Input consultation

Strategic Reserve volume assessment

2019-12-02

General

- The consultation period was set from Wednesday August 28th to Wednesday September 25th 2019, 18h00.
- Elia received 4 non-confidential answers to the public consultation from
  - FEBEG
  - FEBELIEC
  - CREG
  - EM
- A total of 17 questions were received, which were divided into 5 categories.

Category	# questions
Demand assumptions	3
Market response	5
Generation assumptions	3*
List of power plants	2
Flow based	4

- All questions and Elia's report detailing its responses will be published today.
- * deviations with CIPU data were identified after the publication and are rectified in the final version.

Demand assumptions

- Profile changes such as increased **peak consumption** due to increased electrification of heating and transport should be incorporated by means of the new ENTSO-E trapunta methodology for load profiling. This methodology was adapted for this year's volume assessment.

- 2017 demand was **wrongly labelled** as forecast but is in truth historical data. Unfortunately the historical load vector for 2018 was at the time of modelling not yet available. The same approach as was used for Elia's Adequacy & Flexibility study was used extrapolating from 2017 onwards.

- The concerns involving the IHS forecast were already adressed in the methodology consultation. We assume from next year onwards **Elia's demand forecasting** framework will take over the role of the IHS forecast on demand growth.

Market response: methodology

- **As a result of a low stakeholder participation on the July 2019 TF the choice was made to allow stakeholders to motivate the expected growth rate for MR during the input consultation. However, a lot of remarks received were directed at the methodology.**
- Methodology is not a part of the input data consultation.
- Elia already suggested and is analysing block bid impact & multiple NEMO impact.
- It should be understood that the current methodology, being based on a thorough research effort and bearing in mind experiences with alternative methodologies in the past, cannot be abandoned without having a better alternative at hand.

Market response

- **Advocating a high MR growth rate:** increased max. imbalance price, historical data shows not enough moments of high price to ‘reveal’ the true MR volume. 200MW of emergency generators in hospitals, high potential in residential sector with the rollout of smart meters
- **Advocating a low MR growth rate:** in line with the methodology, stronger growth rates require market participants to expect a market change that increases MR profitability. Economical growth can lower flexibility of industrial end users.

In line with the progressive approach towards MR evolution in last year’s assessment, and to react on the strong opinions made by FEBELIEC & CREG stating that none of the proposals are progressive enough, Elia will proceed with a 7% growth rate, which is exceeding any of the 3 proposed growth rates.

Generating assumptions

- **Decreasing biomass** values seem unexpected. Biomass growth rates are defined based on projections of the regions, after correction for the decommissioning of large Biomass plants. After consideration a mistake involving the Awirs decommissioning was found and corrected.

- Elia has faith that the different **regional bodies t**hat govern the distributed generation are well informed and best placed to provide data on the future evolutions as these generation types are often policy driven (subsidies, taxation, ...).

- Concerning **exceptionally available units** of winter 2018-19, Elia does not possess the necessary information to judge whether units are ‘able’ to be put back into operation nor whether it would economically be sound to do so from the market actor’s perspective. In the advice Elia provides the Belgian government concerning the required volume of SR, Elia deems it is necessary to stick to official information as is legally regulated.

Flowbased

- The **minRAM20%** assumption is directly related to the use of the SPAIC process for domain construction. In light of fast evolving market conditions (CEP) Elia is contemplating moving towards another flowbased framework in upcoming volume assessments such as the one used for the AdeqFlex study.

- Elia believes the impact of the **'Clean-Energy Package'** can only be properly evaluated when all national action plans are well detailed (e.g. for Germany).

