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COMMUNICATION FROM THE COMMISSION

**Delivering the internal electricity market:
making the most of public intervention**

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I. INTRODUCTION

A single, internal electricity and gas market for Europe is not an end in itself. It is urgently needed to help achieve the objectives of energy policy in the EU, including secure and competitively priced supplies, renewables and climate change targets of 2020 and a significant increase in energy efficiency across the whole economy. This market should be based on fair and open competition. To achieve these public policy objectives, it is widely accepted that there is a need for some government intervention in the energy markets.

Member States have agreed to complete the internal market by 2014. To ensure that the market is completed and works effectively, and to ensure that citizens benefit from the opening up of energy markets across Europe, it is important to address questions about the role, level and nature of public intervention at national or local level and ensure consistent approaches across the whole EU.

Public intervention can take different forms. Examples include public subsidies or legal exemptions to certain sectors or companies, state-imposed obligations and regulation. Public intervention can be useful and effective to attain agreed policy objective, but it must be well designed and adapt to changes in market functioning, technology and society.

In the Communication "Making the internal energy market work"¹, the Commission stressed that if public intervention is not well designed, without proper co-ordination at EU level, it risks being counterproductive and distort the functioning of the market. In the Communication "Renewable Energy: a major player in the European energy market"², the Commission underlined the need to adjust public intervention in order to expose renewable energies to market prices, diminish the costs of support and end support when technologies have become competitive.

These statements still remain valid since more efforts are needed to implement them. Especially for conventional sources, some Member States are considering significant public support to investments in new electricity generation capacity. This risks distorting the market, confusing investment signals and undermining competition.

Today, the European Union needs to look further ahead, and decide about the way how to achieve the long term objective of almost carbon free electricity, stated in the Energy Roadmap 2050³. The Green Paper on a 2030 framework for energy and

¹ COM(2012)663

² COM(2012)271

³ COM(2011)885 final.

climate policies⁴ points out that moving towards a more sustainable, secure and competitive energy system for the longer term requires review of public intervention. The European Council called on the Commission⁵ to provide guidance on mechanisms to support new generation capacities.

The case for reviewing public intervention in the energy market is strong as it has a significant influence on the costs and prices of energy and electricity production is capital intensive. In 2050 total costs of electricity supply is predicted to vary from EUR 100 to EUR 200 per MWh, depending on policy scenarios⁶. In 2011 the various types of support of electricity production in the European Union amounted to far above [EUR 60 billion]. Of this, Member States spent about EUR 26bn for fossil-fuel generation⁷, EUR 15bn for energy efficiency and EUR 30bn on renewable energy⁸. Public funding of nuclear energy was estimated to amount to EUR [35]bn⁹. The level of public funding to the various types of measures varies between Member States. Capacity mechanisms can be very costly too. In the EU costs vary from EUR 0.1 per MWh in Sweden to 20 EUR per MWh in Ireland. In the United States the costs of financing a capacity market reach 10% of the wholesale electricity price¹⁰.

Today, retail electricity prices in the EU are generally higher than elsewhere in the world. The end-user prices for energy paid by European companies and households have increased over the last decade in real terms.¹¹ The main reason for this are high and increasing taxes on the final electricity price, with limited competition and sometimes ineffective public intervention in its planning and implementation, often without reference to the European market and neglecting potential solutions on the demand side of the market (consumers and energy users).

Creating a European internal energy market is not just a European exercise. It requires an adjustment at national and local level as well. Member States must recognize the mutual interdependence that comes with being part of the European market. Through this Communication and its accompanying staff working documents, the Commission proposes ways in which the EU and its Member States can better adapt public intervention, whether political, regulatory or financial, to ensure that the EU-wide electricity market is completed and works smoothly for the benefit of all.

II. WHY RE-THINKING PUBLIC INTERVENTION IN ENERGY IS NECESSARY?

The internal market has changed the role of governments in energy markets, but it has not removed the need for government intervention. As the internal market develops, a number of issues have arisen which need to be addressed by public policy.

⁴ COM(2013)169

⁵ Council Conclusions of 22nd of May 2013

⁶ KEMA study for levelised cost of electricity over the five scenarios selected

⁷ <http://www.oecd.org>. Without indirect subsidies of conventional fuels in terms of their social and health costs that have been estimated at a further annual EUR40bn for the EU health systems.

⁸ International Energy Agency.

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¹⁰ Annex II of the staff working paper on generation adequacy

¹¹ IEA's index for industry's real end-prices for energy in EU OECD.

