STRATEGIC RESERVES FOR WINTER 2017-18 – CONSULTATION REPORT

Public Consultation on "Input data for Belgium for the next 3 winters" held between 19 September 2016 – 3 October 2016

14/11/2016

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INTRODUCTION

The consultation aimed to receive any comments of market participants on the input data to be used for the strategic reserve volume evaluation for winter 2017-2018. The consultation period was set from Monday September 19th to Monday October 3rd, 2016, 6:00pm.

Elia received 7 answers to the public consultation, of which 2 should be considered as confidential :

- FEBEG
- FEBELIEC
- BDRA
- Dr. Paul Verheecke
- Dominique Woitrin

The feedback and the answers by Elia System Operator ("Elia") are grouped in the following categories in this document:

- General
- Consultation Period
- Data
- Sensitivities
- Demand Reponse
- Flow Based Domain
- Final input data
- Out of Scope

All relevant information to this consultation can be found on the following Elia webpage as from Monday November 14th, 2016.

The results of this consultation will also be presented during the Task Force "implementation Strategic Reserve" of December 1st, 2016.

1. General

Generally, most market participants welcome the far-reaching transparency of Elia. The parties are convinced that this will contribute to the confidence of market parties in the methodology and the data used.

Parties are happy that Elia has taken action on the concerns raised in past consultation on the same topic and that Elia considerably improved its methodology based on the experiences of previous assessments and recommendations of the stakeholders.

2. Consultation Period

FEBEG

FEBEG wants to point out that the consultation period was too short to allow a thorough analysis of all the assumptions and input data. The short period made it also difficult to cross-check certain assumptions with own business models and forecasts.

FEBEG recommends to adjust the process to accommodate a longer consultation period in the years to follow.

Febeliec

Despite the short duration of the consultation and the time constraints,...

Elia's answer

Elia understands the concern and the remarks that the consultation period was only 2 weeks. However Elia wants to highlight that the timeframe was short between the moment all necessary data were received and finalised and the moment the assumptions needed to be fixed in order to the start calculations in time. Some of these dates are anchored in the law and cannot be changed. Elia already informed the market in the month of June 2016 that this second consultation would take place in the course of September.

For future consultations, Elia will do its utmost best to foresee more time for the market participants to provide their comments.

3. Data

FEBEG

Elia has put the raw input data used for the calculation to the disposal of the stakeholders. FEBEG considers the data for Belgium very complete and detailed, but regrets that similar data are not available for the neighboring countries.

FEBEG understands that there are issues with regard to confidentiality, but wants to point out that the input data that are used for the other countries are very important as well as Belgium is highly interconnected. Because of the interdependency between France and Belgium, especially the input data for France are relevant. Elia stated that the reference scenarios are being used for France, but FEBEG would welcome more details on these scenarios and more specifically on the sensitivities that Elia has investigated.

Elia's answer

All non-confidential data will be included in the volume report for winter 2017-18. For each country all relevant information and assumptions will be detailed in the report. Several sensitivities were performed for France, details on assumptions and all the results will be published inside the report.

In the final excel table, Elia will provide in a separate sheet the links to other adequacy reports from neighbouring transmission system operator. Below you can already find some links to relevant reports :

RTE :

http://www.rte-france.com/fr/article/bilan-previsionnel

Tennet :

http://www.tennet.eu/fileadmin/user_upload/Company/Publications/Technical_Publications/Dutch/Rapport_Monitoring_Leveringszekerheid__2015-2031_.pdf

National Grid :
https://www.emrdeliverybody.com/Lists/Latest%20News/Attachments/47/Electricity%20Capacity%20Report%202016_Final_080716.pdf

Febeliec

On Tab 2.1 (Demand growth), Febeliec takes note of the (normalised) growth rates proposed by Elia for the period 2017-2020, but cannot give any meaningful comments as the underlying assumptions are not presented (especially as the growth rates oscillate between slight increases and decreases). The same comment applies to the high growth sensitivity (0,54% growth for 2016-2018). Febeliec would like to know how these numbers are composed, top-

down (on macro-economic data) or bottom-up (e.g. on data from consumers), and if a reality check has been conducted on these growth rates as compared to the past performance of growth estimates.

