

Subject: FEBEG's comments on ELIA's public consultation on the methodology, data and scenarios for the AdFlex study for the period 2024–2034 and the scenario parameters for the "Low Carbon Tender" 2024–25

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FEBEG thanks ELIA for having the opportunity to answer ELIA's Public consultation on the methodology, the basis data and scenarios used for the study regarding the adequacy and flexibility needs of the Belgian power system for the period 2024–2034 and including also the scenario parameters for the "Low Carbon Tender" 2024–25¹.

The study regarding the *adequacy and flexibility needs of the Belgian power system* is hereafter referred to as AdFlex.

The comments and suggestions of FEBEG are not confidential.

General comments

We thank ELIA for all the documents and information provided in the frame of the present consultation as well as the extensive presentation made at the Adequacy Working Group of 28/10/2022. FEBEG would like to highlight that no comment provided on a specific topic should not be considered as an approval.

FEBEG acknowledges and welcome the important efforts made by ELIA in order to document the sources and assumptions used by ELIA for the determination of the parameters it intends to use in the frame of the upcoming AdFlex study.

We also recognize that the present exercise is particularly complex given the particular European context, with the ongoing energy crisis and Ukraine war, while having gone through lock-downs in 2020 and 2021 due to COVID-19 pandemic and while climate crisis has also called for action. We therefore welcome ELIA's commitment to perform an update beginning of 2023 of the assumptions which may need a reevaluation.

¹ https://www.elia.be/en/public-consultation/20221028_public-consultation-adequacy-study-2022-2032

Preliminary remarks regarding adequacy

FEBEG is convinced that the existing thermal fleet will continue to play a crucial role for the security of supply of Belgium for the coming decades. For this reason, FEBEG considers of utmost importance to keep a stable and favourable investment framework for those assets to remain on the market in the transition phase towards a fully decarbonized world. In this respect, FEBEG appreciates the efforts of Elia to continue improving the CRM design but would like to remind that, for the moment, **there are still some important uncertainties or problematic elements that may impact the future of the existing thermal fleet in Belgium**, and in particular:

- **the current modalities of the payback obligation.** We urge Elia and the authorities to further implement the changes with respect to the strike price indexation formula discussed in the WG Adequacy and to ensure that the payback obligation does not negatively impact existing plants over the long run. It is indeed essential that the strike price follows closer the evolution of the electricity market and the underlying costs of the existing thermal fleet to avoid undue payback of revenues.
- **the evolutions of the CO₂ emissions' limit to participate in the CRM.** Last June, the SPF Economy launched a consultation on possible trajectories to reduce the current limit in CO₂ emissions in future CRM auctions. FEBEG members are very concerned with the recommended trajectory, possibly making the participation of most gas-fired plants no longer possible as from delivery year 2027–28.

FEBEG considers this initiative particularly impacting and should definitely be considered, if this materializes, in the upcoming AdFlex study. FEBEG has already alerted the authorities on such overly ambitious trajectory because it could lead to closure announcements in the next decade. Clearly, given the limited possibilities to decarbonize the gas-fired power plants, we recommend authorities to allow the existing gas plants to remain in the market until 2035 at least. Their limited running hours in the future, combined with increased RES and batteries, will contribute to an overall reduction of CO₂ emissions of the power sector while ensuring the Security of Supply.

- In addition, FEBEG also calls for a revision of the **IPC derogation files' procedure to ensure that the needed investments in existing plants can be financed through the CRM** (to the extent the concerned assets remain competitive).
- Finally, **the increased pressure on the T-4 with participation or opt-out (IN) of DSM, could potentially at some point exclude some existing gas plants**, while their participation in the T-4 would actually be required to unlock an investment decisions. **We also recommend Elia and the Belgian authorities to review the split between volumes open in the T-4 and the T-1 auctions.**

FEBEG has always pleaded for a strong base of flexible and steerable capacities located in Belgium to ensure the security of supply in the long run. In this respect, FEBEG also has and continues to plead to have sufficient “local” margin allowing the country to face events limiting its import capabilities such as unavailability of capacities abroad, minRAM 70% not reached, change in foreign policies, Indeed, when it comes to power generation capacity, there are not so many short-term solutions bringing significant MW's to palliate complex problems. The structural issues impacting the availability of the French nuclear fleet and the consequences of the war in Ukraine demonstrate that having sufficient national capacity is actually beneficial for the country.

Security of supply is a serious matter and implies the implementation of robust, fair and long-term solutions for market parties. FEBEG calls authorities to anticipate future capacity needs by (i) reviewing the volume split between the T-4 and T-1 auction, allowing to secure more new capacity in the T-4, (ii) taking realistic hypothesis in terms of contribution of foreign capacity to secure sufficient margin on the Belgium territory and (iii) by avoiding to take ‘ad-hoc’ last-minute palliative measures such as the low-carbon tender currently in development that could undermine the investment climate and increase the perceived regulatory risks in Belgium.

In conclusion, the electricity sector is characterized by highly capitalistic investments with a lifetime of more than 20 years. FEBEG once again underlines the need to have a stable long-term investment framework in order to give investors the necessary confidence that will result in attracting capacity to ensure security of supply.

