



**POSITION ON GENERATION ADEQUACY,
CAPACITY MECHANISMS AND
THE INTERNAL MARKET IN ELECTRICITY**



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About UFE

The *Union Française de l'Électricité* (UFE) is the association of the French electricity industry. It represents the electricity sector employers within the electricity and gas branch of the French industry and promotes the interests of generators, TSO, DSOs and suppliers in the economic, industrial and social fields.

UFE is a member of MEDEF (the French Employers Association) and of EURELECTRIC, the industrial association representing the electricity sector at pan-European level. UFE brings together directly or indirectly more than 500 enterprises, which employ more than 150,000 staff and account for more than 40 billion euros of total revenues every year.

UFE members include: BKW, CNR, Poweo Direct Energie, EDF, ENEL France, E.ON, ERDF, France Hydro-Electricité (FHE), GDF SUEZ, POWEO, RTE, SDEM-GDFSUEZ, Syndicat des Energies Renouvelables (SER), UNELEG, VATTENFALL.

UFE is a not-for-profit organisation under French law. We adhere to the code of conduct of the EU Joint Transparency Register and carry the identification number 30146663069-53.

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Introduction

The February 2011 European Council declared the need to complete the EU internal energy market by 2014. Therefore, the **integration of the electricity and gas markets** remains a top priority on the EU agenda. Following its communication ~~%~~ Making the internal energy market work+ of 15 November 2012 [COM(2012) 663 final], the European Commission carried out an open consultation aimed at assessing how best to enhance generation adequacy and promote energy market integration at EU level. The UFE submitted its own response on 7 February 2013 and is looking forward to receiving the European Commission's feedback on the stakeholders's contributions. Our Association expects this exercise to provide further elements to adopt measures enhancing **security of supply**, one of the three key objectives of EU energy policy.

A new picture emerging

Over the last decade Europe has been experiencing a dramatic transformation of its energy mix, as a result of energy policies promoted both at the EU and at the national levels.

Following the adoption of the ~~%~~ energy and climate package+ in January 2009, the EU has set ambitious binding targets for 2020: 20% reductions in greenhouse gases emissions; 20% increase in energy efficiency; 20% share of renewable energy sources (RES) in the final energy consumption.

In the meantime, governments all across the continent have deployed various types of RES support schemes at the national level, mainly with the objective of reducing both primary energy imports and greenhouse gases emissions. In France, in particular, EDF and local DSOs are obliged to buy electricity produced by RES installations at pre-set tariffs. This allows RES producers to have a guaranteed return on their investments. Furthermore, RES operators face no risks as regards the market (related to the volume and or the price) and to the possible gaps between expected and actual production. They also face no counterparty risk. The costs of the system are borne by final customers.

The combination of the above mentioned policies has rapidly affected the energy mix of EU member states. Combined cycle gas turbines (CCGT) experienced a massive expansion in the early 2000s; older conventional thermal power plants have been gradually phased out; nuclear power has been ruled out by some countries and is being discussed in others. The most striking feature, however, is the impressive growth of RES throughout Europe, especially in countries such as Germany, Spain, and Italy.

Our industry is directly involved in this process and is fully committed to take the lead and take on the challenges ahead. The French electricity sector considers this as an opportunity to enhance further innovation and promote new business, while reducing primary energy imports and strengthening environmental protection. However, the current

situation presents a number of shortcomings that public authorities need to address. In particular, the rapid growth of RES across the EU, boosted by support schemes, has not been coupled with the necessary adjustments to the electric system and to the electricity market itself. Furthermore, the overlapping of measures at EU and national levels creates an increasingly complex regulatory framework, which brings inconsistencies and difficulties for the daily functioning of the power system and of the internal electricity market.

Within this framework, the UFE urges EU and national authorities to confer highest priority on the three following objectives:

1. Ensure full RES integration into the internal electricity market;
2. Make the regulatory framework more predictable and consistent in order to promote investments;
3. Secure generation adequacy, including by adding a capacity component to the current energy-only market.

