

Study on the measures to be taken in order to ensure an adequate volume of conventional production means to assure Belgium's electricity security of supply

Following a request from the Minister of Energy, the CREG has carried out a study on the measures to be taken in order to ensure an adequate volume of conventional production means to assure Belgium's electricity security of supply.

At the end of a public consultation, meetings with different market players, an operational analysis of the Belgian market (Energy Only Market), notably in combination with the strategic reserve and the examination of the strategies and models developed in the different European countries, the CREG has arrived at the following conclusions.

I.1 Regarding how the market operates

I.1.1 Remarks

1. First of all, the CREG analysed the way in which the market operates. Its conclusions are as follows:

- The uncertainties surrounding the Doel 3, Tihange 2, Doel 1 and Doel 2 nuclear power plants, as well as the perspective of a possible prolongation of nuclear power beyond 2025 are blocking any investment decisions. These uncertainties need to be removed as soon as possible in order to create a climate that encourages investment;
- The market players' perception of the short term risk of being confronted with adequacy problems is lower than Elia's perception. The short term needs analysis is perfectible (increased transparency on the hypotheses, the model and the results; development of the model to take into account, notably, the flexibility of demand; probabilistic approach to take into account interconnection capacities, etc.);
- A reliable analysis of the medium term needs (5 to 10 years) is missing;
- The market prices are effectively reacting to announcements that could lead to a shortage, but only on a temporary basis and not, as it may have been expected,

on a long term basis. According to the CREG, this is not due to a market failure, but is probably due to the fact that the zone is in overcapacity and/or that additional capacities are entering the market following the reaction to the market price.

- The production of Belgian units operating on gas is less competitive than production imported from neighbouring countries;
- Price peaks are inherent to the healthy operation of the market, during moments of tension or shortage. They are necessary to guarantee the profitability of the production units, in particular the one of the gas units that are producing less and less. Given that price peaks have little impact on the majority of consumers, whose demand is not flexible (either because they have a fixed-price contract or because their variable price contract is indexed on a forward price or day ahead price average), shortage scenarios could appear in exceptional meteorological conditions.

I.1.2 Suggestions for improvement

2. Besides the necessity to establish a favourable context for investments (energy policy stability, market information), the improvements suggested for the operation of the market are as follows:

Short term improvements:

- Price signal reinforcement in the long term (increased liquidity on the forward market, creation of a forward peak load sector) and the short term (improvement of liquidity on the intraday market, involvement of demand and the emergency groups in the market, development of metering on a quarter hourly basis and submetering, encouraging the integration of RES in the market);
- Removal of competitive handicaps, for example (i) by reduction of the imbalance price for the production units outside of the strategic reserve, during a structural shortage (imbalance tariff of 4,500 EUR/MWh), in order to reduce the financial risk in case of an unplanned breakdown, and/or (ii) by the establishment of a more favourable imbalance tariff for stand alone producers;
- Development of interconnection capacities, without losing sight of the fact that opening the borders may destroy Belgium's capacities and increase the country's dependency on imports;

- Development of demand and storage management able to reduce the production capacity needs;
- Optimal network usage to maximise the capacity made available to the market;
- Reinforcement of the responsibility of the ARP and suppliers to ensure they respect their obligations.

I.2 Regarding the strategic reserve

I.2.1 Remarks

3. The CREG believes that, at the current moment, the strategic reserve is an indispensable addition to the EOM, insofar as it prevents the physical consequences of a market shortage. The strategic reserve therefore acts as an indispensable short term safety net by contributing to the security of supply in four ways:

- It keeps available in the system units that would otherwise have been stopped for economic reasons;
- The risk of an increase of the imbalance tariff to 4,500 EUR in the event of structural imbalance encourages those responsible for imbalances (ARP) to secure their supply. During the winter period 2014-2015, this perspective has notably allowed for the development of short term capacities (interruptible contracts, emergency groups);
- The strategic reserve activation procedure gives an early signal of imbalance to the market;
- The imbalance tariff of €4,500/MWh during a structural shortage, as well as other production units entering the strategic reserve will lead to the improvement of the profitability of the units in the market and will favour investments. This is because the removal of some units from the market increases the perspective of increased prices, which improves the profitability of the units that remain in the market (see announcement of the units remaining in the market whereas their standstill had been announced). In the strategic reserve, the units have of course the guarantee to cover their costs, but they can no longer receive profits linked to price peaks from the markets. If market conditions improve, this may encourage them to return.

