Febeliec answer to the Elia consultation on the input data for the adequacy and flexibility study 2019

Febeliec would like to thank Elia for this consultation on the input data for the adequacy and flexibility study to be conducted by end of June 2019. Febeliec regrets that only three weeks are given for this consultation, which severely limits the possibility of stakeholders to provide (quantified) input data.

Febeliec strongly regrets that Elia only conducts a consultation on the input data, and does not conduct a consultation on the methodology it will apply for this double study, which will be reiterated every second year. Febeliec strongly regrets that Elia has chosen to not involve the stakeholders in the development of this methodology, other than the stakeholders imposed by the law (FPS Economy and Federal Planning Bureau, plus coordination with CREG). Even though no such legal obligation exists, Elia could (and according to Febeliec, should) have opted for a much larger involvement from all stakeholders, in order to obtain a much stronger buy-in from stakeholders in the methodology, the study and its results had they been involved from the beginning and the design phase, especially as the flexibility part of the study is a totally new domain that Elia will explore.

Febeliec will provide its input on the proposed excel-file by Elia, but this does not mean that Febeliec agrees with the proposed methodology and should in no case be interpreted as such. Febeliec has made ample comments and has provided ample questions during the presentation of the methodology by Elia during the Elia presentation on January 22nd 2019, many of which have not been answered in detail and/or still need to be covered and/or investigated. Febeliec wants to refer to its comments made during that presentation and hope that Elia will at least take them into account in order to improve the study.

Febeliec has following remarks and comments to the consultation at hand (per tab sheet):

- 0. Scenario framework:
    - Febeliec does not see how the proposed framework will provide a clear answer to the flexibility part of the study. Whereas adequacy involves supply covering demand at any price (de facto, market cap of 3000€/MWh in DAH market), flexibility (demand response, but also emergency generators, storage, …) will participate in the market at a wide range of prices. Moreover, with the study looking ten years ahead, Febeliec wonders how Elia will cover future evolutions in flexibility. Whereas generation might be quite predictable with respect to future evolution paths (technological and from a cost perspective) (potentially for some technologies, as recent history has shown that predictions have been more wrong than right), the recent past clearly shows that any predictions about flexibility have all been very much off, as flexibility has developed substantially each time the markets showed a clear interest in them (with clear price signals); new actors, new business models and new products have (swiftly) been developed to answer a new need. As such, Febeliec wonders how Elia wants to capture these observed historic market dynamics in its forward-looking models, in order to avoid underestimating flexibility in the market and thus overestimating artificially the need for a "structural block". Moreover, it is unclear how Elia is planning to incorporate for example the gigantic potential of a combination of smart meters and variable price contracts for MSE and residential customers which should invigorate to a large extent demand response in the market.
    - In general, Febeliec regrets that the sources of data in the spreadsheets are lacking, making it almost impossible to validate the proposed data by Elia. It is impossible to discern whether the values are based on external sources, internal estimates, or a mix of both, making it also nearly impossible to validate or falsify the data.
- 1. Renewables:
    - As the source of the provided data is lacking, it is impossible for Febeliec to make any valuable contributions. Are the proposed data based on the NECP, an Elia analysis, based on announced projects or linear extrapolation? For offshore wind, Febeliec notices that Elia adds 2GW as of 2028, without any project realization curve (as opposed to what has been observed in the past). Also for PV, Febeliec notices an increase by a 100% by 2030 but cannot discern how this result was obtained. The same comment essentially applies to all categories.
    - What is lacking here is also the involved costs (CAPEX/OPEX) that are associated with these technologies. Especially when also looking into flexibility, such information should be very relevant.

