POSITION

Subject: FEBEG comments on CREG's public consultation on Gross CoNE and x-factor
Date: 13 July 2020

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FEBEG thanks CREG for the organization of a public consultation on Gross CoNE and X-factor[1]. Please find hereafter the comments of FEBEG in the framework of this consultation. The comments and suggestions of FEBEG are not confidential.

Main comments:

FEBEG particularly recommends CREG and the Belgian Authorities to **carefully chose the best new entrant technology** in order to calibrate the CRM demand curve. Selecting the technology with the lowest cost (net-CoNE) which does not have the full potential to solve the adequacy issue given its constraints would put the security of supply of Belgium at risk and go against the overall goals of the CRM. Since the net cost of this new entrant technology incorporating a correction factor (X-factor) will determine the global auction price cap, it is highly important that it does not exclude essential steerable and flexible technologies such as CCGT or OCGT in the electricity system. In summary, **one needs to ensure the participation of a backstop technology so as to be able to achieve security of supply at the desired level.**

Additionally, **FEBEG recommends to set the uncertainty margin (X-Factor) for the determination of the net-CoNE at 1.5.** Because the determination of the net-CoNE is based on a large number of uncertainties and hypothesis with regards to the reference technology itself but also the cost of CAPEX, WACC and economic lifetime. CREG calculates the net-CoNE as if the project will get a CRM support over its full lifetime. At maximum, a CCGT would receive a support with certainty during 8 years, the contract duration if the proposed thresholds would be maintained. Hence, the X-factor should be increased to take into consideration the uncertainty after the 1st contract period. Another extremely important uncertainty is without any doubt the difficult exercise of the estimation of the market revenues over the lifetime of an asset. This should be reflected in an appropriate X-Factor. Moreover, a factor of 1.5 is in line with the correction factors applied in other European capacity markets. Deviating a lot from this current practice in other member states is needlessly risky. The uncertainty with regards to the economic parameters is particularly important in the context of the energy transition and the integrated European electricity market which bring - by definition - a lot of volatility and unpredictability in the Belgian electricity system.

Detailed comments:

Recital (34): FEBEG would like to highlight that the VoLL and CoNE determining the reliability standard will be based on numerous assumptions, leading to many different outcomes, and which will automatically result in large ranges regarding these parameters. The choice for a single value for both the VoLL and the CoNE cannot be made by any administrative body alone and will require a profound debate and a difficult political choice which falls within the competences of the Belgian Authorities as it is directly related to an energy policy choice and will integrate broad societal (socio-economic) considerations which cannot be integrated into a general methodology and formula.

[1] https://www.creg.be/fr/consultations-publiques/consultation-publique-relative-au-projet-de-proposition-2086-relative-au
https://www.creg.be/nl/openbare-raadplegingen/openbare-raadpleging-betreffende-ontwerpvoorstel-2086-van-de-brutokost-van

Recitals (45) & (46): The 65 €/kW mentioned in this paragraph most probably refer to an annuity linked to the economic lifetime and should be replace by 65 €/kW/year).
Recital (50): The alternative yearly budget of 350 kgCO2/kWe per year only applies to existing units.

Recital (52): Why is storage not included in the shortlist ? CRM being technology neutral, CREG should justify why they would discriminate against this capacity option. For instance, this could be linked to a potential deployment estimated below the expected capacity needs (see ENTSO-E draft methodology)[2]. FEBEG recommends either including storage facilities in the short-list (like demand response) or to properly justify the absence of this technology.

Recitals (54) & (55): FEBEG have several comments regarding the below table extracted from recital (54) and the associated explanations in recital (55).

	CAPEX (Euro/kW)			FOM (Euro/kW/a)			Durée de vie économique (a)
Technologie	Min	Avg	Max	Min	Avg	Max	
Diesel	300	400	500	10	15	20	15
IcGas	400	500	600	10	15	20	15
CCGT	600	750	900	15	20	25	20
OCGT	400	500	600	5	10	15	20
CHP	700	1000	1200	50	60	70	20
MR	10	20	50	5	10	15	10
Storage1h	70	100	130	5	10	15	10
Storage 3h	500	700	1000	5	10	15	10
StorageV2G	130	150	170	5	10	15	10
PS	900	1000	1100	15	20	25	25

- **IcGas:** FEBEG confirms that the values in the table in recital (54) for gas engines are rather underestimated. FEBEG refers here to the values regarding the IC engine (large, gas) mentioned in the Fichtner study (figure 12)[3].
- **CCGT:**
  - FEBEG would like to highlight that the minimal values are closer to current market reality, and refers here to the PwC and FPS Economy study[4] on the pertinence of the investment threshold proposed by the CREG (graph pg. 7) where the ranges of 450 and 600 €/kW have been given for the main CAPEX of a reference CCGT (equipment and construction). According to FEBEG, these values, coming from the Gas Turbine World, 2019 Handbook, are closer to the business reality even if they do not reflect the total CAPEX (only the equipment and construction part). Also, the sector observes very recent evolutions in terms of technology that will soon arrive to the market, with positive impact in terms of economies of scale.

