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Febeliec answer to the Elia consultation on the methodology and input data for the adequacy and flexibility study 2023

Febeliec would like to thank Elia for this 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" (LCT) 2024-25. Febeliec wants to point out that, despite the tile of the consultation, no proposals are presented concerning potential sensitivities. Moreover, it is unclear how the LCT, where only one single scenario will be selected by the Minister and where input will have to be delivered earlier than the deadline of 30/06/2023 for the Adequacy and Flexibility study 2023, will be aligned with the latter study which encompasses a broader analysis with hopefully different scenarios and different combinations of sensitivities to ensure that all relevant information is presented (e.g. impact of political and societal options on the system over the next decade). In general, Febeliec wants to insist that next to the central scenario, it is also very important to investigate a range of sensitivities and other scenarios, in order to guarantee to have a robust understanding of the adequacy implications and interactions of many of the data and parameters in the proposed spreadsheet. It is adamant to grasp to what extent some of these parameters could have a major impact on the outcome of the study. Febeliec nevertheless is very surprised to see that, contrary to previous years, no menu of possible sensitivities is included in the consultation. Febeliec insists that any sensitivities are in line with the applicable legislation, regulatory documents, decisions and communications, in particular the ERAA methodology. This implies that sensitivities can only be added on a national level in a NRAA and not cover elements in other countries (which have to be covered by those countries in their NRAAs).

Febeliec will provide comments on the **methodology**, including some of the annexes, as well as the data in the excel file provided by Elia. Febeliec however wants to insist that a consultation period of only one month for the very large quantity of data and input is quite challenging and that as a result its input cannot be exhaustive. As a result, the omission of comments on certain points should in no case be interpreted as an implicit approval of Febeliec. Febeliec also wants to refer to its comments on the previous consultations for the Elia Adequacy and Flexibility studies as well as the related consultations for the determination of parameters and scenarios for the CRM.

As in previous years, Febeliec has some questions about the **follow-up** from Elia on this consultation. As Elia remarks that this is a voluntary initiative by Elia in order to elaborate a robust study and to collect the input from market parties (which Febeliec is not convinced of, as it is of the impression that at least the consultation on the input data is not voluntary), Febeliec wonders what, if any, will be the framework in which Elia will take into account the answers received on this consultation. Furthermore, Febeliec insists that, as this study will also be used for the determination of the volumes of the LCT, at least that part is not voluntary but covered by an obligation to consult.

On the **general context**, Febeliec appreciates that Elia will try to take the *"latest policies and projections into account, including further developments and/or updates that might still occur in 2022 or beginning of 2023"*, by "*performing possible updates on several assumptions beginning of 2023"*, Febeliec would like to know how will be determined which updates and developments will (or not) be taken into account and which cut-off point will be applied.

Febeliec also wants to clearly state that it has provided ample comments over the years (whether those are considered fundamental or not might be perceived different by Elia than by Febeliec), but remains a.o. with many questions regarding the way demand side response will be quantified for this study (related to the E-Cube study for which no new methodology has been proposed and for which Elia agreed that the currently applied methodology is not robust nor qualitative enough to discern a realistic overall demand side response reaction and potential).

On the **target years**, Febeliec appreciates that a wider range of years will be modelled and quantified, in order to provide more detailed insights on the expected impact and interaction of the various parameters over time. Febeliec is a.o. very interested to see which will be the impact in the Elia modelling and results of the current on-going energy crisis related to the war in Ukraine (e.g. impact on energy prices, demand side response and demand destruction, …).

On the **thermal fleet**, Febeliec takes note of the proposal by Elia, but wonders to what extent future (as of yet not linked to specific projects) generation assets (e.g. cogeneration assets) are taken into account (as also future as of yet not linked to specific projects industrial demand increases are taken into account) and to what extent the unavailability of nuclear units in parts of 2025-2026 can be mitigated with some short term solutions (Cf. similar to those applied in winter 2018-2019). Febeliec also wonders whether no sensitivity should be added with additional nuclear availability (in Belgium and/or abroad) and/or retention of coal/lignite plants in light of the current discussions.

