POSITION

Subject:	Elia consultation on the study on the future design of the ancillary service of voltage and reactive power control
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Contact:	Steven Harlem
Phone:	0032 2 500 85 89
Mail:	steven.harlem@febeg.be

Introduction

On the 10th of September, 2018 Elia launched a public consultation with regard to its study on the future design of the ancillary service of voltage and reactive power control (MVAR). On the 19th of September, 2018 Elia organized a workshop to present its study in detail. The deadline for the consultation is the 5th of October, 2018.

FEBEG welcomes this consultation and would like to thank Elia for creating this opportunity for all stakeholders to provide comments and suggestions on the Elia findings with regard to the future design of the ancillary service of voltage and reactive power control. The comments and suggestions of FEBEG are not confidential.

Disclaimer

First of all FEBEG wants to point out that the MVAR study is incomplete and contradictory. The study focusses solely on describing new evolutions, product design and contracting as regards the MVAR service, while detailed information on the remuneration is lacking at this stage. Market parties have thus only **a partial view on the proposals for a future MVAR design: they are at the moment not able to thoroughly assess all advantages and disadvantages of the future MVAR design**. FEBEG of course understands that CREG has certain competences as regards the financial aspects, but it would have offered a lot more comfort to market parties if all elements of the future MVAR service would have been available.

Secondly, FEBEG also wants to point out that – as soon as a complete view on the future MVAR design would be available – **a more thorough legal analysis has to be conducted**, especially as regards the potential discriminatory character of certain proposals as well as on the reasonable and fair character of the remuneration.

For the abovementioned reasons, the comments and suggestions of FEBEG cannot be considered as a final position on any of the elements of the future MVAR design. The answer of FEBEG can only be seen as a first preliminary feedback to feed the debate.

Comments and suggestions

Study of Elia is not objective and goes against the spirit of the Belgian Electricity Law

FEBEG considers the MVAR study as a typical example of **a 'goal seeking' study: the sole objective of the study seems to be building the case that market based procurement of MVAR is not possible**.

Study goes against spirit of the Belgian Electricity Law

FEBEG especially wants to emphasize the fact that the basic assumption of the study – i.e. market based procurement is not possible – goes against the spirit of the Belgian Electricity Law. Article 12 of the Belgian Electricity Law obliges Elia to procure all ancillary services via 'transparent, non-discriminatory and market based procedures'.

FEBEG would expect Elia to always do best efforts to comply with the Belgian legislation and that it would therefore **first of all thoroughly investigate all proposals that could improve the MVAR design within the limits of this legislative framework** before recommending to modify the Belgian Electricity Law.

Article 12 of the Belgian Electricity Law is – according to FEBEG – one of the key articles of the Belgian Electricity Law, especially for the viability of the Belgian power plants: it ensures that Balancing Services Providers receive a market based remuneration for the services they provide to Elia. **Any modification to this article risks to create a precedent and should therefore be carefully assessed and be restrictive.**

It is also important to point out that the Belgian Electricity Law is completely in line with new evolutions in the **Clean Energy Package that favors market based procurement of services by the grid operators**: all efforts should hence be made to improve the MVAR procurement within the framework of the existing legislation.

Study is not objective as alternatives are not properly investigated

In its study Elia lists several arguments why it expects that market based procurement cannot function, although it states that: '*In an efficient and liquid market, providers are expected to deliver the required volumes at the lowest possible cost for society. Therefore, if the right conditions to a perfect competition are present, Elia prefers a market based approach for contracting of an ancillary service'*.

For this reason, FEBEG would expect Elia to investigate – like Elia does for the other ancillary services which also highly appreciated by market parties – how conditions for competition can be improved, especially as **market based procurement will ultimately lead to the lowest cost for society**.

FEBEG sees also several elements that could make the case for market based procurement and that therefore should be **further analyzed and investigated**:

- Opening up the MVAR design to all technologies will no doubt improve the liquidity.

- As MVAR capabilities will be mandatory, the number of providers will also increase which will in turn increase liquidity.

- Allowing market based procurement and market prices is essential to allow grid users to have confidence that they will be recover the costs of their investments tin case they want to voluntary participate: a purely 'cost+' approach on a very limited set of acceptable costs and cost formulas might scare off possible new candidates.

- A correct price signal – as a result of market based procurement – would also allow to find a cost optimum from a global societal perspective: market-based procurement will provide the correct price signal to allow Elia to make the trade-off between procuring the service and investing in the grid.

- Elia also focusses on the lack of competition on 'nodes' with the argument that MVAR is not transportable. This claim raises some questions. How can MVAR be exchanged with neighbors (France) through interconnections if it is not transportable? How can two nodes (Doel/Tihange)

be so important that synchronous compensators should be installed there in case of nuclear decommissioning?