[2] Proposal for VoLL, CONE and Reliability Standard Methodology, ENTSO-E, May 2020
[3] Cost of Capacity for Calibration of the Belgian Capacity Remuneration Mechanism, Fichtner, April 2020
[4] Observations relatives au document de consultation publique de la CREG, PwC & SPF Economie, November 2019

  - FEBEG does not agree with the argument of CREG that the cost of the field, connection cost, etc. are less relevant in this exercise because most announced new projects are planned on sites with existing plants. Even if these costs represent a limited part of the total CAPEX, this is – by definition – against the principle of the new entrant in the market building a CCGT on a green-field location.
  - FEBEG believes that CCGT have an important role to play in the energy transition. It is therefore crucial that they can compete on a level-playing field with other technologies. Therefore, as a CAPEX intensive technology, they should be able to capture long term (15 years) capacity contracts. The hight of the investment thresholds should reflect this.
- **OCGT**: there is a wide variety types of OCGTs, from small ones (40MW) to larger ones (400-600 MW). The OPEX and CAPEX level (€/kW) will strongly vary in function of the size of the plant because of the possible economies of scale. On top of that, the FOM for OCGT's are strongly underestimated.
- **CHP**:
  - FEBEG would like to highlight that the CHP installations are very much customized to the needs of the industrial site. For this reason, the CAPEX will significantly vary from one site to another.
  - Also, it seems that there is a confusion between CAPEX level (€/kW) and CAPEX annuity (€/kW/year) in the related paragraphs.
- **MR**:
  - When it comes to market response, there is a large variety with a large range different CAPEX cost. This fact should be considered when assessing the relevant technology for the gross and net-CoNE. Moreover, the investment costs of market response will increase as the 'low hanging fruit' is already made flexible to be marketed in the ancillary services or strategic reserves.
  - According to the graph following the paragraph 54, CREG considers a life-span for Market response up to 10 years. FEBEG considers this number is overestimated. Indeed, no industrial or residential client will be willing have a firm commitment over such a long period. FEBEG recommends to consider 3 years to be a more accurate measure for a normal market response contract duration as their availability in the market is linked to industrial processes, the economic situation and other parameters such as the change of equipment and processes. Experience shows that long-term commitments for such capacity is very rare. FEBEG therefore considers using an economic lifetime of 3 years maximum.
- **Storage 1h**: the CAPEX values (€/kW) are largely underestimated by the CREG; the economic lifetime could reach 15 years in some cases.
- **Storage 3h**: the economic lifetime could reach 15 years in some cases.

Recital (56):

- Could CREG clarify if the Fixed O&M also include a provision for the future maintenances? This is an *important element to consider.*
- ***FEBEG recommends to use the average value for the fixed O&M for the computation of the gross CoNE, and not the lowest value.*** *This particularly makes* sense given the important variability within the same technology categories chosen by the CREG.

Recital (57): the proposed formula does not take into account the CAPEX profile.

Recital (58):

- FEBEG refers to the propositions made in the remarks regarding recitals (54) and (55) and recommends CREG to adapt the CAPEX ranges for the CCGT.
- For the computation of the gross CoNE, **FEBEG recommends to use the average value for both the CAPEX (based on the recommendations made above) and the fixed O&M, and not the lowest value.** This particularly makes sense given the important varieties within the same technology categories chosen by the CREG.

Recital (66):

- CREG proposes to use a derating factor of 60% for the market response. According to FEBEG, it is not reasonable to use the upper-side value for the derating factor considering the multitude of types of market response that exist in the market and their associated constraints, both in terms of energy and number of activations. A derating factor of 40% seems more appropriate.
- Moreover, FEBEG would like to clarify its position regarding the energy limitation. It is stated that 71% of Market response capacity have an energy limited to 4 hours or less. While considering every delivery point a single unit, it is almost impossible to find an individual client willing to cut its consumption for more than 4 hours as it would force them to completely shut down their production. To provide energy over a longer time-lapse is possible but has to be done via a pool. FEBEG would like to stress that this limitation should be considered while investigating the potential pool represented by each Market response flexibility provider.