On the **renewable energy sources**, Febeliec has at this point no specific remarks on the proposed PV and wind capacity (onshore/offshore)except that it is a bit surprised to see that despite a faster increase in onshore wind additions in Flanders for 2022 and 2023, the same target of 2500MW for 2030 is maintained, thus implying a slowdown after 2023 in additional capacity. With regard to the CHP non-CIPU, biomass and waste categories, Febeliec notices that Elia has opted to apply a very conservative approach, with no additional projects beyond those already known by Elia and this despite a ten year time horizon as well as a period with significantly higher electricity prices supporting business cases. Febeliec also still regrets that it is not completely clear which power plants are included here, in particular diesel generators, emergency generators (all considered market response?) and process generators.

On **electricity demand**, Febeliec is disappointed to see that Elia applies the macro-economic forecast of the Federal Plan Bureau of June 2022 as one of the main bases of its analysis, as this data and analysis clearly predates the summer period with absolute price records on the European gas markets and related extreme price levels on the electricity market. These very high prices have lead to significant demand side response and even demand side destruction, as can be observed in Elia's own offtake and consumption data. Febeliec insists that at least for this component an additional update is conducted of the data in order to include these negative effects on demand and ensure that no overestimates of potential adequacy concerns are identified because of erroneous inputs. On the comparison of Elia's estimates with different other studies, it is extremely important to identify that all studies have as a base assumption that all current industrial production (as well as other economic activities) will be maintained in Belgium, which is in light of the extreme impact of the current energy crisis on price levels, especially in comparison with most of the rest of the world where such price increases are inexistent or much less pronounced, is not guaranteed. The current high prices could lead to a permanent negative impact on economic activity in Belgium and Europe and would then also have a negative impact on overall energy and electricity demand. By not including updates on the economic impact of the recent high prices in its analysis, Elia might overestimate the needs concerning adequacy in Belgium and at least a sensitivity taking into account the negative impact hereof, which Febeliec still hopes to avoid if sufficient measures are taken to ensure the survival of the economic tissue in Belgium, should be considered. Febeliec further also wants to refer to its previous comments on Elia's continuous estimates of increases in electricity demand in Belgium which never truly materialized (and for which Febeliec has already several times suggested an exercise in validation of Elia's ability to correctly forecast future electricity demand based on its assessment sin previous studies), especially since also this year, taking into account the impact of the high prices, real electricity consumption will be lower than Elia's forecasts and will also lead to a lower starting point for any future increases in a post-crisis landscape (whenever this might occur as the impact of the crisis seems to extend beyond the short term). Febeliec remains very surprised to see that Elia estimates that total electricity demand over the next decade spurts to never seen absolute levels. Febeliec furthermore appreciates that Elia (finally) has started providing bottom-up analysis on a.o. electrification of transport and heating (where Febeliec has to indicate that it is within the short timeframe foreseen for this consultation very difficult to validate or not the proposed data and methodology). For the electrification of industry, Febeliec wants to refer to its previous comment on the base assumption underlying Elia's demand forecast, which might due to the crisis no longer be guaranteed.

On **storage**, Febeliec appreciates that (finally) Elia is providing a bottom-up quantified approach, where Febeliec has to indicate that it is within the short timeframe foreseen for this consultation very difficult to validate or not the proposed data and methodology.

On **demand side response**, Febeliec appreciates that Elia is providing a more detailed, bottom-up, quantified approach but wants to refer to its previous remark on the E-Cube study and the issues related to that analysis. Febeliec also insists that Elia includes the recent experience regarding demand side response (and even demand side destruction) in reaction to the (very) high prices in its analysis, as this provides valuable insight in potential reactions to high prices in periods of adequacy concerns and the related scarcity and high prices. Febeliec appreciates that Elia has included a more detailed approach towards demand side response from the residential and tertiary sector, yet regrets that the short timeframe foreseen for this consultation makes it very difficult to validate or not the proposed data and methodology. Febeliec also wants to refer to its previous comment on emergency generators, as it is unclear in which category they are tackled. Febeliec wants to stress that in Belgium literally 100s of MWs of emergency generators are installed, with its own members already having massive volumes of emergency generators (in at least one case even 100s of MWs for certain

grid users), not even taking into account he 100s of MWs installed at a.o. hospitals, where a CREG study indicated an installed capacity of at least 200 MW. Due to the lack of any quantitative (or even qualitative) breakdown or background of the proposed values Febeliec can thus not validate any of them, but can only indicate that it is very concerned that the provided values underestimate reality.

