. These measures will contribute significantly to competition and this paper starts from the assumption that the required measures will be implemented rapidly and comprehensively by Member States with the same common objective of a competitive market. National Regulators, in particular, will have a vital role in setting up and enforcing most of the aspects of market design discussed in this paper, in particular by removing inappropriate technical and financial impediments. Similarly, legal and functionally independent system operators will, by providing non-discriminatory access to networks, be responsible for the day to day functioning of the market.

Meanwhile, the Regulation on cross border electricity exchanges allows for the adoption of specific binding guidelines for cross border transactions. This will allow the development of harmonised conditions of access to the European network for those wishing to buy, sell (or trade) electricity. It should lead to coherent cost-reflective charges for the use of European transmission networks, the removal of other distortions of cross border trade, and the operation of the transmission system, in

particular congestion management, so as to promote fair competition and economic efficiency.

Considerable progress towards the objective of an internal market without barriers has already been achieved. For example, from 2002, ETSO introduced a mechanism for cross border tariffs that considerably reduced the costs of exchanging electricity across borders. In addition, voluntary guidelines for congestion management were agreed at the sixth meeting of the Florence Forum and these have been partially implemented. Finally, considerable technical work has been carried out in preparation for a more comprehensive integration of markets by organisations such as ETSO and the UCTE as well as the Council of European Energy Regulators (CEER).

The Commission will be required to monitor the operation of the electricity and gas markets at a number of levels. It will produce an annual report on the overall functioning of the internal market, which, every two years, will include an examination of public service obligations. In addition, by 1 January 2006, a comprehensive report will, in particular, examine any additional measures necessary to maintain high public service standards and ensure the functional independence of distribution system operators in advance of full market opening. Member States will also be required to report on a biannual basis on their supply demand position from which the Commission will produce a consolidated report.

## 2.2 Legislation relating to the environment

The Renewables Directive entered into force in September 2001 and Member States have already set targets relating to consumption of renewable electricity consistent with the Directive's reference values. Member States will be required to make an initial progress report by October 2003. The renewables Directive did not propose a common framework for the support of renewables and the Commission must examine by October 2005 whether this is desirable. The Commission has also made a similar proposal for a Directive relating to the promotion of CHP generation.

A common position on the Emission Trading Directive was adopted by the Council in March 2003. This will lead to the establishment of a cap and trade system for the effective control of carbon emissions. An initial scheme will function during the period 2005-08 with an expanded scheme for 2008-12 in the run up to the Kyoto target deadline.

These measures will have an important impact on the functioning of the electricity market. Due attention must be given to avoid disproportionate distortions of the market, in particular through Member States adopting different and potentially incompatible policies. However at the same time it must be remembered that the primary function of these measures is to increase the penetration of renewables and to control carbon emissions.

### 2.3 Legislative Framework and Institutions

Following the entry into force of the Directive and Regulation on cross border trade, there will be a variety of bodies with different responsibilities in the regulatory framework. These will need to work closely together as follows.

The **European Commission** will be responsible for ensuring overall compliance with the Directives, that is, whether Member States create the appropriate legal framework. It will also have responsibility for taking the chair of the Regulatory Committee which will make decisions on cross border issues under the Regulation.

**Member States' Governments** will be the voting representatives of the Regulatory Committee which will take decisions on issues of cross border exchanges. They will also be responsible for the correct transposition of the Directives and Regulation into national law.

**National Regulators** have considerable responsibility to set the framework for the functioning of the electricity market. The Directive bestows a set of minimum competences on the regulators in the realm of network access and implementation of guidelines agreed under the Regulation. Regulators will also be expected to provide considerable input through an High Level Committee which the Commission intends to establish. This will enable them to make a contribution in substance to any proposals to be put before the formal decision making Comitology procedure.

**Transmission System Operators** will have a key role in developing the European electricity market by providing, in particular, the main technical input towards the formulation of new rules and guidelines. TSOs will have to ensure the day to day functioning of the electricity market, with in the framework approved by regulators and the guidelines emerging from the Comitology procedure. It is expected that TSOs will harmonise network security rules, grid codes, and access and tariff methodologies, such that trade within a region is as easy as trade within a country or TSO control area. In this context, the work on rewriting rules for the UCTE Operational Handbook is to be welcomed. However there will be an ongoing need for regulators to verify that such revisions complement and do not impede cross border control area trades, the integration of the regional markets, and the wider development of the single market.