Section 5: Could CREG clarify if the same X-factor is applied to the X-axis and the Y-axis of the CRM demand curve? According to FEBEG, it is possible to use the same X-factor on the X-axis and the Y-axis. FEBEG refers to the position on the consultation organized by the Belgian Authorities on the methodology defining the parameters for the determination of the quantity of capacity to be purchased in the CRM.[5]

Recital (72): FEBEG doesn't agree with the limited variability taken into account by CREG. CREG states an opinion but doesn't sufficiently justify why it decides to take FOM cost only between min and average and why it doesn't apply variability at all on the CAPEX.

Recital (73): FEBEG does not agree with the statement of CREG that the downward variability of the revenues is to be considered as negligible. According to FEBEG, the revenues of (thermal) assets will become very uncertain in the context of the energy transition and the European Green Deal, with the massive development of PV and onshore & offshore windmills. This trend will impact the role some capacities will play in the energy system, from baseload to back-up capacities. Next to the available means of production, there are as well macro-economic trends on both global & European level - such as economic growth, oil, gas, coal and CO2 prices - that will define thermal profitability. The variability of revenues is also important in the case of an economic crisis. Therefore, FEBEG advises CREG to consider the important uncertainties on market revenues of the thermal technologies in the computation of the X-Factor, instead of using a seemingly arbitrary methodology as presented in the report.

Recital (75): The average market revenue for CCGT units of 35€/kW/year is a very optimistic assumption. This estimate of yearly value will strongly vary according to the chosen scenarios as well as from one year to another. It does not represent a more balanced/realistic average regarding future market revenues. FEBEG refers here to the various studies made by CREG on the profitability of power

[5] Febeg comments on FPS consultation on the parameters by which the amount of capacity purchased under the capacity mechanism is determined, FEBEG, March 2020.

plants[6], in which it appears that the operating margin of a CCGT is very volatile, depending on the type of hedging considered. Even though FEBEG does not fully support the methodology and the results of this study, FEBEG agrees with the main observation that the **profitability of a CCGT varies a lot over time**.

Recital (75): **FEBEG does not agree with the proposed X-Factor of 1.1.** According to FEBEG, the proposed value does not consider the many uncertainties around the estimation of the net-CoNE. As mentioned above, there are important uncertainties regarding the expected revenues from the market. Also, this low value will not capture the uncertainties linked to the estimation of the WACC and the economic lifetime of a capacity. Finally, the x-factor should also integrate a possible wrong choice of the reference technology for the gross CoNE from the shortlist. There also, the value of 1.1 would not cover the uncertainty risk.

FEBEG refers to the uncertainty factor applied in other CRMs in order to calibrate the point "A" of the CRM demand curve. In the UK, in Poland and Ireland, the X-factor was set at 1.5 of the net-CoNE. In Italy, it was set at 1.25 of the net-CoNE. FEBEG does not see any reason why Belgium should deviate so far from the current practice regarding the uncertainty margin applied in other countries that have implemented a CRM. We therefore propose to use the X-Factor of 1.5 for the calibration of the demand curve.

Recital (74): Again, FEBEG would like to highlight that the assumptions for infra-marginal rents of CCGT are too optimistic and not in line with the expected market dynamics (cfr. energy transition, Green Deal, impact of economic crisis)

Recital (76):
FEBEG would like to remind the sound principles for the determination of the net-CoNE: one should look at the technology having the lowest cost <u>and</u> which can bring a solution to the adequacy issue of the country in all scenarios <u>and</u> which can be available at the term where it is needed for the system. For this reason, one needs to ensure the participation of a backstop technology so as to be able to achieve security of supply at the desired level.

Given the expected capacity gap created by the decommissioning of baseload nuclear units and the need to cope with intermittency (cfr Dunkelflaute spanning several days), the only backstop technologies available in Belgium are OCGT and CCGT units.

FEBEG is of the opinion that market response should not be selected as technology for the determination of the gross CoNE and ultimately the net-CoNE insofar, the potential of market response at the 2025 horizon, also considering its constraints and its large variety, will not be sufficient to ensure the security of supply of the country. FEBEG refers to the adequacy need identified by Elia in its adequacy and flexibility study over the period 2020-30. The same reasoning actually holds for storage. However, this does not mean that market response or storage should not participate to the CRM as the CRM is technology-neutral and should be open to all technologies.
If the net-CoNE was too low (because it would be based on the cost of market response), it would automatically exclude dispatchable technologies that are required for the energy transition to a low carbon economy and it would put security of supply of the country at risk in some scenarios.

[6] Note Z2045, CREG, January 2020