

Task Force Implementation of Strategic Reserve

April 1, 2019

Meeting Agenda

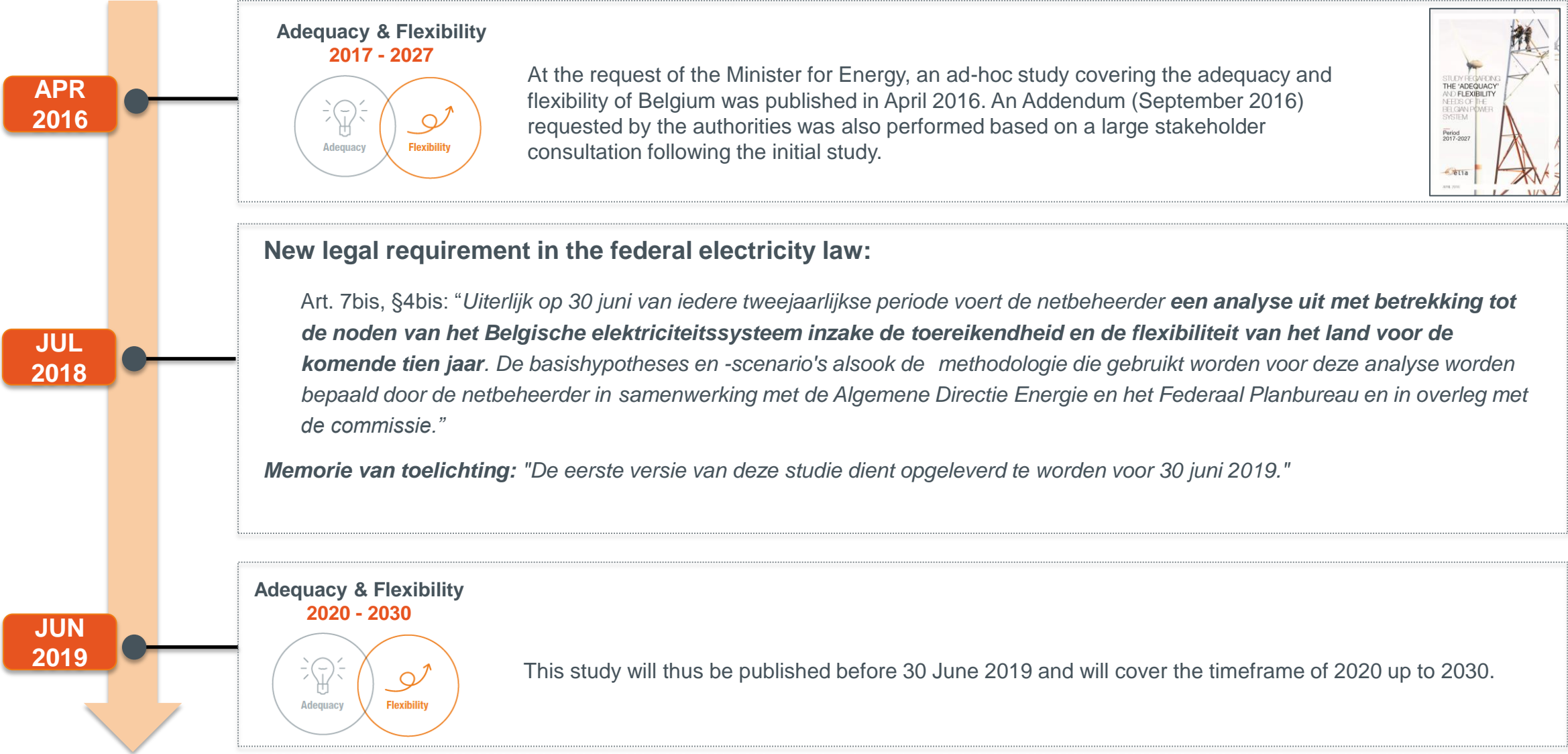
- ❑ **10 year Adequacy & Flexibility study: consultation report**
- ❑ **Procedure for Constitution – consultation report**
- ❑ **Demand response annual update – first results**
- ❑ **Public Consultation: Methodology Volume Assessment Strategic Reserve 2020-21**



10-year Adequacy & Flexibility study

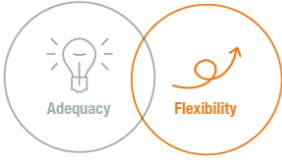
Consultation Report

Regulatory & Legal framework

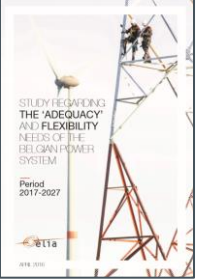


APR 2016

Adequacy & Flexibility 2017 - 2027



At the request of the Minister for Energy, an ad-hoc study covering the adequacy and flexibility of Belgium was published in April 2016. An Addendum (September 2016) requested by the authorities was also performed based on a large stakeholder consultation following the initial study.