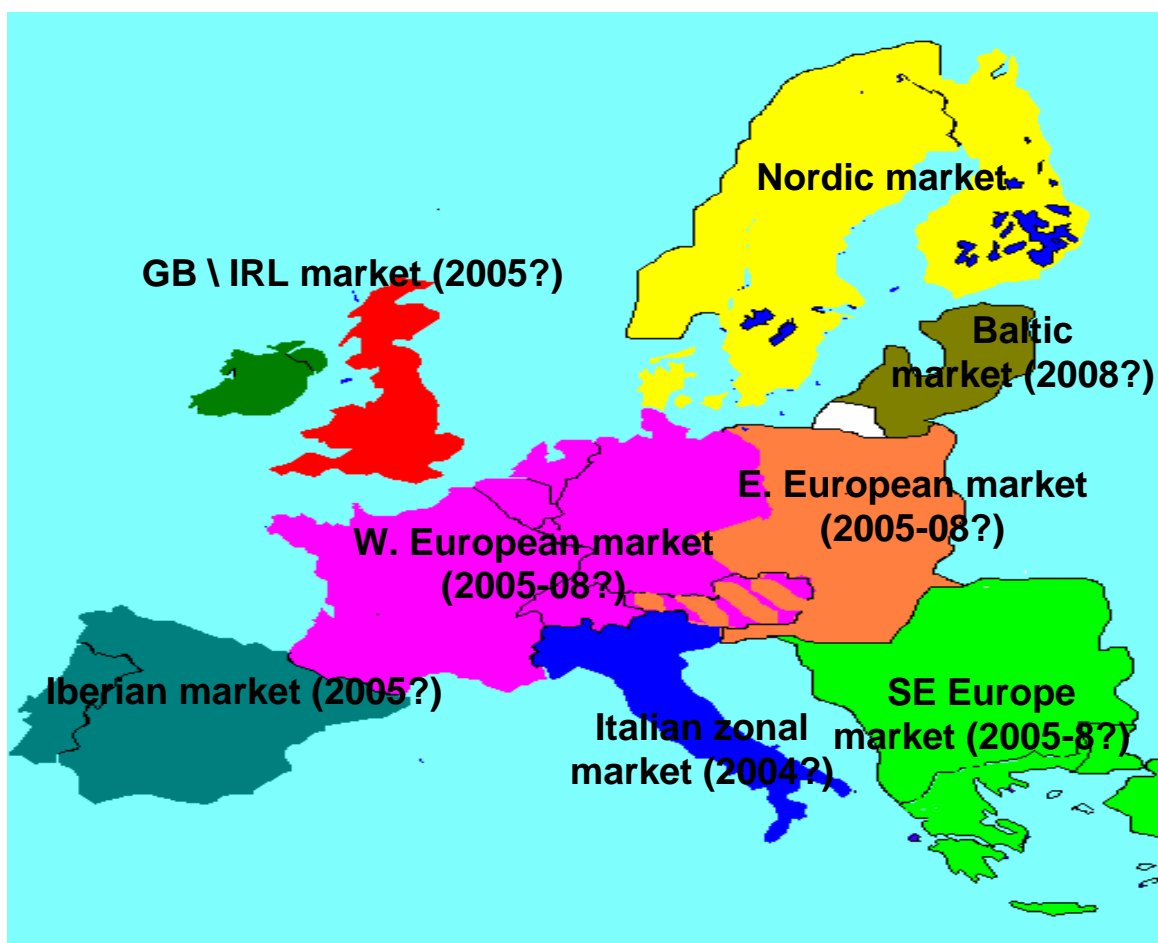
**Market Participants** will need to be regularly consulted on the expected and actual effects of reform proposals.

It is important that there remains regular contact among all these bodies to ensure the progressive development of the competitive framework. The regular Electricity Regulatory Forum (Florence) will therefore be continued.

## 2.4 Role of Regional Markets

The reality of today's electricity network is that Member States are not particularly well interconnected. In addition certain regions have already adopted common harmonised rules, that in some cases go beyond those envisaged by the new measures. Therefore, the development of regional markets containing Member States between which interconnection is reasonably strong is a necessary interim stage. Within these regions, one would expect a complete harmonisation of the regulatory approach taken to most or all issues, including the rules for bilateral trading, standardised day ahead and intraday markets as well as balancing, congestion and ancillary services. These regional markets would be expected to adopt closely harmonised methods for setting transmission tariffs. Figure 1 below sets out possible regional market definitions

**Figure 1 Potential Regional Electricity Markets within the EU**



This is not to say that the objective of a single internal market is compromised. There will continue to be a minimum degree of harmonisation to which all Member States will need to comply and regional markets should not diverge too significantly in their basic design. Market arrangements that impede trade or distort competition between these regions will be prohibited. In any case, all of the regional markets will be

expected to follow the same path of development in order to facilitate eventual full integration