Comments and suggestions regarding the input data

Thermal fleet

FEBEG refers to the general remarks above and the perceived risks for the existing fleet in the framework of the CRM. **We therefore recommend Elia to at least consider a sensitivity where some gas-fired power plants are excluded from the CRM and/or no longer investing due to the above mentioned reasons** so that authorities can correctly assess the possible impacts on the adequacy.

Renewable energy sources

The objectives are ambitious but the NIMBY-effect – and in particular the delaying effects of the appeal procedures – should unfortunately not be underestimated.

It should furthermore be noted that, for the offshore wind growth ambitions, the execution of these projects will also depend on the timely execution of the Ventilus project. Experience has taught the sector that such large-scale projects will face the necessary challenges before they can be realized, the fierce opposition from both the local residents as from the communes against the Boucle du Hainaut is a good illustration of this. Therefore, **in the base case scenario, Elia should consider a postponement of the additional offshore capacities.** The planning published on the SPF Economy website is indeed expected to be reviewed due to delays on linked projects. In addition, the extra 2.800 MW capacity is to be considered as a maximum (range is between 2.450 and 2.800 MW).

Electricity demand

Elia expects a strong increase of demand in the coming years following further electrification. FEBEG supports such vision and also expects a strong impact of the electrification of the demand in the next years. However, the penetration of EVs seems underestimated compared to regional ambitions.

Storage & Demand response

Storage

FEBEG also observes high ambitions in terms of large-scale storage capacities. We understand that these assumptions are based on expressed ambitions and plans based on projects known today at Elia. However, at this stage, there are no guarantees that these will materialize.

Most importantly, next to the economic viability analysis, **it is crucial to check the connection possibilities to the grid in the short and medium term** for this important volume of expected large-scale batteries.

Demand Side response

FEBEG observes very optimistic assumptions on the evolution of market response capacity in Belgium.

The forecast for industrial Demand Side Response (DSR) in Belgium is very high compared to neighboring countries. Table 1 presents a comparison between the proposed AdFlex assumptions (1.8 GW existing and an additional potential of 450 MW in 2025), and the values from ERAA2022 for the neighboring countries. **When accounting for the size of the countries, it is clear that this forecasts for Belgium is high.**

Table 1: DSR capacity [GW]

	BE-existing	BE- max potential	DE	FR	NL
2025	1789	2248	2999	4200	700
2030	1789	2998	5499	6500	700

Sources: BE: *Elia 20221028_assumptionWorkbook_adFlex_2023_PublicConsult.xlsx*; DE, FR, NL: *ENTSO-E, European Resource Adequacy Assessment 2022 Edition, ERAA_2022_PEMMDB_post_consultation.xlsx*

We understand that the estimation for the existing industrial DSR is based on analysis from E-Cube for the winter 2021 / 2022, characterized by exceptionally high natural gas and power prices. Therefore the question arises whether this period can be extrapolated to the future. The sustained high power prices has lead to reduced industrial output, creating DSM capacity in the industrial sector. Therefore, the potential to react to prices could be artificially high. Consequently, **we consider that Elia should be more prudent when extrapolating future DSM volumes. A too-optimistic view on these volumes could undermine perceived risks in terms of security of supply.**

In addition, **it would be more prudent to back up the statical analysis with a more fundamental view:**

- Which industrial sectors contribute to DSR and in which industrial sectors do we expect further growth?
- Is there a real commitment from the industry to further increase its ability and willingness to adjust its power demand to prices?

Finally, on the methodological side, the statistical analysis from E-Cube, reveals a relatively important standard deviation, e.g EPEX 2021 / 2022, average 1.2 GW, Standard Deviation 0.3 GW. Is this uncertainty around the availability of DSR taken into account in the adequacy simulation?

Economic and technical variables

Investment costs

FEBEG supports the assumptions taken in terms of price evolutions (consideration of the inflation based on IPP) but will let its members comment on the CAPEX level considered for the different technologies.

Fixed O&M (A fry study)

FEBEG thanks Elia and Afry for the clarifications provided in the update of the FOM costs performed by Afry. FEBEG supports the general trend of increased FOM costs between the 2020 and 2022 study performed by Afry and appreciates the clarifications and transparency provided about the costs considered in this study.

However, **FEBEG asks for further clarification on variable costs**; those last ones being computed by Elia and for which no details are provided to our knowledge. Indeed, there are still some costs which have not been considered in the exercise of Afry (like taxes, imported power, gas logistics optimization costs, ...) and which cannot be as such understood as “variable”, in the sense of being proportional to the produced electricity. In any case, the fact that these costs are not considered in the Afry study as FOM cannot be a way-out for omitting them.

FEBEG will let its members comment on the specific data but **it should be clear that a generic approach in a study should never prevail over individual costs in an other context than adequacy studies.**

Finally, **FEBEG does not agree with the assumption followed by Afry that the fixed O&M cost would significantly decrease in case the running hours would be divided by two.** There is indeed no linear decrease of fixed costs based on the running hours.