JUL 2018

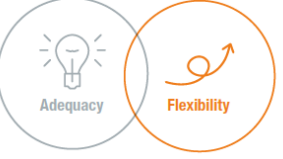
New legal requirement in the federal electricity law:

Art. 7bis, §4bis: *“Uiterlijk op 30 juni van iedere tweejaarlijkse periode voert de netbeheerder een analyse uit met betrekking tot de noden van het Belgische elektriciteitssysteem inzake de toereikendheid en de flexibiliteit van het land voor de komende tien jaar. De basishypothesen en -scenario's alsook de methodologie die gebruikt worden voor deze analyse worden bepaald door de netbeheerder in samenwerking met de Algemene Directie Energie en het Federaal Planbureau en in overleg met de commissie.”*

Memorie van toelichting: *“De eerste versie van deze studie dient opgeleverd te worden voor 30 juni 2019.”*

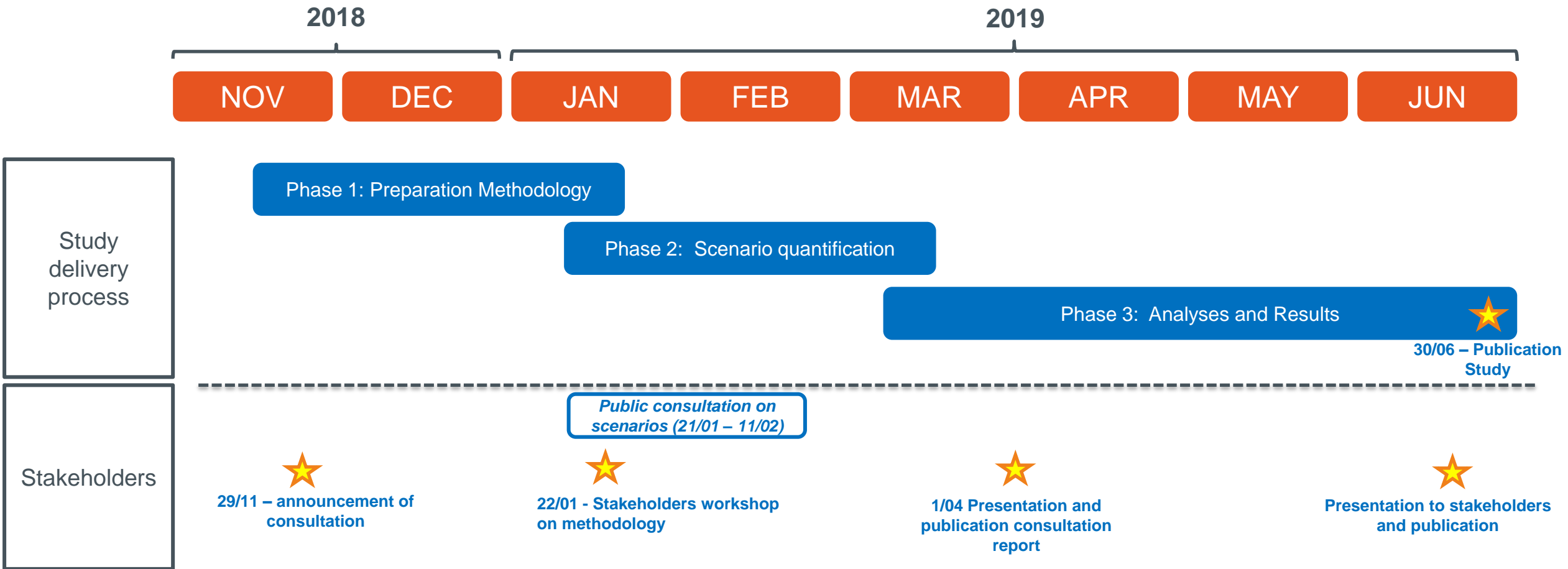
JUN 2019

Adequacy & Flexibility 2020 - 2030



This study will thus be published before 30 June 2019 and will cover the timeframe of 2020 up to 2030.

Timeline



■ An Excel file containing the “base case” scenario was submitted for consultation



0. Scenario framework

1. Renewables

2. Nuclear

3. Interconnections

4. Structural block - 'Base case' scenario

4.1 CHP

4.2 Market Response

4.3 Storage

4.4 Needed capacity to ensure SoS and flexibility needs

5. Total electricity consumption

6. Economic and technical variables

6.1. Fuel and CO2 prices

6.2. Investment costs

6.3. Forced outage rates

6.4. Flexibility characteristics

7. Assumptions for other countries

■ Period for public consultation

- **Start** : 21 January 2019
- **Deadline**: 11 February 2019, 18.00

Link and more information:

http://www.elia.be/en/about-elia/publications/Public-Consultation/20190121_Public-consultation-on-the-data-used-for-the-study