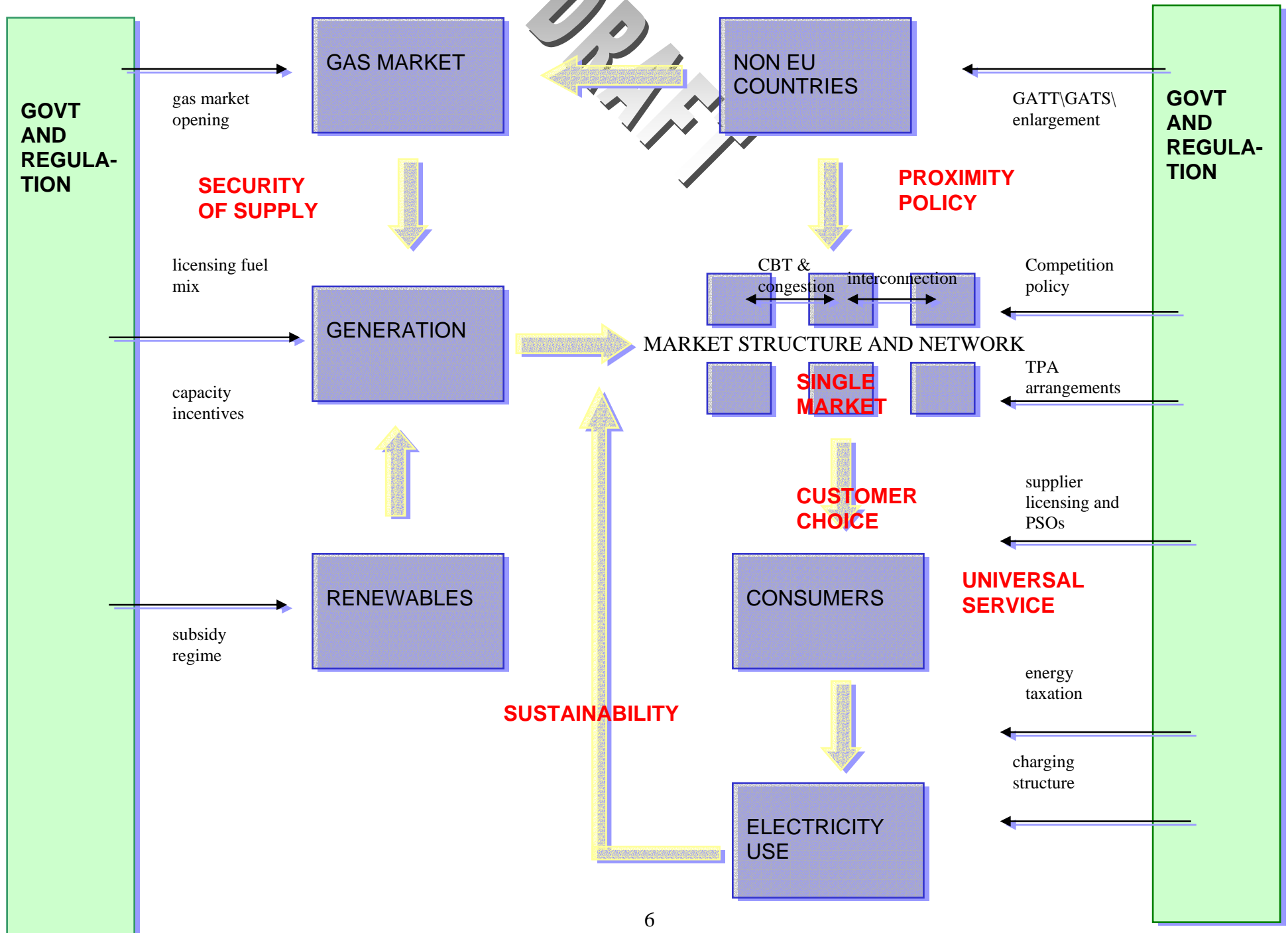
## 2.5 Structure of the Paper

The following chapters deal with the major issues that need to be considered in monitoring and developing the internal electricity market over time.

- setting rules for developing cross border trade (Section 3),
- market structure and interconnection in the European electricity market (Section 4),
- active promotion of customers' rights to freely change supplier (section 5);
- developing a framework which encourages an appropriate level of generation and/or management of demand to guarantee security of supply (section 6),
- ensuring that mechanisms to support renewables energy and reduce carbon emissions are coherent in the context of a single market (Section 7),
- removal of any other distortions to trade such as taxation policy (Section 8),
- establishing a framework for electricity exchanges with third countries (section 9).

Given that the electricity and gas markets are very closely inter-related it is also worth recapping the main points of the Commission's strategy paper for gas which was submitted to the fourth meeting of the Madrid Forum in July 2002. This is included as section 10

However, there are clear linkages between all of these issues which also interact with wider aims of energy policy such as sustainability and the environment, the question of services of general economic interest and external policy. The graphic overleaf seeks to describe these interactions.



### 3 Developing Cross Border Trade

This section discusses the objectives for the management of the European network relating to cross border exchanges. This subject includes; compensation between Member States' TSOs for hosting cross border flows, the introduction of harmonised transmission tariffs with locational signals, and finally non-discriminatory congestion management. These objectives will be pursued through the Regulation on cross border electricity exchanges. This section of the paper discusses some broad medium and long term objectives for the Regulation without going into very detailed points which will be the subject of a separate discussion.

The overall goal is for the EU and wider market to function in the same way as a national market. Eventually, therefore, all system operators should use the same assumptions and mechanisms to manage their networks and network users would face a single interface. One conceivable way to achieve this would be, within a legally unbundled TSO as required by the Directive, to clearly identify the separate functions of network operator and network owner. This would potentially allow system operators to co-operate more closely across political and transmission network borders, unencumbered with potential conflicting interests regarding transmission revenue or other competitive market activities.

Regarding tariffs, it is clear that for the medium term, an approach whereby tariffs for cross border trade are a combination of different national tariffs schemes and where TSOs are compensated for transit and/or other cost inducing flows is the most sensible. However in the longer term, a pan-European tarification mechanism, would clearly contribute to the integration of markets.

For congestion management and system operation more generally, methods for allocating capacity should be market based and designed to give correct locational signals to producers and consumers. Such price signals will also help regulators and/or investors to identify appropriate interconnection projects. Allocation methods should also be non-discriminatory so that all participants should have an equal chance of obtaining capacity, whether it be for long term or short term transactions or for large or small customers. Finally there should also be an automatically functioning use-it-or-lose-it rule. These objectives imply some co-ordination of the capacity allocation process with that of power exchanges and other wholesale markets, including the intraday market, as well as balancing mechanisms and ancillary services. Such harmonisation efforts imply a review of network security rules, grid codes, and access and tariff methodologies, such that trade within a region is as easy as trade within a country or TSO control area.

Finally, in this context it is important to review the rules used by TSOs to deal with internal transmission congestion. TSOs should not, in general, be permitted to systematically transform internal constraints into constraints at borders. Incentives for doing this be reduced for example where incentives or penalties for dealing with internal constraints are equal to those for dealing with external constraints, bearing in mind the need to create consistent price signals in terms of reference to time and place either side of the constraint.