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- 2. Nuclear:
  - Febeliec takes note of the proposed nuclear phase-out calendar, following the law.
  - Febeliec would however propose to include some sensitivity scenarios on this phase-out in order to obtain insight in the impact of this political choice, including cost impacts as this information will be very valuable. It concerns here (avoided) investments costs but also operation costs and the impact on flexibility in the system and thus the need for flexible or non-flexible capacity.
- 3. Interconnections
  - For Febeliec it is unclear how for example Alegro will be taken into account in the model and what will be the impact. Moreover, as the study looks 10 years ahead, Febeliec wonders how potential projects proposed in the Elia TYNDP (Nautilus, Alegro II) should be taken into account (making even abstraction of all other interconnectors with for example the UK and the Nordics will be realised from CWE in the next decade). The same applies to all the enormous grid improvement and extension projects Elia has planned on the backbone grid as well as the underlying grids in the next decade.
  - With respect to the flow-base domain, it is very unclear how Elia will take into account the proposed modifications as well as certain clarifications and specifications that have been added in the Clean Energy Package, more precisely in the Energy Directive and Regulation, with respect to the cross-border market coupling and loopflows.
- 4.1. CHP:
  - Febeliec takes note that Elia will take into account a 100% flat CHP profile for the next decade, without the phase-out nor construction of any CHPs. As this scenario seems quite unlikely, Febeliec would urge Elia to include at least some sensitivity scenarios where additional CHPs are taken into account. Elia takes into account an increase in total demand (to be discussed below), a.o. because of increased demand from industrial consumers (e.g. new large investments in Belgium), but does not take into account any investments in CHPs for any of such projects nor for any residential neighbourhood level CHP systems.
- 4.2. Market response
  - Febeliec refers to the numerous comments it made to the methodology developed by E-Cube in the recent past and its reservations it has towards this methodology
  - Moreover, Febeliec strongly wants to contest that base value that Elia is using for the determination of demand response in the future. It is unclear on which source Elia bases its initial starting point of "Belgian Market Response volume" for 2018, But according to Febeliec +/-1250MW is a gross underestimate, taking into account all the demand response that exists in the balancing market as well as the announcements by for example two of the largest BRPs in the Belgian system for winter 2018-2019 of substantial volumes (+500MW and +200MW) of contracted market response, apart from what all other actors such as aggregators still had contracted in their portfolios. Febeliec would greatly appreciate that Elia provides a detailed breakdown of its data in order to be able to analyse it. In any case and as already indicated, Febeliec has the feeling that Elia underestimates the real market response that was available in 2018-2019 and as such should use this higher value as the starting point for its analysis. As prices (as well as (media) attention) drew all market actors to look at their energy portfolios, market dynamics have lead to the emergence of previously untapped market response in the market. This should clearly be taken into account, in order to avoid to underestimate the inherent flexibility in the system.
  - Moreover, Febeliec refers to its comment on the introduction of smart meters and variable price contracts and the fact that this will unlock a vast volume of currently untapped (untappable) flexibility in the residential and SME segments. Febeliec wonders whether, how and from when onwards this is taken into account in the Elia proposed values.
  - In general, it is very difficult to provide any useful input on the data presented by Elia, as any breakdown is missing (e.g. on total demand shifting volumes).
- 4.2.bis: Diesel generators
  - Diesel generators (and similar technologies) are completely missing in the file from Elia. CREG studies have shown that for example only the (aggregated) Belgian hospitals already have up to 400MW of diesel generators and this is not taking into account all the other emergency generators (from industrial sites over public services, office buildings to even residential consumers) that are operational in Belgium. Moreover, the current winter shows that even large BRPs install more than substantial volumes of diesel generators to cover their positions (diesel generators which cannot be