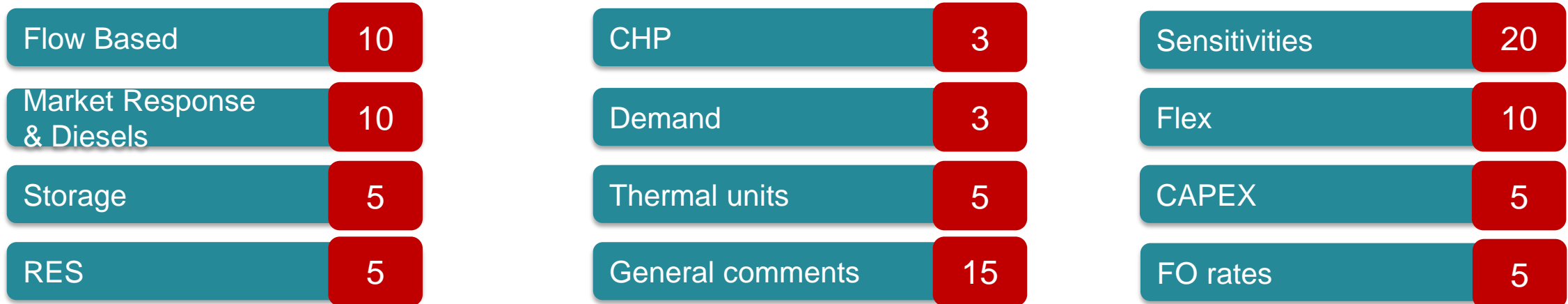
5 public reactions

CREG
FEBEG
FEBELIEC
COGEN
ACER (D. Woitrin)



Around **100**
questions/clarifications/requests

Answers clustered by category (+ approx. number of comments):



The non-confidential reactions and the consultation report will be public on Elia's website.

General Remarks

- **Besides the general support for the study (and the flexibility study which is welcomed) also some regrets:**
 - Regret that the consultation period was too short (three weeks)
 - Regret that there is no consultation on the methodology (particularly on the flexibility study which is new)
 - Regret that no information is given on sensitivities
 - Regret that no consultation document with justification and clarifications
- ⇒ We understand these remarks, however, these will not lead to a change of the content of the final study. We'll take this on board for future consultations of this kind and the remarks will be addressed in the consultation report in the following way:

- **Although it has no legal obligation, Elia did its utmost effort to involve market parties as much as possible**
 - *Legal framework and deadline (June 30) provided constraints towards consultations, prior alignment has been done with CREG, Planning Bureau and FPS Economy*
 - *Objective of the consultation was to receive feedback from stakeholders concerning input parameters and assumptions of the base case scenario from 2020 to 2030*
 - *Elia organized a methodology workshop for which market parties were invited (20/01/2019)*
 - *Discussing / consulting the new flexibility methodology was not feasible (and also not efficient before having view on the results)*
 - *Elia is happy to receive feedback on the methodology, preferably when having the results (and take this into account when preparing the methodology towards 2021)*
 - *Public consultation allows market parties to propose sensitivities (as mentioned during task force) and most did*
 - *Justification and clarifications were given in task force (all respondent were present), further clarification given in this consultation report*
 - *A wide range of stakeholders was addressed by mailing and all documents were publicly accessible on the Elia website*

Comments on data source for the Base Case scenario were clarified with the following frame

Base Case is built based on:

- **NEPC (scenario WAM)** for
 - RES (wind, PV, biomass)
 - Nuclear (according to law)
 - Consumption growth

- **EnergyPact** for:
 - Market Response volume
 - Storage volume

- **FOP 2020-30 & TYNDP 2018** for:
 - Planned grid reinforcements

- **IEA – WEO 2018 – New Policies** for:
 - Fuel and CO₂ prices

- **MAF2018 (or MAF2019 if available)** for:
 - Other countries installed capacities, consumption (20 countries)
 - Complemented with additional info from the market:
 - ‘PPE’ in France
 - ‘Coal phase out commission’ outcome in DE
 - ‘Klimaatakkoord’ in NL
 - Future Energy Scenarios in UK

| NEPC - WAM | | | | | | | |
|----------------------------------|------|------|------|------|------|------|------|
| | Unit | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 |
| Nuclear energy | GW | 6 | 6 | 6 | 6 | 2 | 0 |
| Solids | GW | 0 | 0 | 0 | 0 | 0 | 0 |
| Oil (including refinery gas) | GW | 0 | 0 | 0 | 0 | 0 | 0 |
| Gas (including derived gases) | GW | 4 | 4 | 5 | 6 | 8 | 10 |
| Biomass-waste | GW | 0 | 1 | 1 | 1 | 1 | 1 |
| Hydro (pumping excluded) | GW | 0 | 0 | 0 | 0 | 0 | 0 |
| Wind | GW | 0 | 1 | 2 | 5 | 6 | 8 |
| Solar | GW | 0 | 1 | 3 | 6 | 8 | 11 |
| Geothermal and other renewables | GW | | | | | | |
| Other fuels (hydrogen, methanol) | GW | | | | | | |

Energy Pact (text)

Les quatre entités veilleront à assurer un développement continu de nouveaux outils de stockage centralisés et décentralisés ainsi que des services de déplacement de charges en industrie et chez les particuliers. Les capacités de stockage industriel atteindront environ 2GW à l’horizon 2030. Le stockage industriel et résidentiel, les outils locaux, les véhicules électriques en mode stockage atteindront une capacité totale de l’ordre de 3,5GW au même horizon. Les moyens d’effacement de la charge tant en industrie qu’en résidentiel ou tertiaire permettront d’atteindre une capacité totale de l’ordre de 2GW en 2030. Le volume de déplacement de charges journalier sera au total de près de 1,5GWh. Entre 2020 et 2030, la trajectoire de déploiement ne sera pas linéaire, mais connaîtra une accélération après 2025. À cette échéance, de 30 à 40% de l’objectif du stockage et du DSM aura été atteint en 2025. Une part croissante de ces différentes capacités contribueront directement à la sécurité d’approvisionnement en étant d’une part disponible et d’autre part activable via le marché.