The following specific objectives should be pursued in the context of the Regulation;

- **in the medium term;**
  - inter TSO compensation should allow for suitable compensation between Member States for, as a minimum, transit flows and other cross border flows in some cases;
  - transmission charges on generators should be harmonised within a fairly narrow range with, if appropriate, some locational signals introduced at EU level;
  - interconnection capacity to be allocated by non-discriminatory, market based mechanisms consisting either of either:
    - counter-trading or redispatching within certain “**single price areas**”, which need not correspond to the borders of individual Member States;
    - within **regional markets**, a single common co-ordinated market-based mechanism which allows for both long term capacity allocation as well as “market coupling” of existing day-ahead and possibly intra-day spot markets via the adoption of a common timetable;
    - between **regional markets**, specific market based mechanisms which as far as possible allow for coupling of wholesale markets;
  - a high degree of transparency should be provided to network users, including the publication of necessary data relating to transport capabilities of interconnector lines.
- **in the longer term;**
  - both tariffs and inter TSO compensation should be based on a single common model of the European network with, ultimately, zonal based transmission charges covering, as a minimum, losses and also potentially, fixed investment costs,
  - **regional market areas** may be served by a single wholesale market (both day ahead and intra-day with an integrated balancing mechanism) which would contain different price areas in the case of persistent congestion, whereas other mechanisms could remain in place between regional markets;

In addition to these points:

- mechanisms to allocate capacity should be designed to avoid manipulation by, and/or collusion of, those generators with a dominant position in certain regions;



- where allocation is based on short term wholesale markets, participants should also have the scope to make longer term arrangements to obtain financial certainty for longer term contracts through the use of hedging instruments;
- system operation should be fully co-ordinated, for example, cross border capacity should be increase through redispatching within the national network and through the separation of national markets into different prices areas;
- the use made of revenues from congestion, or any other constraint resolution scheme to be clearly regulated and audited, and preferably used for the removal of congestion. The distribution of the revenues should be made dependent on TSOs undertaking measures to reduce congestion.

Clearly, such a degree of co-ordination cannot be reached immediately. The initial steps on the way to this objective can be taken once the Regulation enters into force in July 2004. Subsequent steps are identified in the indicative timetable below.

#### Indicative Timetable

##### **2004**

- entry into force of Regulation, adoption of first set of guidelines including **[Comitology]**:
  - agreed initial method for inter TSO compensation
  - agreed initial rules for initial harmonisation of transmission tariffs at regional market level, introduction of locational signals and removal of “T component”,
  - agreed map showing **single price areas** where congestion would be resolved through counter-trading, these could be larger or smaller than existing Member States,
  - agreed co-ordinated approach for solving congestion between these zones using non discriminatory and market based mechanisms (including some PX involvement),
- pilot project on co-ordinated congestion management in “W. European market region) **[TSOs]**

NB:

- establishment of GB market
- establishment of Italian wholesale market

**2005**

- UCTE handbook to be approved by regulators (or as part of the congestion management guidelines) and become legally binding,
- Market participants in all Member States to have access to a relevant functioning power exchange by this date [**Member States**]

**NB:**

- establishment of single Iberian market
- establishment of Irish market (IETA project)

**2005-8**

- introduction of co-ordinated implicit auctions in W. European market, SE Europe market and E. European market on a regionalised basis

**2008-10**

- integration of intra-day and balancing markets
- establishment of Baltic market

**2010 onwards**

- progressive integration of all regional groupings.

## **4 Improved Interconnection Between Member States and the Reduction of Market Concentration**

### **4.1 Background**

The legacy of national and centrally organised electricity supply is a high degree of concentration within many Member States and a low level of interconnection between them. The two main problems resulting from this are; firstly, congestion in the European network leading to large differences in wholesale market prices; and secondly, the potential for competition to be constrained if previous incumbents retain a high share of generation capacity in the Member State concerned.

### **4.2 Improving Interconnection**

The congestion that currently exists in the European market often leads to prices for wholesale electricity that vary by a factor of two or three depending on the Member State. This mainly results from the characteristics of the generation park in each country. In these case it is clear that new interconnection would therefore provide significant and immediate benefits. At the same time, however, circumstances may change in the generation sector and price differences will not necessarily remain unchanged over time. Regulators therefore should be encouraged to develop a sensible appraisal policy to guide their approach to new investment of this type.

A second pre-occupation is that, regardless of price differences between Member States, the Community must avoid the situation where the right to choose supplier is meaningless. Former incumbents must be subject to the competition. One way to achieve this, of course, is to create larger regional markets by improving the use of existing infrastructure and increasing the level of interconnection and the associated internal links.

Finally, increased interconnection allows for the improvement of security of supply by, for example, allowing a more diverse mix of primary energy sources. There may also be clear benefits to the environmental objectives of the Community from increasing interconnection, for example by allowing the use of renewable energy developed in large offshore facilities.

Greater co-ordination between the TSOs and improvements in the regulatory framework in Member States should already increase the level of cross border exchanges and accordingly competition. In a number of cases, however, these improvements are unlikely to be not be enough to significantly reduce congestion and market concentration and some new investment will be needed. As a result of the Infrastructure Communication, a modest target of 10% was established for the level of interconnection between Member States. However, there are a number of Member States where a higher degree of interconnection may be desirable in order to deliver meaningful competition.

Many obstacles exist to new investment in infrastructure associated with the decision making process, the regulatory framework and environmental concerns. Some of these barriers could be overcome by the development of the following structures:

- a clear decision making process, including a common cost/benefit analysis framework for regulators and governments to adopt regarding key interconnection projects;
- certainty for investors in terms of the regulatory treatment of profits and/or losses from interconnector projects and the allocation of costs between the countries affected;
- a wider European view must be taken to ensure that key projects are undertaken in the required time frame.

In this context, the CEER's recent paper to the Commission "*Regulatory control and financial reward for infrastructure*" sets out a choice of regulatory frameworks for interconnectors. The choice between these will be very much dependent on local market circumstances and structures. There are clear differences for example between making extensions and new interconnector infrastructures within meshed AC systems, and large subsea DC interconnector projects.

At the very least, there should be agreement between the regulators of the two countries at each side of a potential interconnector project. However, given the effects of any interconnector on the wider European network it would perhaps be more suitable for the regulators to collectively produce a detailed strategy for the implementation of priority interconnection projects. This would cover the regulatory and financial framework to be used, the deadlines for implementation and the action to be taken in the case of delays. This strategy should explicitly identify cases where the use of underground cables may accelerate the implementation of projects.