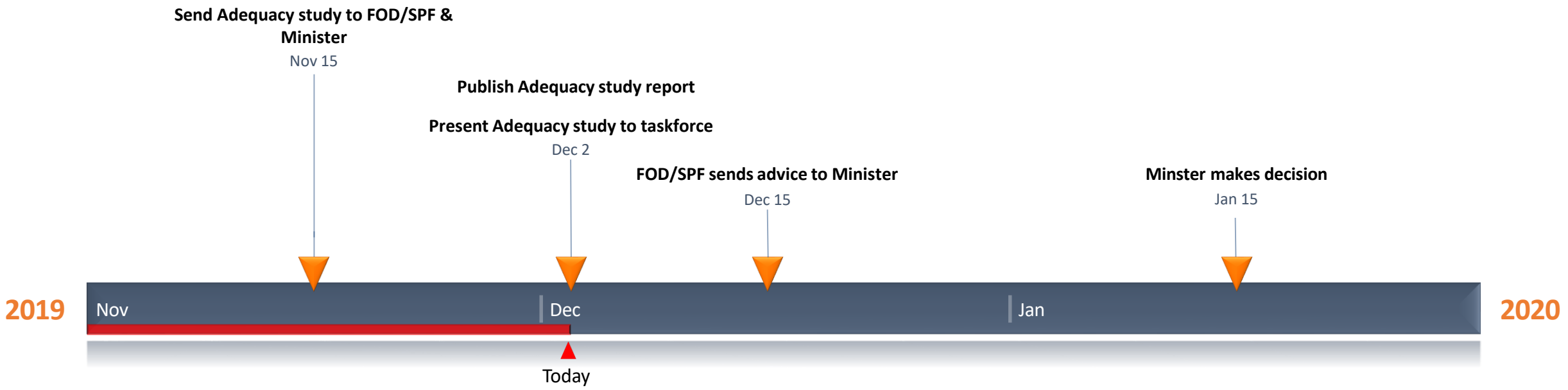
- The introduction of sensitivities evaluating **the adequacy impact of specific grid elements** is not part of the scope of the strategic reserve volume assessment. For an impact assessment of the addition of new interconnections in the CWE region, please refer to the SPAIC studies performed at CWE.

Volume assesment

Strategic Reserve volume assessment

2019-12-02

Planning


Send Adequacy study to FOD/SPF & Minister
Nov 15
Publish Adequacy study report
Present Adequacy study to taskforce
Dec 2
FOD/SPF sends advice to Minister
Dec 15
Minster makes decision
Jan 15
2019
Nov
Dec
Jan
2020
Today

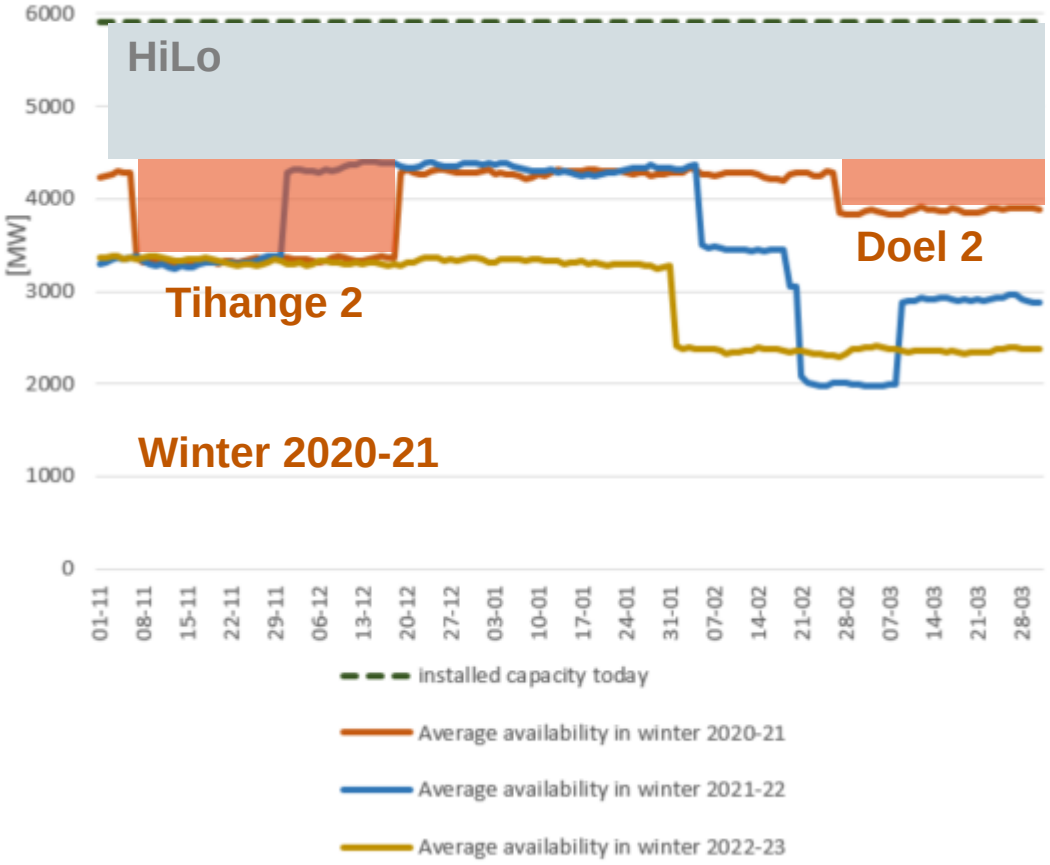
Assumptions

- Generation
  - Use of the ENTSO-E database for non CWE countries (zonal information)
  - New climate database
  - SMA databases for CWE (updated based on most recent FES, Bedarfsanalyse, Monitoring levenszekerheid, BP)
  - Market response: new E-Cube study
- Demand
  - ENTSO-E load + profiles created with a new tool that was developped at ENTSO-E
  - ‘IHS’ total load growth for BE
- Exchanges
  - Non-CWE energy exchange via NTC
  - CWE energy exchange with Flow based including AT & Alegro as continuous variables
  - Curtailment sharing with GB through IFA/BritNed/NEMO

