NOTE OF DG ENERGY & TRANSPORT
ON DIRECTIVES 2003/54/EC AND 2003/55/EC
ON THE INTERNAL MARKET IN ELECTRICITY
AND NATURAL GAS

THIS DOCUMENT IS NOT BINDING ON THE COMMISSION

MEASURES TO SECURE ELECTRICITY SUPPLY

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1. INTRODUCTION

The process of market opening in the European Union started at a time with, generally speaking, excess reserve capacity in the system. One of the consequences of market opening and the drive for more efficiency in the sector is a closure of this excess capacity. However, the costs to society of a shortage in the supply of electricity are much higher, as the electricity supply crisis in California has shown.

In the peripheral markets of Ireland, Scandinavia, Italy, Greece and the Iberian Peninsula, a trend towards capacity insufficiency is visible at times. It is conceivable that generation inadequacy will develop in the core UCTE market as well, if no adequate measures should be taken.

The Commission believes that the internal market will, in general terms, provide the appropriate framework to ensure security of supply in electricity. However, in exceptional circumstances additional measures may be necessary to achieve the right social outcome of securing supply at reasonable prices (Article 3, 3). A disproportionate welfare transfer from consumers to companies in the event of supply scarcity has to be avoided.

Security of supply in electricity is a public good and on the basis of Article 3,3 of the Directive Member States have to guarantee universal service at least for household consumers.

The Electricity Directive gives the European Union and the Member States enough instruments to ensure that security of electricity supply at reasonable prices can be achieved. The main focus of this paper is to describe which options are open to Member States, if exceptional circumstances warrant intervention in the market. This paper also gives suggestions as to which of these options would be the least distortive of competition and the internal market. This is important in the light of the fact that any measures taken are justified by their public service character and would therefore have to be able to pass the test applicable to public service obligations.

2. RELEVANT PROVISIONS IN THE DIRECTIVE

The provisions in the Directive on which Member States and the European Union can base themselves to take any necessary measures, are the following:

Recital 21-22

(21) Nearly all Member States have chosen to ensure competition in the electricity generation market through a transparent authorisation procedure. However, Member States should ensure the possibility to contribute to security of supply through the launching of a tendering procedure or an equivalent procedure in the event that sufficient electricity generation capacity is not built on the basis of the authorisation procedure.

Member States should have the possibility, in the interests of environmental protection and the promotion of infant new technologies, of tendering for new capacity on the basis of published criteria. New capacity includes inter alia renewables and combined heat and power (CHP).

(22) In the interest of security of supply, the supply/demand balance in individual Member States should be monitored, and monitoring should be followed by a report on the situation at Community level, taking account of interconnection capacity between areas. Such monitoring should be carried out sufficiently early to enable appropriate measures to be taken if security of supply is compromised. The construction and maintenance of the necessary network infrastructure, including interconnection capacity and decentralised electricity generation, are important elements in ensuring a stable electricity supply.

Article (2) - Definitions

(24) "tendering procedure" means the procedure through which planned additional requirements and replacement capacity are covered by supplies from new or existing generating capacity;

(25) "long-term planning" means the planning of the need for investment in generation and transmission and distribution capacity on a long-term basis, with a view to meeting the demand of the system for electricity and securing supplies to customers;

(29) "energy efficiency/demand-side management" means a global or integrated approach aimed at influencing the amount and timing of electricity consumption in order to reduce primary energy consumption and peak loads by giving precedence to investments in energy efficiency measures, or other measures, such as interruptible supply contracts, over investments to increase generation capacity, if the former are the most effective and economical option, taking into account the positive environmental impact of reduced energy consumption and the security of supply and distribution cost aspects related to it;

Article (3) - Public service obligations and customer protection

(3,2) Having full regard to the relevant provisions of the Treaty, in particular Article 86 thereof, Member States may impose on undertakings operating in the electricity sector, in the general economic interest, public service obligations which may relate to security, including security of supply, regularity, quality and price of supplies and environmental protection, including energy efficiency and climate protection. Such obligations shall be clearly defined, transparent, non-discriminatory and verifiable. In relation to security of supply, energy efficiency/demand-side management and for the fulfilment of environmental goals, as referred to in this paragraph, Member States may introduce the implementation of long-term planning, taking into account the possibility of third parties seeking access to the system.