Modifications to the reference scenario following the public consultation

| 2030 | | |
|---------|------------|------------|
| | EnergyPact | Draft NEPC |
| Wind | 8,5 GW | 8 GW |
| PV | 8 GW | 11 GW |
| Biomass | 1 GW | 0,7 GW |

Energy Pact figures were used as base. The most recent Belgian ambitions will be used (NEPC – National Energy Climate Plan).

Those changes will be applied in the reference scenario to be fully in-line with the PNEC

CHP installed capacity

Inesco and Zandvliet will be moved to “CHP” category as “CCGT-CHP”

Clarification on storage split of capacities

Although the total power capacity is mentioned in the Energy Pact, no split nor reservoir capacity is given. Additional assumptions need to be done as follow:

- **In 2030: 1,6 GW total storage** (excluding “pumped storage”)
- We have done a split between 3 types of storage
 - V2G (bi-directional EV charge/discharge to the grid)
 - 5% of the EV fleet providing it (and permanently connected to the grid);
 - 7 kW charger;
 - **4 hours storage** (50% of the battery size used for V2G purposes)
 - Small scale (“power walls”, <100 kW)
 - Based on PV installations (5% of PV installations (1 kW storage for 1kW PV))
 - **3 hour storage** (based on current and future expected average battery sizes)
(Current Tesla powerwall has 2 hours storage)
 - Large scale (>100 kW)
 - Remaining capacity = TOTAL – V2G – Small scale
 - **1 hour storage** (based on current and future expected average battery sizes.
(Current and projects in CWE have 0,7 hours storage. Source: BNEF)

2025: 0,18 GW, 0,72 GWh
2030: 0,46 GW, 1,84 GWh

2025: 0,41 GW, 1,23 GWh
2030: 0,55 GW, 1,65 GWh

2025: 0,41 GW, 0,41 GWh
2030: 0,59 GW, 0,59 GWh

Sensitivities requested by stakeholders

- Nuclear [CREG + 2GW, Febeliec]
- Low RES [FEBEG]
- Different Demand [FEBEG], Lower Demand [Febeliec]
- Higher CHP [CREG, Febeliec, COGEN (+1GW)]
- Lower CHP [FEBEG, COGEN (-1GW)]
- Existing thermal in structural block [CREG]
- Market response volume in function of results [CREG]
- Lower storage as it won't develop without support [FEBEG, D. Woitrin]
- Lower Market Response as won't develop without support [FEBEG]
- Additional Pumped storage [D. Woitrin]
- New diesels [Febeliec] [CREG]
- Reduced thermal in CWE [FEBEG], Replace coal by gas abroad [CREG]
- CO2 price [CREG], Carbon price sensitivity [FEBEG]



Flow based (selection of comments)

- How will CEP be taken into account (70%, internal and how to take into account RD after market and check feasibility) ? [FEBEG]
- How the 70% in CEP will be taken into account [CREG] [Febeliec]

The base case flow based domains will take into account the latest known implementation in the CEP and CORE rules. A sensitivity will be foreseen on those.

- NTC and FB method should be run in parallel [CREG]
- Added value of the FB method ? [FEBEG]

The CWE capacity calculation is based on the so called “flow based” methodology since 2015. It is also the ambition of the European adequacy assessment to move towards a “flow based” method. It is difficult to take into account correctly the CEP rules if no flow based is applied.

- The method and data for FB should be consulted as well [CREG]

Given the timing to develop this methodology, it won't be ready for consultation. The methodology will be detailed in the report as well as underlying assumptions resulting flow based domains.

Market Response

- How Elia will take into account additional volumes for W18-19 [CREG]
- Elia under-estimates available MR for 2018. Wants complete breakdown of data [Febeliec]
- Cross check of the MR should be done with this winter considering exceptional measures that may not re-materialize under normal market conditions [FEBEG]
- Why so big increase of Market response after 2025 ? [FEBEG]
- Market response volume to be adapted in function of simulation results [CREG]
- Introduction of smart meters and how this will be taken into account [Febeliec, CREG]

The base case volumes are based on the “Energy Pact” :

- Market Response volumes will be based on the Energy Pact figures with 1,1 GW in 2025 and 2 GW in 2030 for the reference scenario
- The e-cube study is only used to make the linear interpolation between the first 3 years and 2025
- An additional sensitivity will be foreseen with more MR volume