Elia's answer

The most recent forecast (from August 2016) of the IHS CERA consultancy bureau is taken as reference for the volume study. A high sensitivity to this value will also be evaluated taking into account the average yearly growth (2015-2020) of the demand from the EU reference scenario 2016. A decrease in the demand growth can be observed for the base case scenario. This is due to energy efficiency measures but also due to the economic forecasts that were downgraded after the announcement of a possible 'Brexit'. Reality checks have been performed as already requested in the consultation on methodology and data: "*Previous forecast of IHS CERA was giving for the year 2015 a growth of the demand of +0.43%. This value was used in the calculation of strategic reserve volume. The resulting growth of the total normalised growth accounted for +0.58%, slightly higher than the IHS CERA forecast".*

Febeliec

On Tab 2.2, it is very difficult to give any meaningful comments, as no assumptions are underlying (historical) curves are provided.

Elia's answer

Historical cures of demand profile can be found on Elia's website or on the ENTSO-E data portal for every country:

http://www.elia.be/en/grid-data/data-download

https://www.entsoe.eu/data/data-portal/consumption/Pages/default.aspx

Febeliec

With respect to Tab 3 on Balancing reserves, the data does not explicitly take into account the volumes delivered by demand response (and storage). For example for aFRR (R2), Febeliec would like to point towards Elia projects such as R2 wind and R2 non-CIPU, which are not directly taken into account for the timeframe 2018-2020. Also on FCR, Febeliec wonders if (and how much) volumes of R1 Load are taken into account. Also the potential contribution of storage is not taken into account in the data.

Elia's answer

Elia would like to highlight that these products are considered in the modelling:

- 'R2 wind' : the volume that Elia used as operational balancing reserve has been provided by the Belgian production fleet, including wind generation;
- 'R2 non-CIPU' is also modelled in the simulation as the non CIPU units are also modelled in the simulations;
- For R1 it was considered that around 10% of this volume is provided by non CIPU inside Belgium (and therefore including a part of demand);
- It was considered that 65 % of the total R1 volume is sourced abroad.

Dr. Paul Verheecke

La consommation privée, peut-être en opposition par rapport à l'industrie, diminuera dans les années qui viennent. Cela en conséquence de plus en plus généralisé des lampes à faible voltage. Pour l'industrie, il me semble que l'usage généralisé de panneaux solaires devrait être pris en compte.

Elia's answer

The total consumption of Belgium used in this study takes into account all the consumption (even decentralised). PV generation is taken into account separately and also the total generation from PV is modelled (not only the one seen on the grid). Also an assumption on the future evolution is included. The information on how the installed renewable generation will evolve in the future, has been provided by the regional authorities.

In the estimation on total demand growth, a decrease is noticed for the first time, due to the energy efficiency measures (including the usage of low voltage lightings).

Dominique Woitrin

1. *Pourquoi ne pas prendre en compte la "disponibilité en hiver DORW" plutôt que le FOR générale, notamment pour le nucléaire mais comme vous le faites pour la biomasse ou les déchets ? dans une optique de disponibilité en hiver, ce n'est pas le FOR qui devraient être pris en compte mais bien la disponibilité "DOR" dans cette période, en tenant compte aussi des arrêts "programmés" (entretien ou voulu "pour maintenance") et cela sur cette période*

ou au moins les 5 dernières années....La maintenance programmée (?EBL nucléaire) cache souvent des défauts techniques rendant l'unité tout aussi indisponible que des FO...

Elia's answer

The forced outage rates based on historical data are taken into consideration. Different sensitivities will be calculated to take into account extreme values of unavailability:

- To assess the impact of a major nuclear outage on the security of supply, a sensitivity has been analysed where 2 GW of nuclear power plants were considered unavailable for the whole length of the winter;

- Due to the fluctuation of the outage rates in the past and the very high forced outage rate of nuclear units during the course of 2015, a sensitivity has been performed on the assumptions regarding the outage rates for the Belgian nuclear and CCGT units taking the maximum value observed in the past 10 years.

In recent years, less and less maintenance is planned during the course of winter. Together with the producers, Elia aims at scheduling these planned unavailabilities outside of the winter period. For 2017, a maintenance planning has already been established, and is taken into account in the analysis for the winter of 2017-18. For this winter, the maintenance planning of 2018 is not yet known, and no planned unavailabilities of units for which a CIPU contract applies are considered. Similarly, for the analysis of the winters 2018-19 and 2019-20, no planned outages were considered in the course of winter.