Our views

1. Ensuring full RES integration into the internal electricity market

UFE acknowledges the positive role of support schemes in promoting RES technologies at a very early development stage, when they represent only a small share of generation. However, as RES technology matures and the RES feed-in becomes significant in the whole generation portfolio, support schemes have a distortive effect, particularly on the thermal generation market. RES should therefore be fully integrated into the wholesale market and compete on a level playing field, like any other generation technology. Besides selling their own production in the market, RES producers should take system responsibility for meeting scheduling, nomination and balancing requirements on their portfolio.

In the economic theory, the introduction of support schemes distorts price formation in any market and leads to situations where investment decisions are based primarily on the level of support, rather than on market price signals. This logic goes against market fundamentals and economic efficiency, often resulting in expensive and complex solutions, given that support schemes designing is rather complex. If investments are triggered by support schemes, it is questionable whether such investments will indeed be the ones needed to maintain generation adequacy in the system. In addition, the cost of inefficiencies is borne by final consumers.

As a matter of fact, poorly designed support schemes may entail excessive levels of remuneration, which lead to a level of installed capacity much bigger than needed (oversupply). Such schemes may also encourage the operation of subsidised plants even when energy is not needed, leading to negative prices. As a result, market functioning is disturbed and conventional generation is threatened by additional losses due to the

reduction of operating hours, which might endanger the overall security of supply of the system. This impact is not only local, as it spreads throughout Europe's interconnected markets.

Such situation may hinder decisions for new investments in generation, as well as the maintenance of the existing generation fleet. Therefore, an uncontrolled RES development may jeopardise the functioning of the electric system and of the internal electricity market.

Furthermore, the German and Spanish experiences demonstrate that the integration of mostly intermittent generation presents many technical challenges. These may be summarised as follows:

- a) *Continuity of supply.* Wind and photovoltaic generation (PV), which depend on weather conditions, add uncertainty and variability to the supply-demand balance, which becomes less predictable and harder to manage at local, national and European levels. Such intermittency can only be coped with through flexibility (flexible thermal capacity, flexible storage, etc).
- b) *Massive locational spot energy flows.* Being RES production pooled at EU level like conventional generation, it contributes further to increasing the use of networks and interconnections as well as congestion on transportation and distribution networks. As a consequence,
 - i. Strengthening transmission infrastructure appears often as an economically relevant response to curb these congestions, but it needs to take place when it is economically efficient. As a matter of fact, an unconstrained European transmission system would be inefficient and the cost would be prohibitive. Furthermore, reinforcements can take a long time to build, therefore planning procedures must be streamlined.
 - ii. Reinforcements are also needed on the distribution networks.
- c) *Economic inefficiencies.* Negative market prices emerge in certain hours, while RES electricity with marginal generation cost equal to zero keeps being injected in the network. In case of oversupply, therefore, the current priority dispatch of RES needs to be questioned.
- d) *Oversupply.* The existing generation portfolio has been unable to adapt to the unexpected RES growth, leading to an oversupply situation. In addition to funding and network congestion issues, a further consequence is downward pressure on average wholesale prices and running hours. This phenomenon adds to the severe economic crisis, which has also reduced wholesale prices and running hours for some plants.

In view of the above, UFE urges public authorities to make sure that the objectives of RES subsidies are proportionate, so that the electric system has enough time to adapt and stranded costs are avoided. A right timing must also be set and respected, so that investments are not discouraged by a lack of vision and of uncertainty about the future. Finally, the most competitive RES must be encouraged and ambitious R&D programmes deployed for those RES technologies that are still far from being competitive.

In view of enhancing and speeding up the integration of renewables into the EU system, RES generators must be incentivised to progressively enter the market on a level playing field with all other generators. In particular, they should be incentivised to sell their own production into the market as well as to meet scheduling, nomination and balancing requirements as other generators do. In addition, there should be progress towards converging market-based support schemes across the EU. Enabling market-based industrial demand to participate in wholesale market spot price formation will be fundamental for a well-functioning electricity market, although very difficult to achieve. It would considerably decrease not only peak capacity demand, but also the need for %back-up+ plants. Enabling demand response must therefore be one of the core elements of current energy policies.

2. Making the regulatory framework more predictable and consistent in order to promote investments

Electricity generation investment decisions are not based on current market conditions, but on the expected evolution of a number of value drivers over the lifetime horizon of the investment (20 years and more). Consequently, a lack of predictability of both the regulatory framework and market conditions over a certain number of years prevents operators from planning investments across the whole value chain (generation, networks, supply, and energy efficiency activities). Such investments, however, are vital for security of supply. Therefore, security of supply can only be achieved if the regulatory framework and market conditions are predictable over a number of years, so as to allow the necessary investments to be made.