(3,3) *Member States shall ensure that all household customers, and, where Member States deem it appropriate, small enterprises, (namely enterprises with fewer than 50 occupied persons and an annual turnover or balance sheet not exceeding EUR 10 million), enjoy universal service, that is the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable and transparent prices.[…]*

(3,8) *Member States may decide not to apply the provisions of Articles 6, 7, 20 and 22 insofar as their application would obstruct the performance, in law or in fact, of the obligations imposed on electricity undertakings in the general economic interest and insofar as the development of trade would not be affected to such an extent as would be contrary to the interests of the Community. The interests of the Community include, amongst others, competition with regard to eligible customers in accordance with this Directive and Article 86 of the Treaty.*

Article (4) - Monitoring of security of supply

(4) Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate they may delegate this task to the regulatory authorities referred to in Article 23(1). This monitoring shall, in particular, cover the supply/demand balance on the national market, the level of expected future demand and envisaged additional capacity being planned or under construction, and the quality and level of maintenance of the networks, as well as measures to cover peak demand and to deal with shortfalls of one or more suppliers. The competent authorities shall publish every two years, by 31 July at the latest, a report outlining the findings resulting from the monitoring of these issues, as well as any measures taken or envisaged to address them and shall forward this report to the Commission forthwith.

Article (7) - 'Tendering' for new capacity

(7,1) *Member States shall ensure the possibility, in the interests of security of supply, of providing for new capacity or energy efficiency/demand-side management measures through a tendering procedure or any procedure equivalent in terms of transparency and non-discrimination, on the basis of published criteria. These procedures can, however, only be launched if on the basis of the authorisation procedure the generating capacity being built or the energy efficiency/demand-side management measures being taken are not sufficient to ensure security of supply.*

(7,3) *Details of the tendering procedure for means of generating capacity and energy efficiency/demand-side management measures shall be published in the Official Journal of the European Communities at least six months prior to the closing date for tenders.*

The tender specifications shall be made available to any interested undertaking established in the territory of a Member State so that it has sufficient time in which to submit a tender.

With a view to ensuring transparency and non-discrimination the tender specifications shall contain a detailed description of the contract specifications and of the procedure to be followed by all tenderers and an exhaustive list of criteria governing the selection of tenderers and the award of the contract, including incentives, such as subsidies, which are covered by the tender. These specifications may also relate to the fields referred to in Article 6(2).

(7,4) *In invitations to tender for the requisite generating capacity, consideration must also be given to electricity supply offers with long-term guarantees from existing generating units, provided that additional requirements can be met in this way.*

(7,5) *Member States shall designate an authority or a public body or a private body independent from electricity generation, transmission, distribution and supply activities, which may be a regulatory authority referred to in Article 23(1), to be responsible for the organisation, monitoring and control of the tendering procedure referred to in paragraphs 1 to 4. Where a transmission system operator is fully independent from other activities not relating to the transmission system in ownership terms, the transmission system operator may be designated as the body responsible for organising, monitoring and controlling the tendering procedure. This authority or body shall take all necessary steps to ensure confidentiality of the information contained in the tenders.*

Article 28 - Reporting

(28,1) *The Commission shall monitor and review the application of this Directive and submit an overall progress report to the European Parliament and the Council before the end of the first year following the entry into force of this Directive, and thereafter on an annual basis. The report shall cover at least:*

(c) an examination of issues relating to system capacity levels and security of supply of electricity in the Community, and in particular the existing and projected balance between demand and supply, taking into account the physical capacity for exchanges between areas;

(d) special attention will be given to measures taken in Member States to cover peak demand and to deal with shortfalls of one or more suppliers;

3. TWO MAIN OPTIONS TO ENSURE SECURITY OF SUPPLY IF THE MARKET FAILS

The lack of centralised information on the security of supply position in Member States is remediated by Article 4 which obliges Member States to monitor the demand / supply balance and report on this to the Commission every two years. Member States can either entrust a government body with this task, or the regulator, or the Transmission System Operator.

The Member States shall indicate to the Commission what measures they (intend to) take to ensure that a foreseen disruption in the demand / supply balance is addressed. To address any such situation, two main courses of action are open to Member States.

The first set of options is geared towards ensuring generation adequacy by either constructing new plant, impose capacity mechanism on players on the market or by centrally maintaining a reserve capacity. The second set of options concern measures on the demand side.

The possibility of setting a price cap, for instance on supply to household customers, should be carefully weighed against the risks price caps entail in the sense that they might lead to distortion of any investment signal and could therefore turn out to be counterproductive.