In general it is expected that most projects will be undertaken as part of an overall investment programme agreed between regulators and transmission system operators. In such cases the costs would be funded from the generality of network users with no systematic charges for using particular interconnectors. This implies the separation of the question of financing interconnections from the mechanisms of allocation of capacity. At the same time it does not necessarily imply an inflexible centrally planned approach to infrastructure. For example TSOs may have incentives embodied in the formulae used to decide regulated charges in order to encourage investment.

In some exceptional cases, as set out in the Regulation, it might be envisaged that interconnectors could be constructed on a merchant basis where the costs of the transmission line in question would be expected to be covered by the users of that particular line. However the "merchant" model is not considered suitable as a general model for interconnector investment in Europe.<sup>1</sup>

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<sup>1</sup> Various problems with the use of a "merchant" models are discussed in, for example, Tirole and Joskow (2002)

### 4.3 Improving Market Structure

A number of new projects will be completed over the next few years. However new investment is unlikely to totally erode historically entrenched positions and it is likely that certain Member States will be subject to significant market concentration for some time. Increasing interconnection could, in any case, also be seen as an expensive way of resolving the market dominance issue and, furthermore, there are some cases where infrastructure is already available and not used.

Complementary measures also, therefore, need to be taken. In particular, Member States should seek to dilute the market power of dominant generating companies and/or to prevent the abuse of dominant positions as follows:

- divestment and capacity release should be used to reduce the level of concentration, with reciprocal measures between two or more Member States with similar concentration problems;
- appropriate design of mechanisms to allocate interconnector capacity should mitigate and not add to market power problems within certain Member States and regions;
- market design should encourage an appropriate mix of both longer term bilateral arrangements and demand side participation in order to avoid encouraging collusion;
- regulators and, where appropriate, TSOs should monitor the behaviour of market participants closely and should act, using existing competition law, to protect consumers from manipulation: ad-hoc intervention in the market should be avoided;
- demand side participation in wholesale and balancing markets should be encouraged in order to significantly increase the elasticity of demand for electricity within individual settlement periods and thus reduce the scope for abuses of dominant positions.

Finally, some consideration needs to be given to the future structure of the EU electricity market as a whole. Some of the expected benefits of competition are likely to arise from further consolidation to take advantage of the economies of scale and scope that exist in this capital intensive industry. Electricity companies should not, in principle, be prevented from taking such actions to improve their performance provided that customers are protected from monopolistic practices.

Indicative Timetable for Implementation

|                |  |
|----------------|--|
| <b>2003</b>    | publication of second Commission Communication on Infrastructure (and Market Structure)  |
| <b>2004</b>    | <p>drafting of full list of potential projects with a desired timetable and identification of key projects potentially justifying underground cables [Comm\CEER]</p> <p>appropriate redesign of current Pool approaches to give equal status to bilateral transactions [NRA\TSOs]</p>  |
| <b>2005</b>    | <p>Code of Practice to be published by regulators setting out their approach to wholesale market monitoring and control. [CEER]</p> <p>regulators agree implementation process and financial arrangements for each potential project [Comm\CEER]</p> <p>possible adoption of indicative targets relating to market concentration at national and EU level</p> <p>comparison of procedures for balancing and examination of possible harmonisation measures</p> |
| <b>2006-10</b> | Implementation of investment strategy [NRAs \TSOs]   |

## **5 Facilitating Competitive Choice By Customers while delivering Universal Service**

Although electricity is largely an homogenous good it is nevertheless expected that, as has occurred for financial services, competition will deliver innovation in terms of the types of product available. Customers may, for example, prefer different payment options. They may have different preferences about whether prices are fixed or variable, or they may benefit by using electricity at different times of day.

For all retail customers to have the real possibility of choosing their supplier, there needs to be a considerable amount of preparatory work. Customers should be able to switch reasonably frequently between retail suppliers without implying a significant cost to either themselves or the new supplier. Procedures should also be in place to minimise the need for final customers to be involved in contracts with network companies, especially smaller consumers. Experience has shown that the information management systems required to support customer switching can be very costly. In this an appropriate balance needs to be made between the ease of switching and the costs placed on system operators (and hence the customer base in general).

In order to ensure universal service at a reasonable cost, as required by the Directive it is expected that Member States will have some form of default supplier arrangements in the case that their chosen retail supplier withdraws from the market for whatever reason. This may imply costs on such suppliers that need to be compensated for. Consumers need to be confident of the duties of market participants relating to balancing and the obligation of the TSOs to ensure overall balance meaning that suppliers can not “run out of energy” and that final customers would not be liable for penal charges for the purchase of balancing energy<sup>2</sup>.

In general regulators should ensure that consumers, particularly households, are not taking disproportionate risks when they change supplier and this should be clearly communicated to them. Member States may, for a limited period while competition is developing, wish to retain some control on the prices charged to some domestic customers by the default supplier, even after full market opening.

Customers must also have the confidence that the quality of service they receive will be maintained regardless of whether they choose to switch or to remain with the incumbent supplier. A regulatory structure should therefore be established whereby retail suppliers have similar obligations to maintain a certain standard of service to all energy consumers; for example in terms of billing, dealing with complaints, transparency in publishing and advertising their tariffs, disconnection, payment possibilities to vulnerable customers etc. Competition and entry by new suppliers would be enhanced if the framework for issuing supplier licenses was similar across the EU, although the service standards need not be identical.

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<sup>2</sup> Unless they are themselves balance responsible parties.