- Several new innovative tendering processes could be investigated as Elia is currently doing, e.g. for the procurement of the black start service. The procurement process should evolve to a more interactive process with the candidate providers, including a negotiation on the contractual modalities. An open and innovative tendering approach will attract more candidates, foster liquidity, provide the possibility to rightly benchmark all solutions and accord offered prices. The ultimate benchmark of the prices is the cost of the TSO (Elia) investing itself in a technical solution like capacitor banks, to control the reactive power and voltage in a region.

FEBEG agrees that the future MVAR design should aim at lowest cost for society. This **reflection should nevertheless not be limited to the short term, but also include a view on the future evolutions** in the electricity system and the grid:

- Future investments and operations of Elia are also factors determining the MVAR needs. In a regulated model the costs of the increasing MVAR needs would simply be pushed to the grid users. From the perspective of trying to achieve the global welfare, there should be an incentive for Elia to strive to limit the increase of the MVAR needs: a market based procurement could contribute to this.

- In the future the MVAR supply will most probably come from very different sources/assets and network layers. Hence, market functioning is of utmost importance to facilitate this transition integrating new sources and incentivizing innovation.

Regulated remuneration is last resort and should cover all costs, including fixed costs

FEBEG remains convinced that a regulated remuneration is not the best way forward, as it is an **intervention in normal market functioning**. Unfortunately, the proposals of the regulated remuneration are not know yet. Therefore it is **not possible to analyze them from a legal perspective (ownership rights, freedom of contracting, expropriation rules, …) or to assess their reasonable character**.

For FEBEG it is **essential that the remuneration covers all costs (not limitative description)**:

- Industrial and operational risks:
  There is always a risk of forced outage when and as a result of providing the service (especially in absorption); this will necessitate repairs, coverage of lost energy (balancing, ID, DAH) and a risk of R1, R2 and R3 penalties or Transfer of Obligations with other parties.µ

- Monitoring costs:
  - Additional equipment and software has been placed for monitoring, especially in absorption mode the stability and the heating of the alternator have to be closely monitored.
  - Part of the inspection program of the alternator is aimed at identifying damage as a result of the reactive power delivery (inspections mean that alternators have to be opened, and to avoid explosion risk, the H_2 cooling has to be drained and purged with CO_2).

- Training and administrative costs:
  Operators have to be aware of the inherent risks especially in absorption mode and for issues specific to the plant. Furthermore the provision of reactive power service incurs additional costs for legal functions, contract management and commercial functions.

- Commercial risk:
  Fixed costs 'variabalized' might mean that not all fixed costs are covered by the volumes of reactive power delivered or absorbed and consequently, market risks must be reflected in a variable price component in addition to the fixed price component.

- Maintenance cost:
  - Alternators are partly oversized to make sure that the P nom is deliverable with the cos phi range requirement as set by the Belgian grid code, therefor part of the maintenance and overhaul costs should be allocated to the reactive power service.
  - As demonstrated in the Cigré document 'Technical Brochure, Guide: Generator On-Line Over And Under Excitation Issues, Working Group A1.38', alternators, and especially their stator, might suffer additional wear and tear, as a result of the supply and especially the absorption of reactive power.

Contradictory statements in study on wear and tear

While the study notes on page 22 as part of the EU benchmark that '*the price value mostly represents a compensation of losses and maintenance related to wear & tear caused by delivering reactive power regulation*', the study concludes in page 45 that '*additional wear due to higher stress for the unit constitutes another type of cost due to reactive power provision. However, the determination of wear caused by reactive power provision is complex, and in most EU countries is not considered for remuneration*.' Unfortunately, the details of the EU benchmarking exercise are not made public and whether or not the above is true, cannot be deducted from the study. **FEBEG is of the opinion that costs related to additional wear and tear must always be remunerate**d, especially for those plants that are more likely to be used for the service due to their location in the grid.

- Specific cost:
  Specific costs due to plant specificities and some defaults, e.g. as a result of the initial construction, plant reconfigurations or ageing.

- Investment costs:
  The cost of oversizing the components required for the provision of reactive power service and especially in the case alternative solutions have to be found (e.g. converting an alternator in a 'compensator' by installing a clutch between turbine and alternator so it can supply or absorb reactive power avoiding the full power plant operation, making it independent of active power market delivery and saving out fuel costs).

FEBEG would like to put forward the **following recommendations with regard to the structure of a potential regulated remuneration**:

- The **manual as well as the automatic service need to be remunerated** as it is difficult, nearly impossible, to make a differentiation between the two services.

- The remuneration should be differentiated as much as possible – a universal price would cause a discriminatory treatment of generators which FEBEG strongly opposes – also taking into account for example the type of technology and the age of the asset.

- **A variable price according to reactive power bands and differentiation between injection and absorption** are indeed options that allow to better reflect the additional tear and wear as well as the technical and market risks.

- As soon as the service is **mandatory** and dispatched by Elia, **Elia should compensate the real full cost of an outage** due to the MVAR service to the affected operator.