Renewables: an important and growing player in the electricity market

As the Commission highlighted last year¹², renewable energy production has become significant in the internal energy market, with 13% of EU final energy consumption coming from renewable energy sources in 2011¹³. The Energy Roadmap 2050 tells us that the share of renewables must and will increase in the longer term.

The benefits of a larger share of renewable energy in the energy market are well-documented, contributing not only the objective of sustainability but for example also to objective of diversified supply and greater resource efficiency. However most of the rules and support for renewable energy sources applicable today were designed when renewables technologies were in their infancy. As electricity markets evolve, as renewable energy technologies mature and as their penetration rates increase, support schemes need to become more market-driven, and take account of European market developments.

Response on the demand side

Currently, the role of the demand side in markets is understated and overlooked. Consumers have traditionally been treated as passive users, rather than an influential part of the energy market. Changes in the supply side, particularly increased "variable" generation from wind or photovoltaic power, and changing consumption patterns require flexibility coming from local renewable sources, energy efficiency and demand response solutions to effectively match supply with demand.

Developments of technologies supporting *demand-side response* (such as intelligent distribution networks, smart meters and appliances and electricity storages) and *demand-response services* (interruptible contracts for industry and households, participation in balancing markets, services aggregating demand) open new opportunities to increase system flexibility and reduce needs for generation capacity while rewarding consumers shifting part of consumption to cheaper periods. The potential of the demand side response at the European scale is enormous: peak generation can be reduced by 60 GW. This is approximately 10 % of EU's peak demand¹⁴.

Concerns around generation adequacy

Increased global competition for energy resources, the growing use of variable resources in electricity production in the EU, together with the need to finance the upgrading of today's aging electricity system create a number of uncertainties for energy providers. Regulated retail prices and wholesale price caps weaken investment signals and reduce incentives. The economic crisis has also been damaging for new investments and has increased uncertainties over future demand. In this situation of negative and distorted market signals and without large-scale demand-side response measures, concerns about whether there will be enough generation capacity in the future to satisfy demand inadequate have led some Member States to consider new

¹² COM (2012)271

¹³ European Commission

¹⁴ Staff working paper on demand response.

public intervention, such as support schemes for investments in new electricity generation.

Integration of national markets

The EU-wide integration and liberalisation of energy markets have opened up markets to energy suppliers from other Member States and made national markets more interdependent. On the one hand this development makes it possible to exploit the synergies and scale economies of the internal market. On the other hand, where markets are linked in multinational power exchanges, public intervention affects prices not only nationally but also in neighbouring markets. The resulting distortions of the internal market may be short-term, affecting system stability, electricity prices and energy production, but also long-term, crowding out investments in new capacity or diverting them to sub-optimal projects.

III. MAKING PUBLIC INTERVENTION MORE EFFECTIVE AND EFFICIENT

Providing public intervention is justified, well-designed and targeted and temporary in its application, it is possible for governments to intervene without distorting markets beyond what is necessary to achieve the policy objective. In a strongly interlinked and dynamic EU market, national regulatory and financial measures must be properly coordinated between Member States or even within a Member State. The lack of coordination has a number of detrimental effects, such as higher costs for consumers and taxpayers, fewer trade opportunities or subsidy races between Member States or between different policy goals.

Identifying a specific problem and its cause

To justify specific rules or support, it is essential to identify the problem to be addressed and demonstrate that the market alone is unlikely to solve it.

For example, without public intervention, electricity production is likely to be polluting and to create negative spill-overs for society because neither producers nor consumers have to factor fully in the cost of environmental damage. Besides reducing negative effects, public intervention can also create incentives for positive developments where the market fails to do so. This might be the case of developing new renewable energy technologies which are not yet commercial or investments to ensure security of electricity supply. Some investments require coordination by public authorities as they involve long-term commitment of several market players at once. Developing demand-response measures, for instance, requires coordinated action by distribution companies, providers of demand-response services and suppliers of electricity. It also requires removing barriers in networks tariffs and regulations, where they exist.

Once the case for public intervention has been made, the nature of the intervention needs to be assessed in the wider political and regulatory framework of the electricity market, including other intervention, in the Member State.

Assessing potential interplay with other policy objectives

When designing intervention in the electricity market, Member States may find themselves tempted to address different problems by devising several instruments in parallel, which ultimately can lead to a conflict between them.

For example, removing fossil fuel subsidies is one remedy to correct false energy price signals. Adjusting prices to reflect external costs is an additional step which might forestall public intervention. In other cases, there may be more complex trade-offs, for example, using coal for security of supply reasons might contradict environmental goals, or boosting variable power might fuel security of supply concerns.