### **Indicative Timetable for Implementation**

- 2003** confirmation of default supplier arrangements including, if considered appropriate, a price ceiling for certain customers [**NRAs**]
- appropriate load profiling and customer exchange information to be put in place in anticipation of non household market opening [**TSOs**]
- 2004** agreed definition of minimum best practice for customer switching procedures without unreasonable costs to either the customer or new supplier [**Eurelectric\CEER**]
- 2005** examination of the possibility of a standard European supplier licence structure agreed between CEER to apply in all Member States [**CEER**]



Although most Member States currently have adequate reserve capacity, there are certain regions such as Ireland and Greece where there is both limited interconnection with other regions and where reserve margins have been severely eroded. Both these countries have had to launch a tender to ensure that adequate generation capacity is available in coming years. Over the coming years, increasing demand, the retirement of some capacity at the end of its life, and the effect of the Large Combustion Plant Directive will mean that there will be a more general need to closely monitor the supply-demand relationship.

One of the benefits of market opening is that competitive pressures will prevent over-investment in reserve generation capacity. However, this means that the balance between supply and demand will be more delicate and brings about concerns that, because of the long lead times for investment, wholesale electricity prices, especially on spot markets, may tend to follow an erratic path.

Periods with high prices may be required from time to time to encourage investors into the market and to cover the fixed costs of those already there. However, this volatility may create undesirable conditions for customers if they are not expecting it. Such volatility may also create pressure on governments to intervene in markets at times where prices are high, which will increase regulatory risk and lead to further uncertainty for potential investors, making the problem worse. It is therefore necessary for Member States and Regulators to decide what approach they intend to take to the issue of supply-demand and stick to it. Ad-hoc intervention in electricity markets should be avoided.

Some Member States' have taken the approach that, where an adequate demand response exists, the market should be allowed to run its course. It is argued that increases in wholesale prices will bring forward investment and constrain demand, meaning that episodes of inflated prices will be short lived. An active demand response is a necessary component in this strategy which means that a significant proportion of electricity purchases must be based on the spot market price so as to create additional elasticity. Such customers must also have the necessary information and equipment to respond to high spot prices. As an alternative, customers may choose to avoid being exposed to such volatility by entering into longer term arrangements with suppliers. These will in turn enter into longer term contracts with generators which will also make investment in generation more likely before an extreme position is reached. Such a market based approach requires significant political commitment to the market mechanisms on behalf of the regulators concerned as well as a process of informing customers of their responsibilities. This was demonstrated relatively successfully during winter 2002-03 in the Nordic countries.

The alternative is to introduce mechanisms to smooth out the potentially volatile price cycle. This can be achieved in a number of ways; for example, capacity payments to generators or price floors (for which a tender approach is an extreme example), or obligations on retail suppliers or the TSO to purchase reserve capacity. The main effect of all of these mechanisms, however, is to provide an incentive to investment in

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new generation capacity so that peaks and troughs in prices are reduced. Clearly this second mechanism has the potential to distort competition across borders. For example capacity payments have the effect of reducing charges to generators, there is a clear inconsistency between this possibly and the idea that G charges should be harmonised. Capacity payments have also been criticised due to their excessive cost and the opportunity they provide for market manipulation.

Therefore, in general, the first option consisting of a market based approach with an active demand side is to be favoured. Member States should take measures to incentivise large consumers, in particular, to adapt their demand to market conditions and to participate in balancing markets and ancillary services mechanisms. One component of this, for example, might be for there to be a license requirement on suppliers to ensure that a proportion of the energy being purchased by large consumers was based on the spot price. This would give an automatic incentive on such users to control their demand when the supply-demand position is tight. Alternatively such an effect could be produced spontaneously by the market provided that customers had the required metering and demand control equipment.

This issue of security of supply also raises a more fundamental question about whether the issue of security of supply should be dealt with at national or regional level. From the point of view of economic efficiency, however, it is clearly of benefit if Member States can share reserve capacity since it means a lower level of reserve is needed in each Member State. Thus within **regional market areas** it may be more appropriate for the Member States affected to arrive at a common approach to security of supply for generation. This would apply both to the question of what intervention in the market should be made, as well as the issue of diversity of primary fuel sources. A regional approach to security of supply might also have implications for treatment of interconnection capacity if one country is relying on another to provide reserve capacity.

A common approach would remove the risk of distortions of trade between Member States and allow for sharing of reserve capacity. Generally, in an integrated market, a unilateral approach to security of supply would not be appropriate. This implies a clear code of conduct on TSOs wishing to take action to restrict cross border flows in emergency situations.

A different issue relating to generation investments are the procedures required in terms of authorisation and planning approval. The process may be unnecessarily heavy in some Member States and be an unnecessary obstacle to investment. A more streamlined and harmonised process would remove such obstacles. It may be that a comparison of the authorisation and planning process between Member States would allow for the spread of a best practice approach.

#### Indicative Timetable

|             |  |
|-------------|--|
| <b>2004</b> | review and comparison of authorisation procedures in each Member State [NRAs\Comm] |
|-------------|--|

examination of the distribution of risks and returns between producer-supplier-customer implicit in the contractual arrangements for electricity supply [CEER];

**2005** regulators within regional market areas to prepare an analysis of the possibility of common approach to security of supply with a particular emphasis on increasing the demand side response [CEER]

development of an overall European balance forecast [ETSO]

**2006** Code of conduct for emergency situation [ETSO]

**2007...** Implementation of common approach within **regional market areas**.

## **7 Consistent Support Framework For Renewable Energy**

The prime function of the renewables Directive is to deliver the overall Community objective that 22% of electricity will be generated from renewable sources (RES generation) by 2010. Member States have been required to adopt targets, relating to the amount of RES generation relative to consumption. Indicative values were set out in the Annex to Directive 2001/77.