A. Generation adequacy – construction of capacity or capacity measures

a) Tendering – for new capacity

Article 7, 1, entitles the Member States to launch a tendering procedure for the construction of additional generation capacity if a shortfall in the supply of electricity is foreseen which the market, on the basis of the authorisation procedure, does not seem to resolve adequately. The way in which such a tender should be organised are spelt out clearly enough in the text of the Article. There is no need to go into this in this paper.

The Commission submits that the tendering procedure has the advantage of being relatively easy to organise and will ensure that investors will actually construct the capacity tendered (as opposed to the authorisation procedure where the grant of an authorisation is no guarantee that the capacity authorised will be built). However, the tendering option equally gives rise to a number of important which should be considered by Member States:

- launching a tendering procedure constitutes an intervention on the market from the part of the authorities; - such a procedure, as is the case with other interventions, distorts the investment signals that exist in the market and could lead to 'a wait for the tender to be launched' approach on the part of investors;

The consequences of launching a tender in peripheral markets will tend to be more limited to the national markets.
However, launching a tender in a non-peripheral Member State does not only cause an intervention on the market in the country in question, but might also lead to disparities on the internal market regarding Member States that rely on different measures to ensure security of supply.

b) Equivalent measures in terms of transparency and non-discrimination – capacity mechanisms

For these reasons Article 7, 1 expressly mentions that Member States can equally take equivalent measures in terms of transparency and non-discrimination. The following capacity mechanisms seem to be available to Member States. They all have the characteristic in common of making the value to society of having enough reserve capacity explicit. The biggest differences are to be found in the adequacy of the price signal, the crudeness of the measures and their more or less market oriented nature.

- Keeping capacity standby for reserve purposes. Member States can decide to oblige a central body, most appropriately the TSO, to contract capacity for reserve purposes. This reserve should only be used when the market hits a level which represents the value of lost load, to enable the investment signal to do its work. However, it is likely there will be pressure from society to use the reserve in protest against the higher level of prices. This means that the fact that the reserve capacity is there, could potentially distort the investment signal, because the reserve capacity might be used before the investment signal leads to the construction of additional capacity. This might in turn lead to an ever greater need for centralised reserve capacity.

- Capacity payments. Member States may also decide to reward generators for having capacity available. The main disadvantage of this measure is that it does not guarantee that more capacity will actually be built, nor that generators will not abuse their market power in times of scarcity.

- Capacity requirements. This option obliges suppliers to buy a certain percentage of reserve capacity. This reserve capacity can be tradable, and can also be made up of interruptible contracts. However, as with capacity payments, they are no guarantee that sufficient capacity will always be available.

- Reliability contracts. In this case, the transmission system operator is obliged to buy call options from the generators. Upon calling of the options, the generators have to pay the difference between the market and the strike price. The income of the generators is equal to the strike price. If they do not cover the options with capacity, they lose on those when the options are called. During periods of scarcity they do not have an incentive to withhold capacity from the market.

This option, like the others described above, rely on central planning. It is submitted that the body best placed to control this element of the electricity market is the Transmission System Operator.

- Capacity subscriptions. This option removes the central planning element. In this option each customer needs to buy an electronic fuse which potentially limits his or her electricity consumption. The fuses are activated by the TSO in times of scarcity. Fuses will come in different sizes, signalling the price at which the consumer is still willing to pay for his or her electricity. They put a price on reliable supplies for individual consumers. The generators sell the fuses and can do so only if these are covered by available capacity.

c) Long-term contracts

Member States could also oblige suppliers to enter into long-term contracts with generators. These would have to take account of likely price developments for peak capacity and would always tend to be priced above the spot market price, which tends to be in line with the marginal production costs, except in case of supply scarcity and price spikes. It is submitted that it will be very difficult for customers and companies alike to project their requirements in a future long enough for the business cycles to take their course, which would be one or two decades. Two main disadvantages of the 'long-term' contract approach are the possibilities for eligible customers to switch to suppliers with less expensive contracts, coupled with the fact that these contracts might not be long enough to dampen the business cycle.

B. Appropriate energy efficiency – demand side management measures

A fundamental part of Article 7 refers to the ability of Member States to tender, or take equivalent measures in the interest of security of supply not only for new generation capacity, but equally for energy efficiency and demand side management measures.

Different options are open to Member States in this context:

- Interruptible load;
- Demand side management and energy efficiency measures taken by suppliers, for instance because they would be bound by their license to achieve an x percentage of savings of energy in the load they serve;
- Demand side and energy efficiency measures at generation plants;
- Real-time cost information to consumers through metering applications which would enable customers to adapt their consumption pattern in the event of higher prices.