Diesels, Turbojets, emergency generators

- Do not only consider CCGT/OCGT but also existing diesels, gas motors, stoomturbines, afval verbranding ,emergency generators,... [CREG]
- Diesels should be considered, 400 MW according to CREG in hospital (+ all the others), if considered in the market response volume, then should be even higher [Febeliec]

Emergency generators as part of the Market Response volume:

- Emergency generators -> considered as part of Market Response volume

Add a diesel/gas motor category:

- A sensitivity with diesels/turbojets/gas motors will be foreseen

General questions on the flexibility study

Is it the objective to provide visibility to guide market participants and investors in their decision-making or will Elia propose concrete recommendations and actions? Call upon Elia to be prudent and to carefully consider possible recommendations or actions in order to avoid to launch a new debate or controversy on the energy mix [FEBEG].

Main objective is to provide information to stakeholders and investors of future system needs

Not excluded Elia will use relevant conclusions to formulate recommendations if issues on flexibility are identified

It is considered it valuable that market parties would receive more detailed insight on the exact methodology that will be used and that they would be able to contribute to the development and improvement of the methodology. Will Elia at some point consult on the methodology for the determination of the flexibility needs [FEBEG]?

Consultation on the methodology was not foreseen, Elia is open to have discussions on the methodology after the study is published and results are known

Technologies accounted in the flexibility study

- Do the simulations take into account if the existing flexibles units are new or renovated [ACER]?
- Other categories of flexible capacity which can fill the structural block are also to be taken into account as source of flexibility (diesels, turbojets). Febeliec regrets that the diesel generators (and similar technologies) have not been introduced [CREG, FEBELIEC]?

A distinction between old / recent / new technologies is foreseen for CCGT and OCGT (as can be seen in the flexibility characteristics consulted)

Technology mix in the structural block are not defined yet, but a scenario with diesels and turbojets is foreseen in a sensitivity

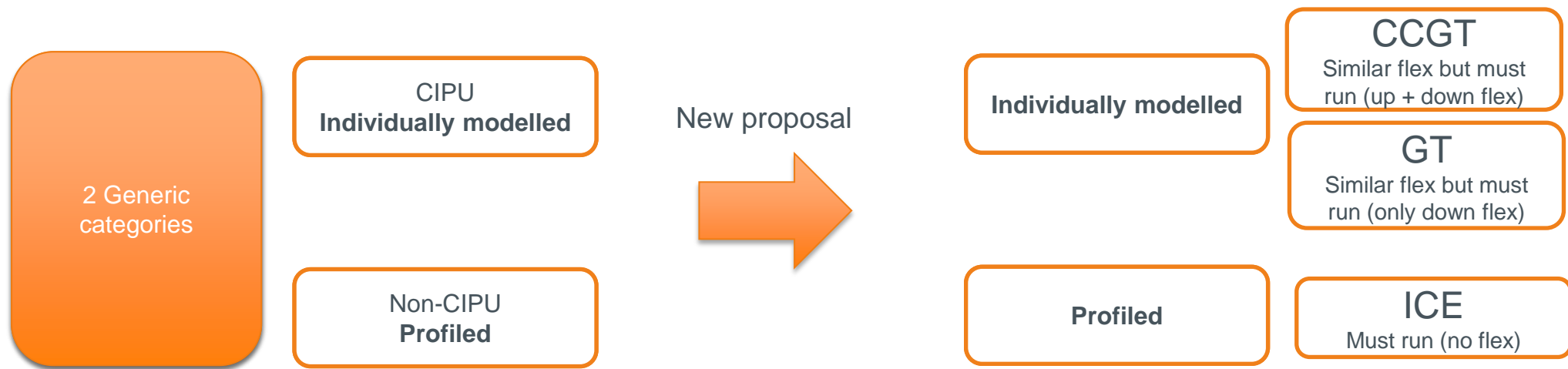
The flexibility study will take into account the flexibility characteristics of each technology type which is used in the simulations

Turbojets and diesels will be treated as very flexible (fast flexibility and slow flexibility and only ramping flexibility when dispatched)

CHP

- Remark 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 [FEBELIEC]
- COGEN provided specific values based on a survey with their members. They assume with this figures that the CHP units are operated in function of maximal security of supply and flexibility [COGEN].

Available information on the technical characteristics and shares of different CHP-types is used to increase the level of detail to the extent possible



- Underlying heat constraints (cfr. it is for this reason that some types are modelled to run at Pmax, only providing downward flexibility)
- Additional constraint in practice as the daily maximum start-up times (but accounted with other operational constraints)
 - **For this reason, Elia takes into account an 8 hours duration to represent an energy limit as well as other technical constraints**

Modelisation of CHP into generic categories is difficult as every CHP has a specific underlying application impacting its schedule and dispatch

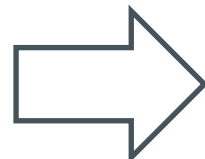
Market Response

- Questions to clarify the assumptions of market response, i.e. how the 86% values is determined. Furthermore, it is asked to clarify what the grey cells are for.