Member States are expected, in setting their national targets, to take account of the amount of RES generation they are likely to import or export from other Member States. Hence the targets, although based on consumption, will also imply a national target for the amount of RES generation production capacity to be installed in the Member State concerned. To a certain extent, therefore, the issues relating to compatibility of support mechanisms, and the desirability of not distorting cross border trade are concerns which are secondary to the main objective of ensuring a certain level of RES production in each Member State on the basis of individual national targets. It is therefore permitted by the Directive, and associated guidelines on state aid that subsidies to RES electricity generation may vary by Member State in terms of both the level and the support mechanism. The CHP Directive proposed by the Commission follows a similar approach, by obliging Member States to report on the potential expansion of CHP but without setting indicative targets.

There are three main types of support mechanisms being used for RES in Member States at present. The first type is a fixed feed in tariff whereby all renewable energy\CHP injected into the network is automatically dispatched and receives a guaranteed price, usually much higher than normal market prices. The costs of this obligation are then passed on to customers through transmission or distribution tariffs. Such an approach clearly reduces the overall scope for competition at Community level between RES generators since it means that a certain proportion of generation is outside the market. On the other hand it gives certainty to investors about the price that will be received and is therefore an effective means of support.

Under the second approach, suppliers or customers are given an obligation to source a certain amount of their energy from renewable\CHP sources. Often this is termed a “green certificates” approach since the supplier is given a certificate when renewable production is used. If the required amount is not achieved, then the supplier will be fined according to the deficit between the required and actual amount of certificates. In theory, this approach may seem more in line with a competitive market. However, because the targets adopted under the Directive are on a national basis, it is often the case that green certificates are only valid for RES generation that is produced in the Member State in question. Indeed where such rules have not been adopted, RES energy may be able to achieve a double subsidy from two different Member States by exporting from a country with a feed in tariff regime to another with a certificates type approach.

The final option is a straight subsidy from the government to cover a proportion of either capital or operating costs. This is equivalent to a variable feed-in price based on the general market price for electricity.

Ideally, all Member States would adopt a similar approach with mutual recognition of energy generated from renewable resources. This would allow either a common fixed feed-in price or a single system of green certificates could be used. This would have the advantage of establishing competition at two levels; that is, in the generation market for conventional fuels as well as, separately, in the green market and this would be expected to increase the cost effectiveness of support. Although this is not a requirement of the Directive, Member States within the same regional market could work together to establish similar systems on a voluntary basis.

As well as mechanisms to support renewable energy, other initiatives are being taken to establish market mechanisms to reduce carbon emissions. A common position was recently reached to establish such an emission allowance trading scheme for greenhouse gases at EU level<sup>3</sup>. Emission allowance trading is essentially a reverse version of green certificates in that undertakings involved in carbon emitting activity are given a target for the amount of emissions they can release in a time period (overall cap). The operator of an installation is then allocated allowances. If the company intends to emit more than it has been allocated as allowances, it is then possible to purchase additional allowances from those who have been able to exceed their allocation (trade). In this way it is expected that reductions in CO<sub>2</sub> emissions will be made in the most efficient manner. The current proposal applies to large industry and energy activities, including electricity generation.

It is important to consider the interaction of emission allowance trading with the market for electricity. In particular, it must be ensured that new investors in generation are not disadvantaged by the scheme. In particular the allocation of emission allowances should not discriminate in favour of incumbents<sup>4</sup>.

#### Indicative Timetable

|             |  |
|-------------|--|
| <b>2003</b> | Possible entry into force of cogen directive [ <b>Council\Parl</b> ]                 |
|             | Possible entry into force of greenhouse gas emissions trading directive              |
|             | Transposition of RES Directive and first report by Member States on their targets    |
|             | Establishment of mutually recognised “guarantee of origin”                           |
| <b>2004</b> | Identification and removal of all double subsidy possibilities for either RES or CHP |

<sup>3</sup> One MS is running a voluntary scheme (UK) and the other a mandatory (Denmark).

<sup>4</sup> MS can allocated according to historic emissions – see <http://europa.eu.int/comm/environment/climat/030401nonpaper.pdf>

DRAFT

First Commission report on compatibility of national targets with overall EU objective, possible mandatory targets

Member States submit first national allocation plans for allowances to be allocated 2005 to 2007 to the Commission

**2005**

Commission Report on the implementation of the renewable directive in terms of compatibility of different support schemes and possible proposals for support framework [**Comm**]

Implementation of emission allowance trading scheme: first period with free allocation of emission allowances subject to Commission review.

**2008**

Second phase of emission allowance trading scheme.

## 8 Removing Other Distortions

Differences in the treatment of taxation of primary energy will have similar effects on the competitiveness of generation capacity in different Member States. Excise duties on primary fuels, if these cannot be recovered in the same way as VAT, will directly affect competitiveness. As in all sectors with non harmonised energy taxes, this will put the user industry in the higher tax country at a disadvantage. This underlines the importance of some harmonisation of energy tax systems in different Member States as applied to electricity generators.

A second issue relates to the VAT treatment of cross border exchanges of electricity. On 5 December 2002, the European Commission adopted a proposal on 5 December 2002 to amend the rules on the place of taxation of natural gas and electricity to facilitate the functioning of the Single Market for energy. The proposal is to eliminate current problems of double taxation and non-taxation and distortions of competition between traders by changing the place of taxation of natural gas in pipelines and of electricity from the place of supply to the place of consumption.

Under the proposed rules, where the buyer is a trader reselling the supplies, the place of taxation will be the place where the buyer was established. Where the sale was to a final consumer, the place of taxation will be the place of consumption. For transmission services closely linked to the supply of gas and electricity, the proposal contains a corresponding clause providing that taxation will take place in the country where the customer was established. Member States should rapidly approve this amendment to the VAT Directive to remove this barrier to cross border transactions.