Seeking to address different concerns in parallel may trigger contradictory and unnecessary intervention. To prevent this, Member States need to plan holistically, taking into account all objectives of energy policy and need to coordinate the various instruments of public intervention, including at the European level.

Evaluating alternative options: European and demand side dimensions

Before embarking on any form of public intervention, a Member State should seek solutions as far as possible within the European framework, and ensure that national intervention is complementary to the existing EU framework. Sometimes the solution to the situation in a national market might be found in a broader regional context, involving capacities or solutions available across the border thanks to the increasingly interconnected internal market.

In view of this, Member States should make full use of existing EU policies or programmes as well as ensure proper and proactive implementation of EU legislation.

Instead of granting subsidies for new or maintaining inefficient and polluting old generation, Member States could promote long-term contracts for constructing new power plants between generators and future consumers (e.g. consortia of industrial consumers) given they do not artificially foreclose the markets. Such contracts may provide producers with the predictability they need to make investments and at the same time not foreclosing the market.

Furthermore, it is illogical to develop European supply without a corresponding approach to the demand side. Demand response should be considered as a first alternative option before considering public intervention on the supply side. Putting demand-side action on an equal footing with supply is the most promising tool for better matching supply and demand through market mechanisms while offering consumers the possibility to lower their electricity bills.

Encouraging changes in consumer behaviour and consumers' involvement does not need to mean public financial intervention. Implementing the right measures (such as improvements in the use of information technology, roll-out of smart meters and appliances, reform of network tariffs hampering demand response and removal of regulated prices) not only creates opportunities for consumers to lower their bills and

strengthens electricity price signals. It also reduces the peak load and the corresponding need for costly new generation and transmission capacity, saving scarce investment funds and public resources while increasing the efficiency of the energy system.

Minimising impacts on electricity systems – ending hidden subsidies

Support for new generation often takes the form of establishing special rules for responsibility for grid balancing, priority dispatching and financial responsibility for network development. Whilst these rules may support the desired growth of generation locally, with the development of the open and competitive electricity markets, such rules lose their justification and are detrimental to the internal market.

The EU is harmonising market rules including network access rules (network codes) for electricity suppliers putting competitors from different Member States on the same footing regarding the costs of use of the cross-border networks and cross-border responsibilities for balancing. In addition Member States should ensure that national rules which are not harmonised are non-discriminatory and applied in a transparent and technology-neutral manner. Once these rules are in place interventions can be more equitable, without hidden subsidies to some producers and additional costs for the others.

Keeping costs low: auctions, technological neutrality and exploiting efficiencies at EU level

In defining any public intervention, Member States should ensure that the intervention is proportionate to the objective it is going to achieve. It should not discriminate against any particular technologies unless duly justified for example to achieve the objective of phasing out fossil fuel subsidies. In case of support schemes, tendering processes can help minimise the necessary level of support. Schemes based on required volumes instead of guaranteed revenues for production may raise risk premiums but are more effective to introduce cost competition between different technologies, thus driving dynamic efficiency and innovation.

As a general rule, support mechanisms should, so far as it is possible, allow competition between different qualifying technologies. Competition can be further strengthened by opening the support schemes to companies from other Member States.

The costs and benefits of national measures should take into account the EU market. Unilateral intervention conducted by a single Member State can harm companies in neighbouring Member States. Such intervention may turn out to be more expensive and less effective than a measure undertaken jointly by several Member States. According to a study conducted for the Commission¹⁵ the net benefit of achieving generation adequacy in the internal market amounts to EUR 7.5bn per year in the period 2015-2030. Further it is expected that sharing of balancing reserves would amount to annual net benefits of up to EUR 0.5 billion. Material gains of the order of EUR 4bn could come from using smart grids to facilitate demand side response at the

¹⁵ Study "Benefits of an Integrated European Energy Market"

consumer level. The most gains of EUR 16bn-30bn are available in the period 2015-2030 under the coordinated renewable investment scenario, making use of the internal market for renewable energy by locating renewable generation where it is most effective. When considering intervention, therefore, Member States should look at achieving the desired policy objective by use of not only the national potential but also the potential in other Member States.

Considering the impact on costs for industrial and household consumers

Energy costs are a key factor for the competitiveness of industries and for the attractiveness of an industrial location. Some Member States are inclined to partially exempt energy-intensive industries from additional environmental charges, such as financing of renewables, to compensate for the fact that prices in the EU are higher than in other parts of the world. Any such exemption needs to be carefully weighed against the additional costs it causes for household consumers and the rest of the industry, whose energy bills will increase as well as against the distortions in the internal market. In the case of intensive energy industries, only a very limited number of sectors, namely those exposed to international competition due to high electricity costs, may be eligible for exemptions.