CHP, waste and biomass that have a no CIPU contract are modelled with averaged historical production profiles (and this year with an improved modelling taking into account variability due to forced outages). Those units are linked to industrial processes and their availability and production is very linked to them. On the other hand nuclear units are not linked to any of those processes; their availability depends on the technical ability of the unit to generation electricity. This is why nuclear units are modelled as individual units that can reach their maximum output capacity anytime (unless in outage).

2. *Il doit exister aussi quelques possibilités d'augmenter pendant quelques heures (pointe d'hiver) la production biomasse et déchets ?*

Elia's answer

The biomass and waste units that are modelled individually (which is corresponding to approximately half of the total installed capacity of these types) can produce at maximum (depending on its availability – this one being drawn based on forced outage rates). Small units (as seen in the historical profiles) are very linked to processes and the average production profile observed (which includes units in maintenance and in outage) is used

3. *La disponibilité du nucléaire devraient donc être calculée comme pour les autres sources d'énergie (Excel feuille 1.6): période 2006-2015, et donc comprendre les longs arrêts de D3 Ti2 car un défaut "de mode commun" (nucléaire") n'est pas à exclure d'office dans l'avenir (centrales vieillissantes, travaux de prolongation...). C'est déjà mieux de prendre le FOR nucléaire 2015 à 11 % mais pas suffisant*

Elia's answer

The reason why these outages are not taken into account in the forced outage rates, is that the stops of the units were not due to failures, but due to external decisions.

However, Elia calculated a sensitivity scenario where 2GW is considered out of service (replicating for instance a situation where 2 units would be out of the system for non 'technical reasons' or due to needed inspections) and another one with higher forced outage rates as observed during the year 2015.

4. *De plus, je crois que cet exercice a déjà été fait uniquement pour les TGV's ?...*

Elia's answer

For CCGT units the same principles are used as the ones for nuclear power plants. A sensitivity with the highest forced outage rate observed in the past will be assessed.

5. *On ne voit nulle part dans les folios Excel les capacités d'importation "nominales" nouvelles avec Doel Zandvliet en 380 kV et le poste Van Eyck en service...? pas de folio à ce sujet, combien important ! Il y a bien dans la présentation des résultats ENTSO-E (CORESO ?).*

Elia's answer

This domain is constructed based on 'critical branches' (lines or grid elements – hereafter referred as CB),

In the framework of the co-development with Market Parties of a standard process to communicate on and assess the impact of significant changes (SPAIC) within the CWE Flow Based consultation group, 12 typical days for the year were defined by CWE TSOs. The representative domains are issued every 6 months and are based on 1 year of historical data. 12 typical days for the year (4 in winter, 4 in summer and 4 in inter-season) are therefore available. From those 4 typical days for the

winter (3 for the weekdays and 1 for the weekend), 3 were chosen to be used in this year assessment of the strategic reserve volume.

In the framework of the volume determination report for winter 2017-18; some changes were made to these historical flow based domains in order to take into account the new lines in service:

- Line 380.26 between Doel and Zandvliet was added in all the historical days;
- Line 380.12 between Gramme and Van Eyck was added in the Day 1 'Low Wind' as it was not yet in operation on that day. For the other days, the line was already in operation.

6. *Dans la présentation, je ne comprends pas la limitation "set" figée à 4500 MW pour les importations et les PST au plots 6 "fixed max" (rules ?)*

Elia's answer

There is a certain limit of import (not export) due to dynamic security constraints. This limit it estimated with offline studies, which are performed on regular basis.

In order to obtain the same results as would have been in daily operation, the current existing CWE PST coordination procedures have been applied.

7. *Quel est l'impact des Ampacimon sur cette capacité d'import ? -lors d'une vague de froid critique pour l'importation française (moins pour la Belgique ?) mais aussi favorable au refroidissement des lignes ? Surtout avec la mise en service des renforcements prévus par RTE (plus tard ?) à leur frontière nord...(déjà relevé lors de votre étude d'avril 2016)*

Elia's answer

In the 3 flow based domains chosen for the volume determination, the margin given by installations for monitoring the lines ('Dynamic Line Rating: Ampacimons') were integrated, where available.