Finally, state aid to primary fuels may also create distortions between Member States and between competition among the different primary fuel types. In addition to the issue of renewables discussed above, state aid is also an issue in the coal industry and relating to gas infrastructure. The complicated taxation arrangements for the extraction of oil may also be relevant. The Commission produced a first assessment of the extent of state aid in the energy sector in the form of a staff working paper. This work will be updated in order to ensure that the implementation of Community law is not systematically favouring any particular type of primary fuel unless, as for renewables, there is a clearly defined policy in favour of that energy source.

### Indicative Timetable

|             |  |
|-------------|--|
| <b>2004</b> | Review of potential distortions created by excise taxes, and other factors. [Comm] |
|-------------|--|

## 9 Relations With Third Countries

The Regulation requires the Commission, in adopting guidelines, to indicate what actions it has taken with respect to the conformity of rules in third countries, which form part of the European electricity system for the guidelines in question.

The first consideration is the position of Switzerland which occupies an important position in the European electricity network. Although the idea of market opening has been rejected for the time being this would not necessarily rule out legislation relating to a partial opening of the market and the adoption of congestion management rules compatible with the EU. Furthermore, in the meantime, pragmatic solutions based on voluntary agreements for questions of cross-border-trade, transits, congestion management are expected to be possible.

Accession countries will be required to implement the new acquis relating to the opening of the electricity market. They will also need to participate fully in the new structures being established to manage cross border transactions under the Regulation in terms of inter TSO compensation, transmission tariff harmonisation and congestion management. As the new package is likely to be adopted after the signing of the Accession Treaty, there may be certain transition arrangements in place. However it is to be expected that accession countries will participate fully in the internal market for electricity by 2007.

Another consideration is that parts of the existing and enlarged EU are somewhat isolated from other Member States both geographically and in electricity terms. This suggests that the establishment of similar market structures in neighbouring regions is desirable, particularly in the south east Europe region and the Mediterranean ring. This would both anticipate further accession and recognise the reality of the existing grid interconnections.

Finally the special position of Russia and former Soviet republics needs to be resolved. Many accession countries retain the possibility of a significant degree of interconnection with the Russian grid. This potentially has mutual benefits. At the same time it is clear that there remain a number of system security considerations in establishing a permanent synchronous interconnection with the UPS network. There are also questions of reciprocity to be resolved, both in terms of market opening and on environmental and nuclear safety issues. These issues need to be clarified in order to set the context for trading arrangements between the enlarged EU electricity market and Russia and other former Soviet Union countries.

### Indicative Timetable for Implementation

- |                |   |
|----------------|---|
| <b>2004-7</b>  | Accession countries implement new Directive [ <b>Member States</b> ]  |
| <b>2005-10</b> | Creation of a wider European Electricity market, including the south east European region, Euromed region, Russia and other FSU countries |



## 10 Strategy for Gas

The key points arising from the gas strategy paper and their relevance for the electricity industry are discussed below. Clearly an increasingly significant proportion of electricity generation capacity will be based on gas as a primary source. Therefore electricity generators must be able to depend on exercising their right to choose between different suppliers and sources of gas based on non-discriminatory access to the gas network.

As for electricity, the achievement of a competitive European gas market requires a number of key steps;

- a coherent and cost reflective system of charges for use of the European network based on actual physical flows, with recognition of backhaul, and allowing the removal of transaction based charges,
- ideally, access charges should reflect congestion within the system, to provide effective cost signals,
- a transparent and non-discriminatory methodology for the allocation of network capacity which ensures effective use can be made of the network by all participants,
- liquid wholesale markets for gas that will give a transparent and reliable price signals,
- clarification of the roles and responsibilities of the different parties in the gas market relating to security of supply,
- measures to ensure the required development of the gas network to meet defined output standards which may require a robust governance framework and non-market based regulatory safeguards as well as a to ensure a stable regulatory environment and an investment climate conducive to new infrastructure investments,
- continued extension of the European gas grid to peripheral areas and to third countries.

## 11 Summary and Conclusions

The possible timetables set out in the individual sections above imply the following work programme for the next few years in relation to the construction of a single internal electricity market.

|                  | Cross border trade  | Inter-connectors and concentration  | Customer choice and PSO                                    | Generation adequacy  | Renewables etc.  | Other distortions           |
|------------------|---|---|--|--|--|-----------------------------|
| <b>2003</b>      | Guidelines discussion   | Commission 2 <sup>nd</sup> communication  | Confirm USO arrangements<br><br>Prepare for market opening |  | Cogen directive in force   |                             |
| <b>2004</b>      | Adoption of guidelines<br><br>Pilot project for co-ordinate congestion management                             | Verify market design to reduce collusion  | Best practice for switching<br><br>Publish pamphlet        | Review and comparison of authorisation procedures  | Commission progress report on RES directive  | Review of other distortions |
| <b>2005</b>      | 1 <sup>st</sup> TSO report on congestion revenue<br><br>Feasibility study on integrating balance markets      | CEER strategy for infrastructure<br><br>NRAs code of practice on market monitoring<br><br>Possible targets for market structure | Standard supplier licence                                  | Analysis of possible common approach<br><br>Overall EU balance forecast                          | Commission report on coherence. Possible proposal for common approach<br><br>Emission trading starts |                             |
| <b>2006-8</b>    | Implicit auctions within all regional markets<br><br>Integration of intraday markets and balancing mechanisms | Implement projects  |  | Code of conduct for emergency situations<br><br>Possible adoption of common approach to adequacy |  |                             |
| <b>2008-2015</b> | Progressive integration of regional markets   | Implement projects  |  |  | Phase 2 of emission trading starts   |                             |