Monitoring, evaluation and phasing out

In order to minimise distortions to competition, public interventions should be phased-out when the reasons for the initial rules or support vanish or when circumstances change. This requires regular evaluation. For example investment aid, does not require monitoring on the level of single beneficiary because the total aid is paid in only one or several instalments. At the same time, in order to achieve their objectives, public interventions need to present stable, long-term, transparent, predictable, and credible commitments for the investors.

IV. GUIDANCE ON SPECIFIC MEASURES

Along with this Communication the Commission issues guidance on a number of specific forms of public intervention related to power generation. The paragraphs below summarise the main recommendations of these documents.

Ensuring generation adequacy

Public authorities at EU and national level should first and foremost let the market forces work to carry out the appropriate investments. If there are doubts that the market can deliver generation adequacy and security, an objective, facts-based, assessment of the generation adequacy situation is a prerequisite to any intervention.

Consideration should be given to whether alternative measures such as investment in transmission infrastructure, including interconnectors, or more demand-side involvement can alleviate the concerns. The situation should be avoided where inefficient plants are kept in operation through public support or disproportionate

support is granted in response to a temporary difficulty, for example, the economic recession.

The causes of generation inadequacy must be properly identified and removed, including regulatory failures such as wholesale and retail price regulation, negative impacts on investment decisions of existing generation support schemes for fossil and nuclear generation. For renewable energy, alongside public intervention, effective intraday, balancing and ancillary services markets must evolve.

If generation inadequacy is a serious problem, a strategic reserve, a credibly one-off tendering procedure or an EU market-wide capacity mechanism are possible responses. Whatever mechanism is chosen, several elements should mitigate potentially harmful effects, in particular, the tendering for new capacity in an open, transparent and technology neutral manner, including demand-side response operators and operators from other Member States to the greatest extent possible (e.g. up to the maximum import capacity). The scope should reflect technical performance and the implications for CO₂ emissions from the lock-in effect of new generation capacity should be considered.

In case of capacity mechanisms, in order to minimise distortions on the internal market there should be no export charges or procedures to reserve electricity for the domestic market. There should be also no bidding restrictions or export restrictions. Adverse effects on the operation of market coupling should be avoided.

Interventions should be designed so that they are automatically withdrawn as soon as the capacity problem identified recedes (for example by expansion of interconnector capacity or development of demand side participation).

Best practice for renewable energy support schemes

The EU Member States are committed to promoting new and renewable energy forms of energy, under the EU Treaty. However, energy markets are unlikely to deliver socially or (broadly) economically desirable levels of renewable energy in the near future. To support "infant industry" and overcome specific market failures, governments must intervene.

The Commission has called for government intervention to create stable conditions for renewable energy investment and encourage the integration of renewable energy into the energy market. Support scheme reforms should not harm investor confidence. The Commission recommends supporting renewable energy in a stable, transparent, credible, cost-effective and market integrating way that ultimately leads to technological innovation and competitiveness of renewable energies.

As the renewable energy sector matures and grows and as costs decline, it is important that production and investment decisions are driven by the market. Any support that is still necessary should therefore supplement market prices, not replace them. In practice, this means moving away from feed in tariffs to feed in premiums and other support instruments, such as quota obligations, which leave producers free to respond to competitive market prices. Moreover, competitive allocation

mechanisms such as auctions and tendering procedures make it possible to reveal the costs of the different technologies, operators and projects and therefore to minimise public support. Excessive risks (and costs) of producers can still be compensated when necessary, but through means that drive costs down (such as degressive support levels) and do not disrupt market signals. Infant technologies and small, currently non-commercial production such as from individual households can still be supported, but alternatives to rigid, ex-market support for large volumes of renewable energy should be found.

In addition to the financial support provided for renewable energy, the regulatory measures, of the electricity system such as balancing obligations, the design of balancing markets, use of interconnections, grid connection charges and grid use rules can become more technology neutral and allow appropriate cost signals to be passed to all producers. The Commission also recommends convergence in Member States' approaches to setting support levels and applying cost minimising methods (such as competitive tendering for support) by proposing a common approach for cost elements and calculations.

Cooperating at EU level in development of renewables

The Renewable Energy Directive provides for EU-wide trading in renewable energy through the use of cooperation mechanisms. This allows Member States to achieve national renewables targets while using the different national resources of Member States most effectively, within existing electricity rules and physical infrastructure. Unfortunately little use has been made of these cooperation mechanisms.