However, the strategic reserve mechanism does not compensate for the absence of long term price signals on the market allowing for investment: it can only work in a sustainable manner

if the market has sufficient capacity to cover demand under normal circumstances; it therefore relies on the hypothesis that the market provides the required level of capacities.

I.2.2 Suggestions for improvement

4. The CREG believes that the following improvements should be made to the strategic reserve mechanism:

- Improvement of the short term needs analysis (see above), notably by giving the CREG an advisory power on the different phases of its development;
- Definition of the conditions under which a unit participating in the strategic reserve can return to the market;
- Extension of the strategic reserve to new possibilities in demand side management (notably submetering), to production capacities other than those that are going to be decommissioned, which would allow the creation of new capacities (notably emergency groups, mobile units located off the market);
- Improvement of the mechanism's flexibility (for example, contractualisation of the units one year in advance, possibility of reviewing necessary volumes due to circumstances, etc.)

I.3 Regarding the limits of the current system

5. Even in the hypothesis where the current system can assure the conversion and renewal of the production fleet, this transformation could be slow and turbulent as it can only take place following a multiplication of price peaks that allow for sufficient signals to appear on the market to set off investment decisions for large scale units.

Furthermore, uncertainty regarding the availability of a large part of the Belgian nuclear production fleet could create an increased security of supply risk.

6. In reality, the stake is to find a balance between the three objectives associated with electricity production, namely the environmental, economic and security of supply objectives.

To attain the environmental objective, Belgium has massively subsidised intermittent renewable energy production and stopped using coal units. To attain the economic objective, it has massively invested in interconnection capacities (+3,300 MW) which allow it to obtain cheap electricity imported from neighbouring countries. The effect of these actions has, however, made the national thermal production fleet subject to competition which it is not able

to face. As a consequence, in the absence of coordination of security of supply at the European level and a guarantee of capacity availability via interconnections, the country's security of supply at times of stress (cold spells) could no longer be guaranteed by the market, even in combination with the strategic reserve.

7. In this context, the CREG is of the opinion that the implementation of a CRM is conceivable as a replacement of the strategic reserve if a reliable analysis of the medium term needs demonstrates significant need for new large scale capacities. The necessity and the cost of a CRM will largely depend upon this consideration.

In any event, the lack of capacity at a given moment is not a sufficient justification to introduce a CRM.

I.4 Regarding additional conceivable means

I.4.1 Short term

8. The CREG has envisaged additional short term solutions to guarantee the profitability of units on the market. However, following an initial analysis, a possible targeted call for tenders with financial incentive, or the conclusion of bilateral agreements - cf. financial option - with some production units, are likely to introduce distortions of competition and therefore do not appear to be compatible with European law. A call for tenders without financial incentive is obviously still a possibility and could allow for conditions aiming to facilitate the installation of capacities (for example, by making available - against remuneration - a site suitable for the installation of a production unit), but it would require a favourable business case. From then on, it could only target small scale units, and again, it would require an adaptation of the regulation. Income smoothing over several years does not offer a satisfactory solution either.

I.4.2 Medium term: a capacity remuneration mechanism (CRM)

9. The implementation of a capacity remuneration mechanism is a big decision that introduces new complexities into a market that is already not devoid of them. It requires an adhesion of at least a minima the main market players, taking into account the repercussions such a mechanism might create. It must also create conditions for a fair competition.

However, the result of the public consultation at this time is that there are differing opinions on the necessity of a CRM in Belgium, and on the design of a possible CRM. The mechanism should therefore create a balance between the interests:

- of the producers and aggregators who wish to secure their income;
- of the TSO, who wants maximum volumes;
- of the consumers, who want to be able to benefit from secure energy and at a price that is affordable and comparable to that of neighbouring countries.