9. *...à voir dans la proposition argumentée finale ?*

4. Sensitivities

FEBEG

Combination of sensitivities : For the moment, Elia models sensitivities separately. FEBEG would like to suggest to Elia to combine certain sensitivities as it is very likely that certain events, e.g. cold wave, affect several countries at the same time. FEBEG proposes to – in cooperation with the stakeholders – assess combinations of sensitivities, e.g. simultaneous tight situation in the United Kingdom and France.

Sensitivity on gas-fired power plants : Elia will assess the volumes for the strategic reserves for winter 2017-2018, but will also make some forecasts for the next two winters. For the moment, Elia proposes to keep the capacity of gas-fired power plants at the same level in the input data for the next three years. FEBEG suggests to also make a sensitivity analysis with lower capacity of gas-fired power plants assuming that some power plants will close.

Elia's answer

Concerning the cold waves in several countries, they are already taken into account in the climatic profiles (assessing 40 winters allows to cover a large amount of past situations).

In the volume report for 2017-18, the impact of some combinations of different tight scenarios will be shown (high French nuclear maintenance combined with the absence of one nuclear unit in Belgium for example).

Also a sensitivity will be run on the availability of the gas fired power plants considering around 600 MW of additional closures in Belgium for the winters 2018-19 and 2019-20. Elia will also provide for the first time the margin on the system for all the scenarios, allowing deriving an indication on how would additional closures in Belgium impact the margin/need for strategic reserve.

BDRA

1. *The availability of the nuclear power plants. As mentioned by Elia, recent history should push us towards cautiousness as we need to have sufficient back-up capacity for cases when the nuclear park is partially unavailable. Therefore we strongly suggest to make sure this sensitivity analysis gets the right exposure in the final recommendation*

Elia's answer

Elia calculated a sensitivity scenario where 2GW of nuclear power is out of service. The results are clearly presented in the report. Another sensitivity will cover higher forced outage rates on those units such as observed in 2015.

5. Demand reponse

FEBEG

Upon request of Elia, Pövry has updated its 'overview of net off-take reduction potentials in Belgium'. The objective is to use these data as input for the calculations to determine the volumes of strategic reserves for the winter 2017-2018.
Due to time constraints and a poor methodology, the results were heavily questioned by all stakeholders. Therefore, Elia decided to use the data of the previous assessment by Pövry.
FEBEG supports an evaluation and improvement of the methodology to estimate the net off-take potential in Belgium. FEBEG also believes that there could actually be less flexibility in the market as, for the moment, prices are not favorable for demand response flexibility and as the risk of a scarcity situation is reduced for the upcoming winter 2017-2018.

Febeliec

On Tab 2.3, Febeliec would like to reiterate its very strong concerns with the 2016 survey, also voiced during the last iSR meeting, as there has been no adaptation of the survey based on the comments and remarks given during and after the 2015 Survey and as such the value of the 2016 Survey is questionable on the same points as discussed last year. Moreover, towards the results of the 2016 Survey, Febeliec would like to enumerate a number of specific concerns, which refer a.o. to the fact that apparently demand response volumes have decreased significantly although this is the result of some (very large) demand facilities not replying this year (for a multitude of reasons, not in the least the short timeframe during the summer holiday months), without this giving any indication on their true capability nor willingness to react to price signals, as well as the unilateral decision of a large BRP to significantly lower the volume of price-based market response from TSO-connected facilities (without strong justification). Moreover, Febeliec remains in doubt over the 150MW voluntary reduction from DSO GUs, as examples in e.g. France have shown much larger reactions from GUs in times of system stress, and remains convinced of a significant potential contribution of this category, even if difficult to measure with the current survey and methodology. Febeliec, as well as its member sectoral federations, also regret the neglect of the survey handlers to include them in the effort, as they have as a result not been able to incite their members towards a more active participation to the survey. Febeliec is relieved to see that at least the data from the Survey of 2015 will be used for the analysis, but remains convinced that these do not reflect the true volume of market response in the Belgian system.

Dominique Woitrin

Je ne comprends pas que Pöyry/Elia divise par 2 la flexibilité contractée auprès des BRP's folio 2.3 ? pas de volonté ? Le marché ne répond pas à vos AO ?