Developing renewable energy through more common, European policies and measures can reduce the costs of developing renewable energy. It can also remove any distortions to the single market arising from different *national* approaches.

In the accompanying staff working document on this subject, the Commission provides more detailed guidance to promote the use of cooperation mechanisms in the renewable energy support schemes, including optional design features with annexes of templates of "standardised" agreements for any of the cooperation mechanisms.

Demand Side Response Measures,

The internal energy market is not just the sum of electricity producers and suppliers, technology companies and network operators. Half a billion consumers form a very important part – the demand side. They can play a significant role in making the energy system and the market more flexible, being through energy efficiency solutions, local renewable generation and demand response. This requires the necessary market opening and supporting technologies accessible to the consumer.

To that end, it is necessary to vigorously implement the demand response framework provided in the Electricity Directive¹⁶, in the Energy Efficiency Directive¹⁷ and elaborated in the network codes and regulations. If adequately implemented, this

¹⁶ Directive 2009/72/EC

¹⁷ Directive 2012/27/EU

framework and in particular the recent Energy Efficiency Directive¹⁸ enables and promotes voluntary aggregation of individual consumers and opens up the market to exploit the potential of demand response, putting demand side resources on equal footing with supply. It similarly requires removing existing tariff elements that hamper the development of demand response and it promotes the development of dynamic pricing for demand response solutions.

Further policy and regulatory work may be necessary at the Member States and the EU level to support the legislative framework in place. This includes supporting appropriate tariff design and making sure that dynamic intraday tariffs are available to end-user customers, which should facilitate billing consumers based on wholesale prices and not on consumption profiles. It is necessary to remove price controls, strengthen the price signals and develop further rules for coordination and interaction of different actors in the market, including in particular the role of distribution companies in local balancing as part of a more active distribution network. In this context, the access and exchange of data must remain safe and limited to the necessary but open, and it must be determined by the consumer.

In parallel to the application of this framework, it is essential to bring the enabling technology into the market through the roll-out of smart metering systems with the appropriate functionalities and together with the creation of the necessary framework for the broad introduction of smart appliances and control systems under Ecodesign, Energy Labelling and standardisation. Such smart technologies and solutions must be deployed urgently whilst respecting legal considerations on data security and protection, consumer privacy, and the protection from harmful intrusion.

V. CONCLUSIONS AND WAY FORWARD

The internal market is an important tool of European energy policy to ensure an affordable, secure and sustainable energy supply in the future. To preserve its role, it is necessary to ensure that national responses to deal with energy challenges do not undermine the process of completing the internal energy market and making it work smoothly. Making use of European measures, programmes or rules may in some cases remove the need for national government intervention. Where a Member State decides to intervene, whether legally or financially, directly or indirectly, long term or short term, on the supply side or the demand side, any actions should take account not just the national interest, but also the impact of those measures on the wider European market. This will be to the benefit not just of the internal market, but also for the citizens of that Member States and Europe as a whole.

This Communication complements other Commission initiatives to ensure consistency in the energy sector, in both policy and in the application of legal instruments. Thus, the Commission is also preparing the revision of guidelines on state aid for energy and environmental protection¹⁹ which will address topics such as support for renewables and capacity mechanisms and complement the above stated considerations and principles. The Commission will also continue to work with

¹⁸ Article 15

¹⁹ A draft of which is published concurrently....

Member States and national regulatory authorities, in particular through the Electricity Coordination Group, on addressing the challenges to ensuring security of electricity supply and generation adequacy as we transform the electricity system.

Public intervention to promote new generation adequacy may entail public service obligations imposed on generators, suppliers and/or transmission system operators. Such obligations should meet the requirements set out in the Electricity Directive and be clearly defined, transparent, non-discriminatory, verifiable and guarantee equality of access for electricity undertakings²⁰. The Commission intends to follow the criteria elaborated in this Communication in assessing the public service obligations in the electricity sector.

The importance of ensuring a fully functioning internal energy market will increase as the transition of the energy system continues. Issues raised in this communication are also relevant for the Commission's work on a future framework for climate and energy policies for 2030.

The level, timing and nature of public intervention in the EU energy market, and how to reconcile such intervention with the smooth functioning of an EU-wide market are questions which are becoming urgent for the EU, particularly in view of the 2014 deadline to complete the internal energy market. This Communication and the associated staff working documents provide recommendations and guidance on several pressing questions, including demand-side response, capacity mechanisms, and renewable energy support schemes and cooperation mechanisms. Implementing these principles will equip the EU better to ensure the internal market works well while helping the EU meet its energy policy objectives of sustainability, energy security and competitiveness, for the short and long term.

²⁰