Furthermore, given the risk of disturbance it may cause on the market, and taking into account the high degree of Belgium's interconnection with the neighbouring countries, the introduction of a CRM would not be possible without being discussed at a CWE zone level.

10. Taking into account the complexity of its implementation and the necessary delay between its establishment and the effective delivery, a CRM would not constitute a short term solution to a security of supply problem.

Furthermore, the examination of solutions implemented abroad indicates that each mechanism is designed to solve (a) problem(s) specific to each country. There is no one-size-fits-all solution: each solution is tailor-made and takes into account the specificities of the market, the production fleet, the geographical location, etc.

Finally, the CREG insists upon the complex, long and costly nature of the implementation of certain CRMs, of which the efficiency has not yet been proven.

11. Well calibrated, the mechanism may however meet the security of supply objective and favour an energy transition towards a system that is more orientated towards capacity than energy (of which the cost may, in the very long term, be close to zero).

12. The guarantee of the mechanism's stability over time is a key element of its success.

13. If there is a need for significant new capacities, the CREG suggests a mechanism that would include all of the following characteristics:

- Volume based (given the fact that its purpose is to assure security of supply);
- Generalised for all capacities (production, demand, planned or existing) to favour competition;
- Neutral at the technological level not to hinder the emergence of new types of capacities. The subsidised RES could be included on condition of deducting from

the capacity revenues the subsidies received; joint RES + storage offers could be envisaged;

- Centralised with a single buyer (more apt for providing a transparent price signal for the capacity) and predefined demand curb with different price levels. A primary bid would be organised four years before the year of delivery, followed by an additional bid to allow for the integration of demand and accompanied by a secondary market. However, these bids can only be envisaged if there is sufficient competition;
- Of which participation will be optional and not obligatory;
- Remunerating the availability of the capacity in such a way as not to disturb the dispatching function assured by the electricity market
- Granting contracts of one to three years. However, to assure sufficient predictability of income for new projects, a guarantee of obtaining a minimum price in the following auctions could be envisaged.
- In which the income obtained could only be in addition to other remunerations for capacity (infra-marginal income and remuneration for the reservation within the framework of the provision of ancillary services). In this context, the financial option mechanism could be favoured insofar as it allows for, in exchange for fixed income received on the capacity market, the reimbursement of the positive difference between the price of the reference market (day ahead or balancing) and an exercise price predefined in the option (guaranteeing the coverage of the variable costs of the marginal unit).

This product presents two further advantages: (i) it contains an implicit incentive to be present on the market at times of shortage and (ii) it avoids the determination of weighting factors for each capacity depending on the probability of their presence during consumption peaks.

- Whose costs could be borne by consumers depending on their contribution to the system failure risk.

As for the contribution of the cross-border capacities (and/or the interconnections), it first requires an assessment of the needs on a regional scale and the load sharing agreements in periods of joint shortage.

Finally, the CREG believes that, as a transitional measure, the strategic reserve should remain active until the possible implementation of the CRM in order to retain the existing capacity.

I.5 Suggested action plan

14. The following steps have been proposed to the government:

In the short term:

- introduction of reliable capacity need assessment tools in the short and medium term (after 2018, taking into account that at this moment (i) it is imperative that short and medium term uncertainties regarding nuclear power are lifted, and (ii) Belgium will have new interconnection capacities, of which the contribution to the security of supply will have to be analysed in conjunction with the neighbouring countries);
- introduction of measures to improve the operation of the electricity market and the strategic reserve;

In the medium term, if the needs analysis demonstrates the necessity of implementing a CRM:

- development of the design and cost assessment of the proposed CRM;
- finalisation of the design of the CRM and adoption of the framework legislation;
- adoption of the implementation decrees, implementation of operational measures and informing the European Commission about the mechanism.

The CREG would like to remind that, based on experience abroad, the implementation of a CRM (other than the strategic reserve) is complex and will take several years.