On **Fuel and CO2 Prices**, Febeliec appreciate that the data of the latest WEO 2022 are sued and asks for a sensitivity analysis (in both directions) to be able to evaluate the impact of a strong increase or decrease of these prices on the analysis.

On **investment costs**, due to lack of time allowed by the consultation period, Febeliec cannot at this point provide an in-depth review of all assumptions made by Elia, in particular also related to the hurdle rates (see also below).

On the **assumptions on short-term flexibility**, Febeliec refers to the many comments it has made in the past on this topic and wishes to highlight the fact that BRPs (and not market players) are responsible for maintaining balance in their portfolios, with Elia only responsible for the residual imbalances. As Elia is pushing towards the abolishment of the day-ahead balancing obligation for BRPs, for which Elia states that this should enhance flexibility management at all times from day-ahead to the end of the intraday market, this should then according to Febeliec lead to better market functioning and in the end less reservation of balancing capacity.

On **cross-border capacity modelling**, Febeliec agrees that 70% minRAM is applied, in line with the legal provisions (as all action plans will have to be concluded by 2026).

On **other EU counties**, Febeliec appreciates the transparency that is in this study given on the assumptions for a range of counties. Febeliec nevertheless continues to wonder the selection criteria for Elia to include some updates and assumptions as well as wonders which will be the cut-off point to include or not further updates (as the current winter 2022-2023 could be quite challenging and lead to many further updates and political decisions).

On the **climate years** proposal by Elia, Febeliec still does not understand why Elia has opted to stop the previously applied approach with historic climate years (albeit adapted to reflect the ERAA methodology and thus limited to the 30 most recent years), to replace it with a still quite novel and untested black box approach, with a non-negligible impact on the results (which could be summarized as more scarcity periods but with shorter durations).

On **(forced) outage rates**, Febeliec remains surprised of the very high values for some categories (e.g. CCGT, GT, Classical). Especially with the closure of assets over time, most of them presumably the oldest assets in their respective categories, Febeliec continues to find it strange that by removing those older assets, which are presumably also more prone to outages due to aging of the asset, the forced outage rate remains high (and in some cases higher than those applied in the past). Febeliec furthermore is concerned by the discrepancies which exist between Elia's internal databases and other databases such as even Elia's own Transparency Platform. Febeliec is concerned by the very small sample that was taken, as much larger samples should be available on the European level, as now some outlier years in many categories lead to surprising results and it is unclear to what extent this is merely the result of very small samples. On the impact of planned outages, Febeliec would like to get a more thorough analysis of the way Elia will calculate this for years beyond the timeframe of REMIT, as the methodology presented by ENTSO-E remains a blackbox, with however potentially significant impact for Belgium. Nevertheless, Febeliec insists that most planned outages should not have a significant impact on adequacy as they are mostly planned and conducted outside of the winter period.

Febeliec wants to reiterate its position on the **methodological approach of increasing the margin** by blocks of 100MW in the iterative process for the determination of the potential required volume. For Febeliec, a finer granularity than 100MW should be used, as even the lack of 1MW under the current approach would immediately lead to a need of 100MW additionally. Applying a finer granularity would avoid sourcing unneeded volumes. Alternatively, an approach could be implemented where very marginal transgressions of the LOLE criterion do not automatically lead to an increased contracting of strategic reserve volumes, through the application of a deadband, taking into account the multiple layers of sensitivity already applied by Elia in combination with low probability, high impact scenarios, which already skew all the results towards a very conservative approach. For Febeliec, it should in any case be avoided to increase the cost for the grid users unnecessarily by following a much too conservative approach.