- FEBEG is also of the opinion that the **MVAR service comes with two components and that dual pricing of capacity and energy will be a fair and most cost-reflective remuneration**. The first component is the technical possibility of providing the service to the TSO which comes with fixed installations, risks and service costs. All these elements would be best reflected with a fixed capacity charge as part of the fixed cost component. The second component is the activation of the provided capacity which would be best reflected with the degree and duration of activation.

What could a potential price structure look like?

FEBEG would like to point out that defining the price structure will be crucial in order to cover the costs incurred by generators that have the obligation to provide MVAR to Elia as well as in order to attract the voluntary provision of these services. Unfortunately, the study has neither proposed a potential price structure nor provided details of how this price structure is configured in other EU countries.

In FEBEG's view the reactive power price P_{Mvar} could consist of the indexed variable price component V_R and a fixed price component F and FEBEG proposes the following price structure as a possible alternative that should be analyzed in the future design proposal:

$P_{Mvar} = V_R * (Index(y)/ Index(x)) + F$ €/Mvar/h

Where:

V_R shall be the variable part for the specific range R, which covers the delivery costs (Joule losses, Hysteresis losses and Foucault losses of the generation due to less efficiency) such as fuel cost, CO_2 costs, extra cooling costs, outage costs, imbalance costs.

Index(y) shall be the arithmetic average of the end of day settlement prices for the baseload delivery in Belgium for the respective calendar year "y" as published by EEX on https://www.eex.com/en/market-data/power/futures/belgian-futures during the fourth quarter of the preceding calendar year "y-1". The result will be rounded to two decimal places.

Index(x) shall be the arithmetic average of the end of day settlement prices for the baseload delivery in Belgium for the respective calendar year "x" (x is a base year, when this price structure for reactive power will be fixed) as published by EEX on https://www.eex.com/en/market-data/power/futures/belgian-futures during the fourth quarter of the preceding calendar year "x-1". The result will be rounded to two decimal places.

F shall be the respective fixed costs as addressed throughout this document.

Some elements of the MVAR design risk to be discriminatory

The proposal for a new MVAR design **doesn't ensure a level playing field between grid users at all**. Several elements risks to create discriminations:

- Some grid users will be imposed to deliver the service and bear the related costs and risks while others will not have to deliver the service.

- Existing units that already supplied the service can be imposed to participate and bear the related risks and costs while existing units that didn't supply the service yet can voluntary participate.

- All grid users need to comply with the requirements in the Federal Grid Code and the connection agreement: for grid users that are obliged to supply the MVAR service, the technical requirements to deliver the service will be carefully checked. What about the others that are not asked to provide the service? Will they be forced to invest in order to fully comply? Could Elia in this respect also confirm that there will not be any additional requirements or administrative burden, e.g. prequalification, for existing grid users that already provide the service?

- In theory, all grid users have to comply with the minimum requirements. According to the proposals for a new Federal Grid Code, grid users should also offer all available capabilities of the unit. FEBEG is of the opinion that these additional available capacities – above the minimum requirements – should only be offered on a voluntary basis otherwise having those additional capabilities would mean that the concerned grid user would incur more risks and costs than a grid user not having those capabilities.

- Applying a universal price would also cause a huge discriminatory treatment of generators and FEBEG strongly opposes such universal pricing.

In order to ensure a level playing field between grid users, Elia should **establish transparent, fair and non-discriminatory rules for choosing the grid user** that will be obliged to deliver the service and **allow market based prices as – in essence – these prices will make up for the differences in risks and costs for the grid users**.

Some aspects of the future MVAR design need to be further clarified

FEBEG is of the opinion that the following aspects of the MVAR design are not clear and need to be further developed and explained:

- The Elia study doesn't explain how Elia will deal with power plants that – because of reduced technical capabilities to, for example, age – don't comply with the requirements anymore. Will these power plants be forced to choose between huge investments to comply or disconnect from the grid?

- It is also not clear how the delivery of the service by the DSO's will look like. How will the DSO's provide the service? Where will they find the MVAR? How will this be translated in the connection contracts?

- In case of local production delivering the MVAR service, the load will have to pay the MVAR tariff: Q_load should then be compared to P_load and not to P_global (for determination of the slices). Elia should make this solution globally more attractive (financially) than the MVAR tariff on the net offtake of the site (where the local production produces/absorbs MVAR to compensate for the MVAR needs of the load).

- For existing local production units that haven't been contracted so far: the study of the local grid topology and local assets will determine the capabilities of the unit for the MVAR service. On a complex industrial site, the costs for such study may be high: who will bear these costs? If the unit is not contracted for the service (as a result of the study), there will be no possibility to recover these costs through the MVAR contract. If the unit is contracted, will these costs be included in the remuneration? In case of technical modifications on the industrial facilities, it will be necessary to update the study: the same questions arise with regard to the costs of this update. Furthermore when several parties are involved (e.g. when the owner of the local production unit is not the grid user which holds the connection contract), the new rules may be conflicting with the existing contractual relationships.