One of the leverages for generation adequacy lies in pooling resources at EU level. This allows Europe to reduce the total capacity requirements and increase efficiency through cost savings related to installed generating units and further through reduced fuel cost savings. This can be achieved through efficient wholesale markets and exchanges between regions via interconnectors. Refining this optimization at the EU level is the goal in the context of the Regional Initiatives, through the integration of these wholesale markets via their coupling to different time horizons.

Support schemes implemented by EU Member States for RES and energy efficiency lead to CO₂ emissions reductions and to a lower demand for CO₂ allowances under the EU ETS. This contributes to lowering the CO₂ price, weakening the effectiveness of the carbon price signal, which is supposed to be the main driver for investments in no- or low-carbon assets for all sectors of the economy. During a crisis, furthermore, energy consumption and related CO₂ emissions decrease further. Therefore, public subsidies decided at the national level may ultimately hamper the ETS, which is the main tool available at the EU level for CO₂ emissions reductions.

Current market prices are not the only relevant signal to trigger investments in needed generation capacity, but expected fundamentals (price spreads power/gas & CO₂, power/coal & CO₂), favourable and stable regulation in the market are important criteria. In our view, the current situation when there is a lack of clarity about the key post 2020 policy goals and tools cannot persist as it strongly hampers investment decisions. Obtaining a clear idea about the key future policy choices, including what will be the RES support after 2020, what will be exactly the targets for CO₂ reduction beyond 2020, will significantly increase investors' confidence in the future of the energy sector.

In addition to this, the market must be designed so as to provide a level playing field for all actors and to ensure that price signals are provided in a rational way from the economic point of view.

More in general, regulations have to be consistent and not overlapping with one another. Instead of providing certainty to operators, the regulatory measures implemented following the adoption of the EU energy and climate+ package (20/20/20) have resulted in conflicting targets and have been overlapping with one another. In order to improve their consistency and a smooth interaction between them, the ETS should be the main tool available for the future climate and energy policies. Consequently, all targets should be measured on the same factor, i.e. emissions reductions.

UFE urges public authorities to ensure the predictability of the regulatory framework, in order to allow the right investments to be made. A much stronger consistency between the various measures implemented at the EU and at the national levels should also be promoted, for instance by having CO₂ emissions reductions as the only reference value for policies such as the ETS, RES and energy efficiency.

Funding and development of networks, RES, or energy efficiency programmes should be planned and organized over the long term under balanced and sustainable conditions for both the industry and electricity consumers.

3. Securing generation adequacy, including by adding a capacity component to the current energy-only market

In some countries, there is a risk that the overall power available is not sufficient to meet demand under certain scenarios, despite interconnections. In France, these concerns are particularly high for peak demand in winter, whose continuous growth over the past decade has been threatening security of supply. This proves the failure of the 'energy only' market when it comes to ensuring generation adequacy. As this is not a temporary problem, the solution must be structural. The key lies in the market design review: besides the energy market, capacity remuneration mechanisms should be introduced in order to ensure that all capacity needs are covered. Such mechanisms should include all capacity, without discrimination

(whether generation or demand); they should be market based; and they should take into account the import potential from neighbouring countries.

"Energy only" markets have proven effective to optimize the cost of supply given a particular level of demand. However, they do not guarantee that enough installed capacity is available to achieve the necessary generation adequacy. In France, in particular, operators have no incentive to invest in new peak capacity, whose returns are based on price spikes which are rare and uncertain. Therefore, without special measures quality would be well below standards.

Actions that are economically efficient to reduce the need for capacity can be pursued (e.g. investment in interconnections, demand-side management, contribution of new technologies to the demand management). Such actions, however, take time to develop, and do still not mean that the energy only market can provide any guarantee that sufficient (albeit smaller) capacity will be available to meet the security of supply criteria. Investment projects will indeed face the same uncertainty as before.