On **unit commitment and economic dispatch**, Febeliec does not validate the approach of modelling demand side response as "expensive generation units", as it wants to refer to its comments on the (lack of an update of the) E-Cube study, where the current high (gas) prices lead to ample issues with estimations for demand side response in the current

merit orders of the exchanges. Febeliec is worried that the combination of both approaches could lead to a severe underestimate of demand side response, as Elia's own load and offtake data show more than significant reductions in the last months. If such demand side response (or even demand destruction) in light of high prices is not correctly captured, any potential future risk for adequacy will be overestimated and lead to additional yet unnecessary costly measures. Febeliec also wonders why in the assumptions for the assessment of short-term flexibility, demand side response is modelled as unlimited, 1h, 2, 4h and 5h, and not 8h as is the case in other analyses of Elia.

On **hourly electricity consumption**, Febeliec wonders (as this input is to its knowledge not provided) how Elia will model the electrification of industry and its impact on hourly electricity consumption as it is clear that future consumption patterns will in many cases diverge from the current practice, as already can be observed in some investments (e.g. building overcapacity to be able to capture price spreads). Febeliec also wonders how the impact of electrolysers will be modelled, as this information is also not provided yet it is very unlikely that electrolysers will be running baseload or at moments of high demand/adequacy concerns, with correlated (very) high prices.

On the **Economic Viability Assessment (EVA)**, Febeliec considers the approach of Elia with high hurdle rates leading to very high ROI/ROE, especially for units which are covered by some sort of subsidy schemes and thus much less exposed to market risks. Febeliec wants to reiterate its comments on the risk averseness that Elia is always citing and applying for investors, where Elia seems to consider BRPs, suppliers, consumers etc, all to be extreme risk takers and not risk averse at all. Febeliec opposes such view, as it is clear that also these actors will make economically rational decisions, including hedging of costs via forward markets (e.g. for suppliers and consumers, to avoid to be exposed to greatly varying costs with locked-in revenues from long term sales contracts) or avoidance of high penalties (e.g. BRPs to avoid being exposed to extreme imbalance tariffs and costs). These aspects will clearly also have an impact on the decisions of market actors and are (or should be) taken into account by investors in new capacity or maintaining existing capacity and will thus impact the EVA. Febeliec strongly insists that revenues from a.o. forward markets and portfolio effects will have an impact on the overall viability of assets. While assets individually might be confronted with certain negative effects, the combination of different assets can create on the one hand higher pooling effects but also and more importantly synergetic effects (e.g. in case of combinations of different assets classes that complement each other). Febeliec regrets that this is still not taken into account. Febeliec appreciates that some work has been done to look into profitability of assets over their lifetime, yet is not sure that the proposed approach covers this aspect completely, as it is unclear how Elia wants to tackle "future energy mixes" and their impact, as of course every asset individually does not have to be profitable every single year, as long as the overall profitability over the lifetime is sufficient to recover the costs and a profit margin. With respect to the net revenues from the provision of balancing services, Febeliec considers Elia's approach with a discarding/derating of most of the revenues from ancillary services too conservative, as in case scarcity situations would occur, it can be expected that these revenues for all asset types would increase, especially in combination with switching towards pay-as-cleared in these markets (after connection to the European balancing platforms).

On **price limits** in the electricity markets, Febeliec insists that these should not be modelled as too limiting as recent practices have shown that these limits can/could increase quite rapidly (and should, if all applicable rules were correctly have been applied already have reached 5.000€/MWh in the day ahead markets). Febeliec insists that Elia at least take into account the decision of ACER on this matter, which is expected in the near future and well in time for the analysis, in order to ensure that this aspect is correctly modelled, as it is clear that higher price caps in the electricity markets can only unlock further demand side response and other flexibility.