BDRA

2. The actual maximum demand that will need to be served in case of a high prices. As was discussed during the meeting, the methodology of the Poyry study has been contested by different parties and results therefore need to be considered with a wide sensitivity/error margin further confirmed by the difference between the updated and original Pöyry study. Further the forecast of Demand growth shows that the Demand that will be present (when prices are high) is highly uncertain. Indeed as Elia correctly suggests a sensitivity regarding this important figure is critical and a political choice needs to be made how much Demand will be secured for the winters to come.

Elia's answer

As discussed during the Task Force 'implementation Strategic Reserves' meeting of September 19th 2016, Elia is aware of the concerns of the results of the Pöyry study of 2016. Therefore it has been agreed with the stakeholders during this meeting to keep the results of the Pöyry study of 2015 in the base case scenario and to calculate a sensitivity with the results of the Pöyry study of 2016.

However on the longer run a different methodology to assess market response will be set up. A work plan and approach will be presented soon to the stakeholders.

6. Flow Based domain

Febeliec

On Tab 4 on the Flow-based domain, Febeliec reiterates its question towards Elia of the 21st of September on an explanation towards the "weekend" Flow-based domain and the fact that this domain is in several corners smaller than the "low wind" (in Germany) domain, as this can have a non-negligible impact on cross-border flows. Febeliec also understands that Elia currently for the flow-based domains has to work with the current assumptions on actions towards the base case, but wants to remark that it hopes that efforts to adapt the current Flow-Based methodology to better cope with (mainly German) loop flows as e.g. listed by the CREG in its study on the price peaks in 2015 will have a positive effect before 2020 and should as a result have a positive impact on the Belgian adequacy situation.

Elia's answer

The selection of the flow based domain was done based on the latest defined SPAIC days, which were also discussed and agreed with market parties during the last CCG (CWE Consultative Group) meetings.

The choice was made to retrieve 4 typical days for each season, 3 week days, and 1 weekend day. The algorithm to define which will be a typical day is based on the output of the FB capacity calculation phase, and not on the climatic variables. Of course, we can deduce ex-post for the selected days the renewable infeed or the load for the different CWE hubs.

Out of the 4 days for the winter season, we have selected 3 days (2 weekday and 1 for the weekend). In order to have the biggest distinction between the weekday domains, the choice was made to look at the wind infeed in Germany, which is a dominant factor to determine the size and shape of the domain. The selected day with the high wind infeed was the 19/11/2015.

Due to the high wind infeed, the general loading of the different grid elements is already much higher than compared with low wind days to evacuate the renewable infeed. In addition to this loading of the grid, modifications were done on the Belgium production units to set the nuclear infeed to maximum output, which create additional flows in compared with the historical situation.

The combination of both elements at the same time explain the given shape and size for this typical day.

The only weekend domain available for the winter from the typical days was the day 05/12/2015 which corresponded to a day with a high wind infeed in Germany (>25 GW, more than 50% of the installed capacity), this can explain the shape of that domain.

7. Final input data

FEBEG

FEBEG assumes that Elia will modify some of the input data based on the suggestions and comments of the stakeholders. Therefore, FEBEG would appreciate it if Elia would publish the final input data effectively used for the calculations to determine the volume of strategic reserves for winter 2017-2018.

8. Out of Scope

BDRA

2. *Assuming the Elia proposal leads to a government decision on the volume of strategic reserve that is non-zero then the errors of the past should not be reproduced*

    - *same contract duration for all*
    - *no minimum capacity reserved for a given technology*
    - *maximum duration in-line with actual needs (avoid 2016-2017 situation)*

    It is evident from the 2017-2027 study that a very large proportion of the capacity needed (if any), is only needed for a very short duration. This needs to be reflected in the product design such that the most economic solution can be chosen.

Febeliec

On the Tabs on generation assumptions, Febeliec cannot give punctual comments on specific generation units and their availability nor outage rates, but wants to reiterate its point on the potential return to the market of units in the strategic reserve. Although perhaps beyond the scope of this consultation, and even though the data provided by Elia shows no expected return to the market of those units (which have received monetary support from all grid users through an imposed levy), for Febeliec, if such return would be possible, the conditions for return must be made clear and transparent and published beforehand.