Methodological modification overview

Modification from		Methodological change
SRV6	Adeqflex	• Use of zonal renewable generation data
SRV6	Adeqflex	• Improved hydro modelling based on new ENTSO-E data collection
SRV6		• Demand modelling by means of new ENTSO-E tool
SRV6	Adeqflex	• Different flow based modelling combining the SPAIC data (DE/AT split) with ALEGRO & HTLS changes

Nuclear availability

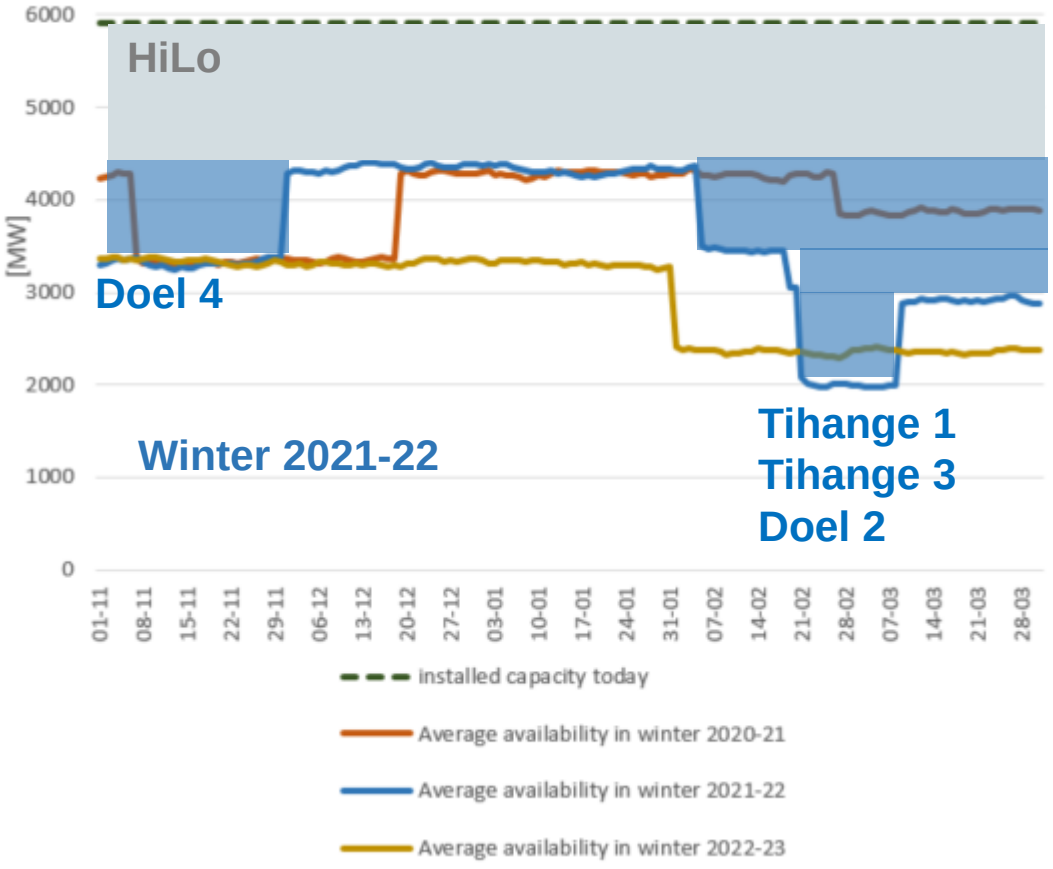


Multiple components make up the nuclear availability:

- **Forced outages:** a forced outage rate of 3.7% is applied
- **Planned outages:** announcements from REMIT are applied for BE + FR. Statistical modelling elsewhere.
- **Additional outage:** in the ‘low probability high impact’ sensitivity 1.5GW is out in BE and 3.6GW is out in FR
- **Nuclear Phase-out:** taken into account in winter 2022-23