On the **LCT scenario,** Febeliec wants to refer to its many comments during the WG Adequacy and the related consultations on a.o. the design note, and wants to highlight here specifically its questions regarding the required approval of a "*targeted*" (non-system-wide) and "low carbon" (not technology-neutral) subsidy mechanism and its many questions regarding eligibility, related to the definition of a.o. "new" and "low carbon". Febeliec does also not completely understand the "*fundamental difference between the LCT and the market-wide CRM*" and its impact on the required additional capacity and in any case wonders, as mentioned above, about the approval of this new (yet according to Elia fundamentally different but nevertheless apparently seamlessly integratable with the CRM over the lifetime of both products concerning overlap for multi-year contracts, secondary markets, …) mechanism. Febeliec also wonders whether, if the risk is mostly linked to the risk of existing capacities leaving the market, a strategic reserve or other specific measure is not better suited and more in line with legislation. On technology-neutrality, Febeliec is strongly surprised about the exclusion of most technologies and wonders whether this is in line with the applicable legislation. Furthermore, Febeliec is surprised to see that cross-border participation is excluded and wonders what all these exclusions will have as impact on the overall cost of the LCT mechanism. Moreover, Febeliec was also surprised to see that the preselected capacity types now also included DSR, which was not the case for the CRM, but which has

potentially a very important impact on CONE and net-CONE and thus on the overall outcome. Febeliec wonders how this different treatment is justified, as the product will afterwards be integrated and compatible with the CRM, according to Elia.

On the study on the **hurdle rates** while Febeliec does not want to undermine the potential merits of the theoretical analysis as such, Febeliec remains with many questions towards the applicability of this model in the real world. Febeliec would thus request to have a more in-depth presentation of this analysis and its underlying theoretical basis, by preference presented by those having performed the analysis. In any case, Febeliec wants to refer to its comments on the high hurdle rates, which in combination with the WACC lead to very high ROE due to leverage, but also forward market revenues and hedging, risk averseness of consumers, suppliers and BRPs, portfolio effects, lifetime economic viability, etc. Furthermore, Febeliec continues to wonder what the inherent difference is between investments in the electricity sector and other markets, as apparently this issue only seems to play in the electricity sector in Belgium. Indeed, all investments and investors in other segments and markets encounter the same or similar issues, yet however without resulting in such claimed apparent issues. While electricity as a product might by its nature introduce some additional complexity in market functioning (due to the lack of storage capacity), Febeliec does not see how this would have an inherent impact on investment risk, model risk, policy risk, WACC, … The only potential difference Febeliec can observe in comparison with most (but not all) other segments and markets is the non-normal distribution of revenues due to extreme price spikes, which however over the lifetime of assets should be included with a probability. Febeliec is also very surprised by the reasoning about the system going from inadequate to adequate and the issue of "cannibalization", as it is clear that the season has to go towards adequate, as that is the purpose of the exercise by Elia in its study but also the purpose of the CRM (and LCT). Febeliec wonders whether this implies that the CRM itself erodes the business cases of investors and is thus a self-fulfilling prophecy which cannot solve adequacy unless all assets are covered by it (leading to many questions about overall costs and functioning of a liberalised market). Also less scarcity seems to create, according to the analysis, to issues for return on investment, yet all endeavours from Elia seem to be towards reducing scarcity and thus yet again eroding business cases. Because of the very short timeframe of this consultation, Febeliec has not had the opportunity to deep-dive into all the assumptions and calculations presented. Nevertheless, Febeliec is also very surprised to see that the analysis considers simulated rents under *lower* market price caps (e.g. 300, 1.000, 2.000 €/MWh) compared to 3.000 €/MWh, while the price cap is conceived to only increase, already having reached 4.000 €/MWh (and should have been 5.000 €/MWh if all rules would have been correctly applied) and no mechanism exists currently which would bring this price cap down (and in any case never to price levels that have been observed quite frequently in the recent past), and thus wonders to what extent any theoretical fundaments and understanding of the functioning of the market are actually reflected in the model. Febeliec wants to refer to its abovementioned comment on the potential merits of the theoretical analysis versus real world applicability and relevance.

As a **conclusion**, Febeliec as always remains available to discuss its comments to this consultation on the methodology and the input data. Febeliec is looking forward to the mathematical results of the adequacy and flexibility study from Elia, as input for the public debate on technological and policy choices, as well as in this case the preliminary projections which will be used to determine whether a Low Carbon Tender would be required for winter 2024-2025 in order to mitigate a possible adequacy concern.