Given the fact that the capacity will be available all year long, a large part of the fixed costs still need to be supported (insurance, staff, ...): this is the reason why those costs are categorized under ‘fixed’. In addition, even if the running hours decrease, the number of start-ups may likely remain or even increase, which would imply that some overhauls cannot be postponed.

Also, given the uncertainty linked to CRM participation or possible changes in regulatory or CRM framework, it should not be assumed that the depreciation period of investments like a major overhaul can be extended over a long period. **We understand that Afry computes the annualization of investments based on the expected running hours: FEBEG cannot support this approach as one should consider an economic reasonable duration taking into account regulatory, permitting, contracting and other CRM-related risks.**

WACC

FEBEG refers to past comments on the Study of Professor Boudt. In addition, FEBEG has a general comment on the build-up of the WACC. Despite mentioning its sources (study from Professor Boudt), the Risk-free rate and inflation rate seem underestimated given the current market evolution. Indeed, the On Risk-free rate, the long term interest rate in Belgium has risen by 1% between August and today².

FEBEG asks to review the WACC considering the changes of the underlying parameters. We invite ELIA to use the latest known figures in the final study.

Assumptions on short-term flexibility

Regarding the need for flexibility, FEBEG would like to refer to the WG MOG II sessions which have been organized by Elia in the past months and years, and in which FEBEG and the members of FEBEG have participated actively. FEBEG also did react via various ways on the topic of the integration of (additional) offshore in the Belgian system. Despite the significant and detailed analysis that was performed (with the University of Denmark for example) we find little information on how Elia will take into account the lessons learnt from these MOG II sessions and interactions. FEBEG recalls that the analysis demonstrated that the needs for flexibility could increase significantly in the coming years due to the increase in offshore wind capacity. In addition, since the ambitions of the federal government regarding offshore have reached new heights (of up to 8 GW), the needs for flexibility will automatically become even more important than previous estimates have indicated.

On the other hand, regarding the means to offer such flexibility, FEBEG has doubts about the assumptions put forward by Elia. While we hope that more flexibility can be unlocked in the coming decade, we are also concerned that there will be many hurdles still to overcome to tap into the flexibility, especially at the level of the household. We urge Elia to consider scenario's in which flexibility from the DSO grid (from EVs or heat pumps) will not be easily accessible (for example due to limited consumers interest in such services) as this would be a prudent and correct approach. Indeed, to count on such flexibility to be there to balance out many GWs of intermittent wind and solar energy is very optimistic or even dangerous.

² OLO 10 jaar – Taux | L'Echo (lecho.be) – <https://www.lecho.be/les-marches/actions/olo10jaar.510138581.html>

Interconnections & Other EU countries

FEBEG also recommends Elia to carefully model the expected available capacity in neighboring countries in the short and medium term considering changing energy policies across Europe.

Due to Belgium's particular situation, the availability of interconnected capacity will be heavily dependent on the situation abroad, more in particular in France and Germany. We underline that the current situation with the French nuclear units being much less available than announced, France will have to rely more on imports to ensure its security of supply, via Belgium in most cases. This will lead to higher transit flows on the Belgian network and thus heavily reduce the import possibilities for specific Belgian capacity needs and thus require more domestic capacities within the Belgian balancing zone to be available to guarantee security of supply in such cases.

Flow-based domains

FEBEG considers that there remain uncertainties on whether the ambition of minRAM 70% will really be achieved as planned throughout Europe. For instance, we observe that derogations are still claimed by some countries, while for others action plans are put in place to reach the minRAM (e.g.: Germany). FEBEG considers that the risk of non-achievement of this rule should be included in the reference scenario.

Suggestions regarding the sensitivities.

Considering the elements above, FEBEG would welcome following sensitivities:

- Availability of gas-fired power plants in case of strict CO₂ emissions' limits in the CRM (current rules – proposed trajectory (if known at the time) – ambitious trajectory)
- Non-availability of several French nuclear reactors (with various levels of unavailability)
- Lower RES development
- Less DSM and storage capacity (compared to the base-case scenario which for which the values should already be lowered – cf. comment above)
- non/strict achievements of the FB CEP rules

FEBEG would also propose to combine some of these sensitivities to better understand the combined effect of the most likely ones on an highly interconnected such as Belgium.

Finally, considering the on-going discussions regarding the revenue-cap at EU and Belgian level, the impact of such cap should duly be considered in the Economic Viability Assessment, either directly or in the form of a sensitivity.

Comments on the methodology

Regarding the climate years

Simulating consistent meteorological risk factors (wind, PV, temperature) over the full geographical scope of a power system is the current state of the art in power system modelling. FEBEG therefore supports this approach. It guarantees that geographical and spatial correlations are correctly reproduced. These correlations have an important impact on adequacy analyses. They help to reproduce events like the Dunkelflaute, hitting multiple European countries, and pushing the power system to its limits.

Among the 4 traditional climate change scenarios, RCP 8.5 is the most aggressive scenario, leading to the highest level of climate change. FEBEG considers this scenario could not be sufficiently representative for the longer run and would recommend to use RCP 4.5 for instance if available.