- The areas in grey mean that no capacity is able to deliver this type of flexibility (for instance, demand response is assumed to only provide upward flexibility)
- For 2020, a market response capacity of 1403 MW is assumed (extrapolation of historic market response capacity following E-CUBE study), which is expected to include an ancillary service volume of 535 MW (estimation given in the current market response study), i.e. around 40% of total market response. The market response (excluding ancillary services) was allocated over the 5 categories based on the results of the E-CUBE study. The capacity of ancillary services is added to the 4 hour duration category (622 MW), resulting in a share of 86% in 2020. With the increasing share of market response, this share decreases to 74% in 2030 (as the 535 MW is kept constant).
- We can therefore assume that this share will be able to deliver fast flexibility, as it is able to deliver ancillary services in 15 minutes today, corresponding to the current product characteristics.

Based on further analysis, Elia proposes to take into account higher ramping flexibility characteristics as well as consider the market response as one category (but the 5 categories are maintained in the flexibility study)

| | Maximum upward flexibility | | |
|-----------------|----------------------------|---|------------------------|
| | Ramping flexibility limit | Fast flexibility limit | Slow flexibility limit |
| Demand Response | | | $P_{max} - P_{nom}$ |
| CAT-1h | | | $P_{max} - P_{nom}$ |
| CAT-2h | | $\min(85\% P_{max}; P_{max} - P_{nom})$ | $P_{max} - P_{nom}$ |
| CAT-4h | | | $P_{max} - P_{nom}$ |
| CAT-8h | | | $P_{max} - P_{nom}$ |
| CAT-nolimit | | | $P_{max} - P_{nom}$ |



| | Maximum upward flexibility | | |
|---------|--------------------------------------|--------------------------------------|------------------------|
| | Ramping flexibility limit | Fast flexibility limit | Slow flexibility limit |
| CAT-all | $\min(10\%P_{max}; P_{max}-P_{nom})$ | $\min(40\%P_{max}; P_{max}-P_{nom})$ | $P_{max} - P_{nom}$ |

Interconnections and cross-border flexibility

- On the estimation of flexibility needs: are the data available with a 15 minutes granularity for all countries modelled? At the moment, there are no flexibility studies published in other countries. How does Elia take the neighboring countries into account? What is the mechanism of the borders and the timing of borders [FEBEG] ?

Flexibility needs are only calculated for Belgium, these needs can be met by local means and import / export. Remaining capacity after day-ahead is assumed to be available for the slow flexibility facilitated by the intra-day market (remaining capacity takes into account limited market liquidity during scarcity).

Additionally, a capacity of 50 MW (up) and 350 MW (down) of fast flexibility is taken into account (based on current reserve sharing capacity)

- For the flexibility study, the cross-border capacity that is considered is the left-over of the day-ahead capacity. This approach is less precise than what is done today operationally. Shouldn't Elia consider a more advanced approach for defining the intraday cross-border capacity (at least in line with the current practices, or foreseeing the arrival of the flow-based intraday capacity calculation [FEBELIEC] ?

The current approach assumes that all remaining capacity after day-ahead trading can be used for intra-day actions. At this stage, Elia does not see the need to implement a more sophisticated methodology and assesses the current methodology as sufficiently adequate

Clarifications

Can Elia clarify to which extent Elia takes into account the availability of reserve capacity (FCR en FRR) to avoid, in extreme cases, an activation the load shedding plan [CREG]

It is explained during the workshop that no distinction is made between reserve capacity and flexibility:

- FCR: modeled separately as not covered by ramping, fast or slow flex (i.e. 90 – 100 MW)
- FRR: not modeled separately as part of the ramping and fast flex (split flexibility / balancing is out of scope)

The FRR (being part of the ramping and fast flex) needs to be kept available at all time to cover variations or prediction errors during peak demand periods.

It is expected that the most critical situation for the grid is a cut-off of all the offshore wind power following a heavy storm. This seems superior to a forced outage of NEMO-link, Alegor or Nuclear Unit [ACER]

Elia refers to Dossier Volume 2019*, in which it explains that the impact of offshore storm disconnection is not a typical forced outage event. The same is true for the flexibility study in which forecast errors and variations of offshore are taken into account, but not as forced outage or N-1.

*<https://www.creg.be/nl/openbare-raadplegingen/raadpleging-over-ontwerpbeslissing-b1808-betreffende-de-vraag-tot-goedkeuring>

Forced Outages

- Does Elia foresee a correlation between seasonality and the forced outages as units with an enduring shut-down may impact the average duration of the forced outages. Can a probability distribution curve based on observed unavailability impact the result? [CREG]

Next slide provides clarification on how each FO parameter is determined (source and calculation)

1. Elia takes into account planned maintenance duration when calculating the forced outage rate and duration
2. Elia already takes into account a probability distribution to simulate outages, and does not see the value of adding additional uncertainty to the simulations

- How is the Forced-Outage rate of DC-lines determined? [CREG] 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. [FEBELIEC]

Clarify 2 outages per year for NEMO-link is an estimate based on other HVDC-links (to be further assessed when NEMO-link is in operation)