The Commission argues that Member States should very carefully look into the options of taking the appropriate energy efficiency - demand side management measures. This is not only necessary in the framework of the environmental obligations the Community has entered into, but also because it is the only way open to the Community to improve its security of supply position regarding third country suppliers of fuels.

The arguments that energy efficiency – demand side measures can create additional costs, for instance for investment in appropriate meters, and are thus not an option for the short term, might have some justification. However, this argument can equally be used for investments in generation capacity. It risks shifting the short term towards an ever more distant future. These arguments should in any event not lead to inaction on the demand management and energy efficiency side of the options open to Member States to prevent any disruption in the demand / supply balance.

4. NON-DISCRIMINATORY APPLICATION OF AUTHORISATION PROCEDURES

In most Member States it is difficult to obtain a licence for construction, because of environmental restrictions, for instance on cooling water, and site availability.

The Commission has a role to play in monitoring that the application of the authorisation procedures and the licensing conditions do not constitute an unnecessary obstacle to investment, and would thus lead to a quasi automatic reliance by Member States on the basis of Article 7, which is meant for emergency circumstances.

5. NATIONAL OR INTERNAL MARKET

Article 24 of the Electricity Directive gives Member States a possibility to take non-specified emergency measures in cases of crisis:

Article 24
Safeguard measures

In the event of a sudden crisis in the energy market and where the physical safety or security of persons, apparatus or installations or system integrity is threatened, a Member State may temporarily take the necessary safeguard measures.

Such measures must cause the least possible disturbance in the functioning of the internal market and must not be wider in scope than is strictly necessary to remedy the sudden difficulties which have arisen.

The Member State concerned shall without delay notify these measures to the other Member States, and to the Commission, which may decide that the Member State concerned must amend or abolish such measures, insofar as they distort competition and adversely affect trade in a manner which is at variance with the common interest.

It is evident that the measures taken by the Member States must comply with the normal criteria of being the measures least restrictive of trade and competition necessary to avert the crisis.

Should a Member State resort to cutting off supplies destined for other Member States to ensure that no catastrophe in its own electricity system happens, it is clear that the Commission in its case-by-case evaluation of any such measures will require extensive proof of the fact that cutting off transits, imports or exports was the only envisageable way to counter a crisis in national supply. The interests of the Community, i.e. the creation of a truly internal market and Community solidarity, in this case in terms of security of supply of Member States depending on imports would tend to largely outweigh any such radical measures, if it should be found that less drastic measures could have been taken instead.

Any different approach would mean that the purpose of creating an internal market - more efficient and economically sound allocation of investment in capacity among others - would become void. It would mean that Member States could not rely on each other for security of supply and that every Member State would have to ensure coverage of its electricity demand domestically.

6. CONCLUSION

Member States are responsible for ensuring that security of electricity supply will be achieved. It is up to them how they apportion the rights and responsibilities to the different actors, regulators, transmission system operator, electricity companies, to ensure that this goal is met. If the monitoring exercise should demonstrate that a demand supply disruption is foreseen, intervention by the authorities on the market would be justified. However, given the fact that the internal market creates interdependence, with some Member States importing significant parts of their electricity requirements, a European wide solution to the issue has to be found, or at least a combination of compatible solutions.

Member States would be advised to decide ex-ante what approach they intend to take in the case of a foreseen supply scarcity problem, because the market will need regulatory certainty to be able to function effectively. Indeed, the Commission now proposes that there should be a requirement on Member States to set out its approach to these issues.[1]

This paper argues that Article 7 has to be interpreted in the sense that Member States are responsible for providing the right investment signals to market actors, should the market fail to provide for the necessary balance between demand and supply. On the basis of the Directive, the Member States would have to be able to demonstrate that the option they have chosen to ensure security of supply is the option least restrictive of competition and of the internal market necessary to achieve the goal of security of supply. The Commission would underline the fact that the option of energy efficiency and demand side measures will become ever more important in the framework of the creation of a sustainable electricity market.

[1] Proposal for a Directive on Infrastructure and Security of Supply COM(2003)764, Article 5

In any event, the Member State will have to be able to demonstrate that the lack of capacity is due to a structural market failure, which cannot be repaired by other means. In the interest of the Community, a Member State would have to choose the instrument which is the least disruptive of competition and of the internal market.

It is equally essential that the approaches taken in the Member States are compatible and do not distort the internal market unduly.