formally accounted for as “emergency” generators as they are not connected to specific consumption processes). Febeliec asks Elia to introduce this category of diesel generators (and similar technologies) to the file.
    - In case Elia would account for them in the category “market response”, Febeliec would want to see a clear breakdown of the different constituting elements (in order to be able to assess the expected evolution over time by Elia) and also wonders whether the category of non-emergency diesel generators would be accounted for as they do not constitute negative offtake. Moreover, if Elia would count diesel generators (and similar technologies) as market response, the volume of market response is an even large underestimate than described above (cfr previous remarks)
- 4.3. Storage
    - The same issues arise for storage as for previous categories as no source is available for the information nor a breakdown (e.g. In number of batteries, technologies, vehicles, …) nor a methodology describing the increase of storage, making it impossible to provide any meaningful comments to the proposed data
- 4.4. Additional capacity to meet adequacy and flexibility requirements
    - Febeliec regrets to see that Elia makes technological choices in this data file and thus also in the methodology for the adequacy and flexibility study and this over the course of an entire decade as Elia will only assess (current) CCGT and OCGT technologies. This thus de facto excludes not only all other (potential or existing) technologies but also locks in current efficiency rates for these types of plants and thus excludes efficiency gains and learning curve effects. Mentioning that “other forms of capacity are already taken into account in the scenario definition and sensitivities will be performed to those” does not alleviate the concerns of Febeliec on technology neutrality, as this still clearly indicates a technological preference of Elia towards CCGTs and/or OCGTs.
- 5. Total electricity consumption
    - Febeliec wants in this framework refer to the comments it always makes in the framework of the input data for the yearly study for the determination of the required volumes for strategic reserve and wants to point to the historic growth rates which show far from the very clear year-on-year increase of 0,49 to 0,74% that Elia foresees for the future. The historical values show that even for economically sound years as 2016 total electricity demand can diminish, whereas Elia only (macro-economically?) discerns never-ending year-on-year increases for the whole of the next decade. Febeliec reiterates previous demands to validate historical IHS forecasts with actually observed values for the recent years, in order to provide confidence in the applied methodology or, in case the IHS track record would not be so sound in predicting future electricity consumption, develop an alternative and more correct forecast tool. In any case, Febeliec observes that even after a few years of economically sound years (2011-2017), total electricity demand has still not returned to the level of 2011 (let alone pre-2008 levels!), whereas Elia now decidedly takes into account an increase of almost 7 TWh in demand in the next decade!
    - In any case, Febeliec urges Elia strongly to include several sensitivity analyses on this point, as overestimates in total electricity demand will automatically lead to overestimated needs for (flexible) capacity and thus unnecessary investments in Belgium, both for adequacy and maybe even for flexibility purposes.
- 6.1. Fuel and CO2 prices
    - Febeliec hopes Elia will conduct some sensitivity analyses on these parameters, as they will have an enormous impact on the outcome, but regrets that Elia has not included any data for such sensitivities (e.g. based on other IEA scenarios or scenarios from other sources)
- 6.2. Economic assumptions
    - Febeliec cannot validate most of the proposed assumptions, but refers to a previous comment on the fact that Elia locks in current efficiency factors and cost factors with this data and does not take into account efficiency gains or learning curve effects or even economies of scale/scope.
    - With respect to demand shedding and shifting, Febeliec wonders why shedding is linked to industry and shifting to residential. Both categories can be linked to both types of grid users. Moreover, Febeliec does not understand why industry is considered to have no CAPEX and residential does and how the other parameters are introduced. Also on the economic lifetime, Febeliec does not understand why residential consumers are valued at 8 years, whereas industrial consumers should be around indefinitely.

- 6.3. Forced outage rates
    - Febeliec regrets that no sources have been provided, making it difficult to assess the information. For example for DC links, Febeliec wonders on which historical data this is based and which technologies have been taken into account; Febeliec has always understood that the applied technology for at least NEMO (and Alegro?) is new and thus wonders how this historical value has been determined.
- 6.4. Flexibility characteristics
    - Febeliec regrets that only three weeks were given for this consultation, allowing hardly any time to validate any of the information.
    - Febeliec regrets that diesel generators (and similar technologies)à have not been introduced. Moreover, Febeliec regrets that CHP is only to be considered existing/old CHP with flexibility similar to that of old CCGTs, whereas no new CHPs (small and large scale) are considered nor any improvement in flexibility of such units.
    - For demand response, the included data has almost no added value as compared to the names of the categories chosen by Elia and as such it is very difficult to add additional validation. Febeliec nevertheless wonders why for CAT-4H there is a value in column M (fast flexibility limit), whereas all other categories have no values there. Does this mean that Elia considers this category inherently different from the other ones and if so, on what grounds? With the non-existent additional information from Elia, it is impossible to provide any input on this point.
    - Febeliec also wonders what the cryptic comment in cell S30 means, especially “share of 86% evolves towards 74% from 2020 to 2030”. Febeliec cannot validate this as it is unclear to what this refers.
- 7. Sources for other countries
    - Febeliec cannot provide any input, but wants to mention that the title on the sheet is wrong and should read “7.” Instead of “6.”.

Febeliec as always remains available to discuss its comments to this consultation and the input data, but also still remains available to discuss the methodology. Febeliec is looking forward to the mathematical results of the adequacy and flexibility studies from Elia, as is in this the legal role of Elia to provide input for the public debate on technological and policy choices.

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