Forced Outage Probability

| |
|-------------------------------|
| Elia (2007-14) |
| ETP (2015-17) where available |
| SR - MAF |
| Analysis |

* Note that 6% is proposed by ENTSO-E for HVDC FO rate. However, in the scope of SR, stakeholders have expressed the fact that 6 % is too high. A consensus was reached with 5% of FO

| | Number of FO per year 2020 | Average forced outage rate over 2007-2017 [%] | Average duration of forced outage rate (2007-2017) [days] |
|----------------------|----------------------------|---|---|
| Nuclear | 1.6 | 3,5% | 7 days -171 hours |
| Classical | 6.1 | 7,9% | 3 days – 83 hours |
| CCGT | 5.2 | 8,9% | 4 days – 97 hours |
| GT | 2.8 | 12,3% | 6 days – 133 hours |
| TJ | 2.2 | 4,3% | 4 days – 105 hours |
| Waste | 1.3 | 1,5% | 3 days – 72 hours |
| CHP | 3.5 | 6,4% | 5 days – 111 hours |
| Pumped storage | 1.9 | 4.3% | 6 days – 141 hours |
| NEMO-link (per side) | 2,0* | 5,0%* | 7 days – 168 hours |

$$Average \ #FO = Average(\# FO_{2007} + \dots + \#FO_{2017})$$

$$Average \ duration \ of \ FO = \frac{Average(FO \ duration_{2007} + \dots + FO \ duration_{2017})}{\#FO \ over \ 2007 \rightarrow 2017}$$

*Analysis BritNed (but not necessarily transferable to NEMO-link)
 14 outages (2016-2018) = 5 outages per year
 = 2 + 2 outages

$$Average \ forced \ outage \ rate = \frac{(FO \ energy_{2007 \rightarrow 2017})}{(FO \ energy_{2007 \rightarrow 2017} + Available \ status_{2007 \rightarrow 2017})}$$

Conclusions: what will be changed in the dataset

- The public consultation was very useful as it highlighted the data that were not understood by market parties and it resulted in relevant suggestions for changes and sensitivities
- Based on the inputs received we will adapt and clarify a large amount of inputs (not exhaustive):
 - **Consumption growth** will be aligned with the NECP figures for the base case scenario
 - **CHP:** better categorization (Zandvliet, Inesco), split GT/ICE and flexibility parameters
 - **RES:** fully alignment with draft NECP
 - **Existing thermal, new:** will be taken into account when filling the structural block
 - **Storage:** explicitly mention the assumption source for the split between categories
 - **Diesels & alike:** new category created and can be taken into account as sensitivity
 - **Market response:** review of flexibility characteristics based on the input received
 - **Sensitivities:** more than 20 received, will be tackled on basis of results
 - **Forced outages:** clarification on the data and different parameters and how they are calculated
 - **Flow based:** publication of domains and assumptions as well as the methodology

Procedure for Constitution – consultation report

Context elements

- Public consultation of Procedure for Constitution (PfC) for SR 2019-2020 ran from 17/12/2018 until 25/01/2019
- Ministerial Decree 15th of January 2019, instructing Elia to constitute a strategic reserve of 0 MW for Winter Period 2019-2020
 - Keeping in mind that the volume is subject to change until 01/09/2019
- After consultation, CREG approved the Functioning Rules on 14/02/2019 which will be applicable as of 01/11/2019
- Reminder: The consultation of the PfC only concerned the PfC, thus:
 - Subjects relevant to other documents (ARP contract, Functioning Rules) were out of the scope
 - Subjects relevant to the Electricity law were also out of scope
- **In total Elia received remarks from 3 market parties (all were non-confidential)**

Summary of frequent or most important questions

1. General questions concerning the SR tender
2. Delivery Points
3. Certification

Remarks & Answers by Elia

1. General questions concerning the SR tender (§4, §4.5.2)

- **Transparency**
 - **Volume revision**
- Elia will also inform the non-selected suppliers of the fact that an award decision has been taken. Elia will publish the average price for the total volume contracted, as done every year, to the extent possible, without making public commercially sensitive information.
- Elia recognizes the uncertainty which the given example case would entail. It is indeed possible for the Minister to adapt the volume in September vis-à-vis any decision previously taken, including a decision instructing to put in place a Strategic Reserve for 0 MW. In which case Elia will minimise any timing issues that may be associated with such instruction, to the extent that is legally and practically possible.

Remarks & Answers by Elia

2. Delivery Points (Chapter 5)

- **Ordering Submeters SDR**
 - **SDR & ToE**
- The possibility of a volume revision is defined in the Electricity Law and is as such out of scope of this consultation. Elia wishes to integrate this modality as pragmatically as possible and recognizes the concerns of market actors on the implied uncertainty.
- In the current design, there is no exception for this situation; ToE administration must be completed before the Simulation Test, which is to be done before 1 November.