The development of harmonised generation adequacy standards across the EU seems to be the way forward in an integrated market. In this situation, it is not possible to assume that capacity located in one country only contributes to that country's security of supply. Moreover, this would avoid any risk of distortions of cross-border trade. Furthermore, it is hard to imagine in an integrated market how one member state aiming for a higher standard than a neighbouring member state will be able to avoid that this higher standard is crumbled by energy exports to the neighbouring member state in times of scarcity. However, it may easily result in a situation in which consumers in the country with a higher standard are subsidising consumers in another country where consumers are faced with a lower level of reliability.

At the same time, security of power supply is of key importance to member states and while a specific regulation at European level remains absent, the only regulation to this respect, i.e. Directive 2005/89/EC empowers each Member State to tackle its own security of supply. Besides, the structures of the power system (like generation mix, presence of hydro reservoirs etc.) vary widely among the different member states. Therefore it seems quite difficult to really obtain such harmonisation in the short term.

A pragmatic way forward would be that the European Commission outlines harmonized general principles that member states shall comply with at the same time that member states start cooperating at regional level to gradually move towards European adequacy standards, taking also into account cross-border network capacities. Having the same generation adequacy standards, however, is not enough to ensure the same level of investments across Member States. Other conditions should be fulfilled, in particular when it comes to creating a level-playing field between Member States and between technologies (RES and conventional generation).

When generation adequacy is endangered (through a lack of investments, for instance in peaking units), policymakers should consider introducing a capacity remuneration mechanism . ideally at a regional level or at least in coordination with neighbouring markets. In any case, consistency with the process of EU market integration should be ensured. Taking into account the imports capacity through cross border interconnections to evaluate the capacity residual needs of each system should ensure this consistency.

In some countries introduction of the CRM is already on the way, while other countries do not at all envisage this concept. The French mechanism, which will enter into force in 2016, is not fixing remuneration for capacity, but requires market participants to have sufficient capacity available in proportion to their respective capacity needs. It is a constraint on suppliers which will introduce costs, a secondary market to trade the capacities and therefore develop a market price of capacity for suppliers. This price will hence provide an incentive over time to add new capacity when needed. To estimate the need for capacity at minimum costs to consumers, it is vital to take into account import possibilities that are bankable during periods of stress. To this end the supply-demand adequacy outlook for Europe as a whole is very important.

The objective in the long term should be a coordinated definition at European level of capacity needs for each area of interconnection, taking into account the solidarity permitted by the interconnections between these areas and the quality standards defined by each Member State, as well as the introduction of capacity mechanisms to fulfil these requirements. However, developing the blueprint for a EU-wide capacity mechanism is still premature.

First of all, there is currently no specific regulation that tackles security of supply at European level. Security of supply under the Directive 2005/89/EC falls on the different National jurisdictions, therefore Member States may decide to set up their own national capacity remuneration mechanisms.

Furthermore, a single EU-wide capacity mechanism might not be feasible, as differences among Member States, as far as specificities of their electricity systems (e.g. penetration of RES, conventional mix, level of interconnection, level of reserve margins etc) are concerned, make it currently difficult to use one-size-fits-all solutions.

As long as a capacity mechanism can operate without disturbing the local energy market and without disturbing the interconnected energy markets, there is no reason to prevent the development of such an initiative in Member States facing security of supply concerns in the short run.

It is most important that any capacity mechanism is properly rewarding capacity and no other policy objectives are pursued with this mechanism. The capacity mechanism should be market based and not discriminating between new and existing units, different

technologies or between generation, storage and demand response. Otherwise costs to consumers will be higher than necessary.

Capacity mechanisms should only be introduced in order to ensure investment in generation capacity needed to meet peak demand and provide sufficient back-up for variable generation, and not solely to provide additional revenue streams to some generation or demand response capacities. They should therefore be assessed not solely based on their impact on the internal market, but rather on the combination of their efficiency at achieving the target they were set-up for and their compatibility with efficient competition and functioning of the internal market.

The capacity mechanisms should be market-based in order to avoid any discrimination between technologies or participants and in order to reveal the scarcity value of capacity. Any mechanism that discriminates between different technologies, different type of companies, existing or new built and between generation, demand response or storage would be distortive to the energy market. The CRM should ensure that all capacities (be it generation, demand or storage) contributing to security of supply deliver the same service (i.e. availability) and therefore receive the same remuneration.