Remarks & Answers by Elia

3. Certification (§7.2.2, §7.2.2.3, §7.2.2.5)

- **DROP-TO abolishment**
 - **Emergency Generators**
- PfC follows the stipulations of the Functioning Rules on this aspect. Elia wishes to point out that the modalities of the prequalification ensure ample guarantees for the availability of the contracted volume. Moreover, the SDR contract holder is only remunerated for the minimum of the real available volume (SDR_MAD), the contracted volume for reservation and the delivery of the required volume (SDR_REQ) for activation. SDR DROP-TO is also a product that does not incentivize consumption during the winter in order to ensure the availability of the volume. The functioning rules additionally impose that (I) the contracted volume has to be available on days with high day-ahead and/or imbalance prices and (II) that the AP shall not have participated in the balancing market since November 2015. Furthermore, article 7quinquies §2 of the Electricity Law specifies that emergency generators are eligible for Strategic Reserve through demand reduction and any other category requires an announcement of definitive closure conform with art 4bis §1 of the law (implicating it would be in the market at a certain point, making it not eligible for SDR anyway).
- Art. 2 of the E-Law imposes that the nominal capacity of EGs, participating in SDR, cannot be significantly higher than the maximum consumption of the site and should only be used to cover the consumption of the site where it is installed. In the Functioning Rules, this has been fixed at 110% and is consequently out of scope of this consultation.

Remarks & Answers by Elia

3. Certification (§7.2.2, §7.2.2.3, §7.2.2.5)

- **Maximum SDR Reference Power**

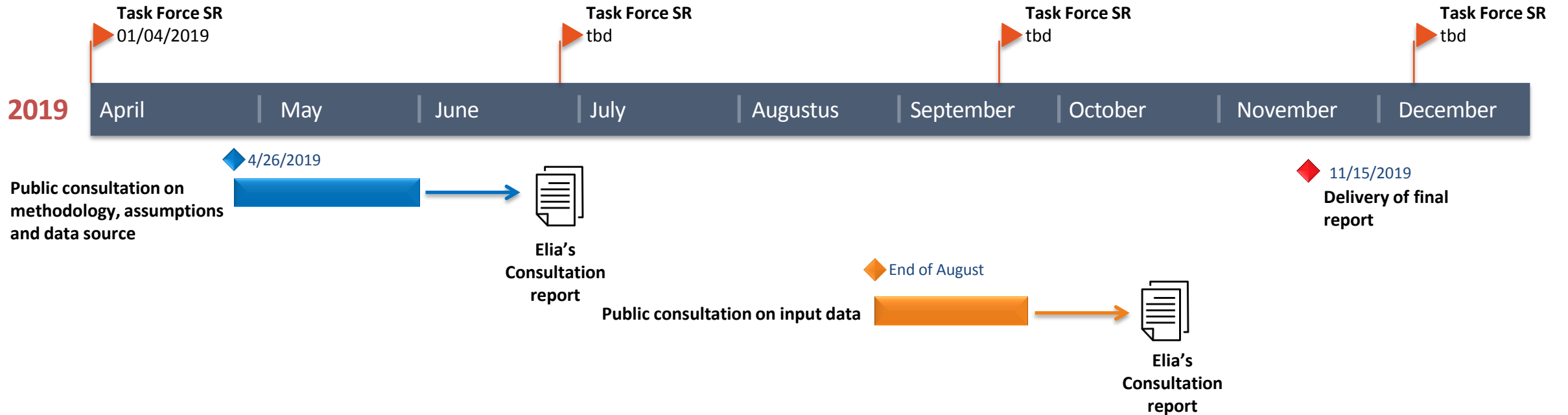
- A) These modalities are originally defined in the Functioning Rules and are therefore as such out of scope of the public consultation on the PfC. Nevertheless, Elia wishes to point out that it uses the same method as in previous years. Due to the distress of last winter period the low probability, high impact scenario has been altered to take into account such impacts; logically the impact can also be traced in the prequalification criteria. The basic hypotheses and scenarios as well as the methodology used for this analysis are determined by Elia in cooperation with the General Direction Energy, the Federal Planning Bureau and in consultation with the committee, as required by law.
- B) Elia notes this remark, but it is out of scope for the public consultation on the PdC. As already indicated by Elia on earlier occasions, this item will be discussed at the appropriate time in the near future. The methodology will allow to integrate any volumes visible in the Belpex curves.

Demand response annual update – first results

Public Consultation: Methodology Volume Assessment Strategic Reserve 2020-21

Planning of the public consultations

- **April 2019:** Methodology, assumptions & data sources
- **August 2019:** Input data



What are the methodology improvements?

1. Flow-Based modelling

- Update the typical days used to account for the latest grid & market structure changes

2. Total Demand Growth

- Investigate the possibility to propose an alternative demand forecasting framework (quality assessment)

3. Demand profiles for all European countries

- Elia will incorporate Trapunta (new in ENTSOE) into this analysis, provided this method is tried & tested in due time

4. Market Response

- Rerun of the quantitative analysis

5. Forced outage rates and availabilities

- Update of the analysis

6. Planned outage for nuclear productions units in BE and FR

- REMIT remains the reference. Additionally, Elia will investigate if sufficient high quality data is available to make a statistical modelling of the planned outages

Many thanks for your attention!

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