All three winters will have FO + PO + 1.5GW to be as consistent as possible

Nuclear availability

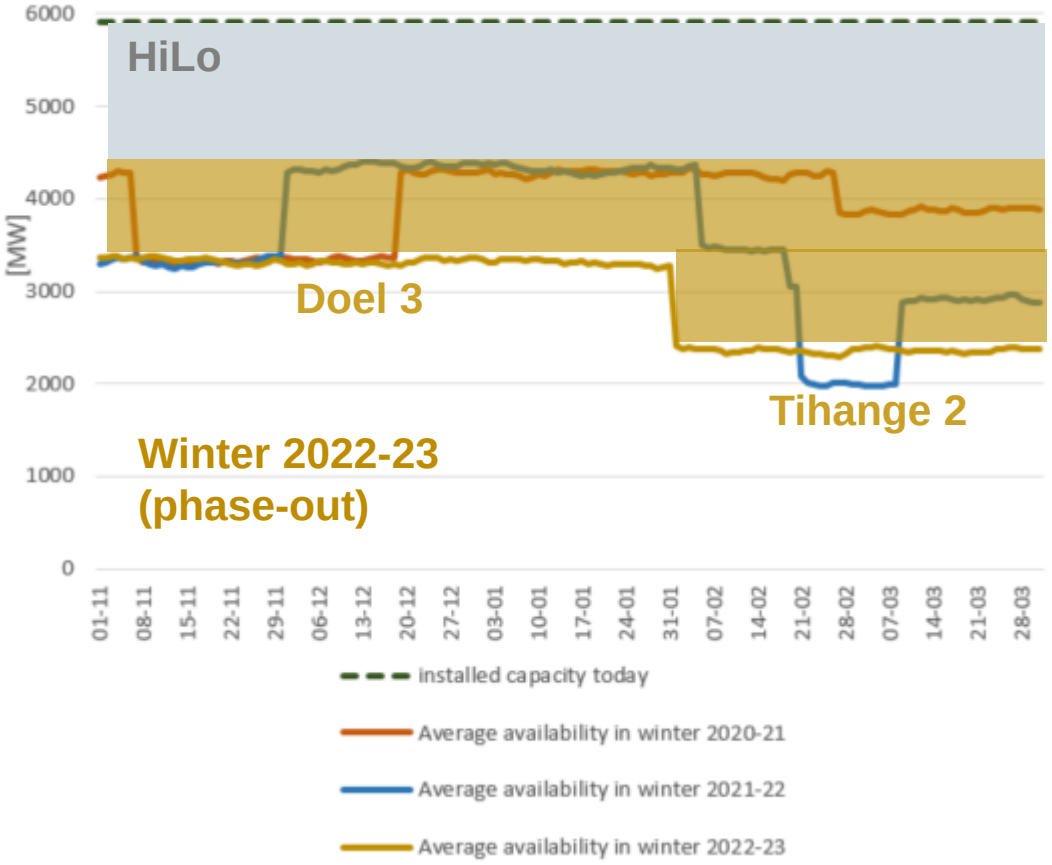


Multiple components make up the nuclear availability:

- **Forced outages:** a forced outage rate of 3.7% is applied
- **Planned outages:** announcements from REMIT are applied for BE + FR. Statistical modelling elsewhere.
- **Additional outage:** in the ‘low probability high impact’ sensitivity 1.5GW is out in BE and 3.6GW is out in FR
- **Nuclear Phase-out:** taken into account in winter 2022-23

All three winters will have FO + PO + 1.5GW to be as consistent as possible

Nuclear availability



Multiple components make up the nuclear availability:

- **Forced outages:** a forced outage rate of 3.7% is applied
- **Planned outages:** announcements from REMIT are applied for BE + FR. Statistical modelling elsewhere.
- **Additional outage:** in the ‘low probability high impact’ sensitivity 1.5GW is out in BE and 3.6GW is out in FR
- **Nuclear Phase-out:** taken into account in winter 2022-23

All three winters will have FO + PO + 1.5GW to be as consistent as possible

Results for winter 2020-21

winter 2020-21	Base Case								
	AVERAGE	P95	MAX		AVERAGE	P95	MAX
LOLE [h]	<0h30	1h00	29h	Amount of activation	0.1	1	10
ENS [GWh]	0.1	0.05		Activation lenght [h]	2.4	7	16
Need or Margin [MW]	-3200						

winter 2020-21	Sensitivity with 1.5GW nuclear out in Belgium and 3.6GW nuclear out in France								
	AVERAGE	P95	MAX		AVERAGE	P95	MAX
LOLE [h]	2h45	11h00	97h	Amount of activation	0.8	4	19
ENS [GWh]	1.5	2.8		Activation lenght [h]	3.4	10	28
Need or Margin [MW]	-100						

A 100MW margin is confirmed by means of a full stochastic analysis.

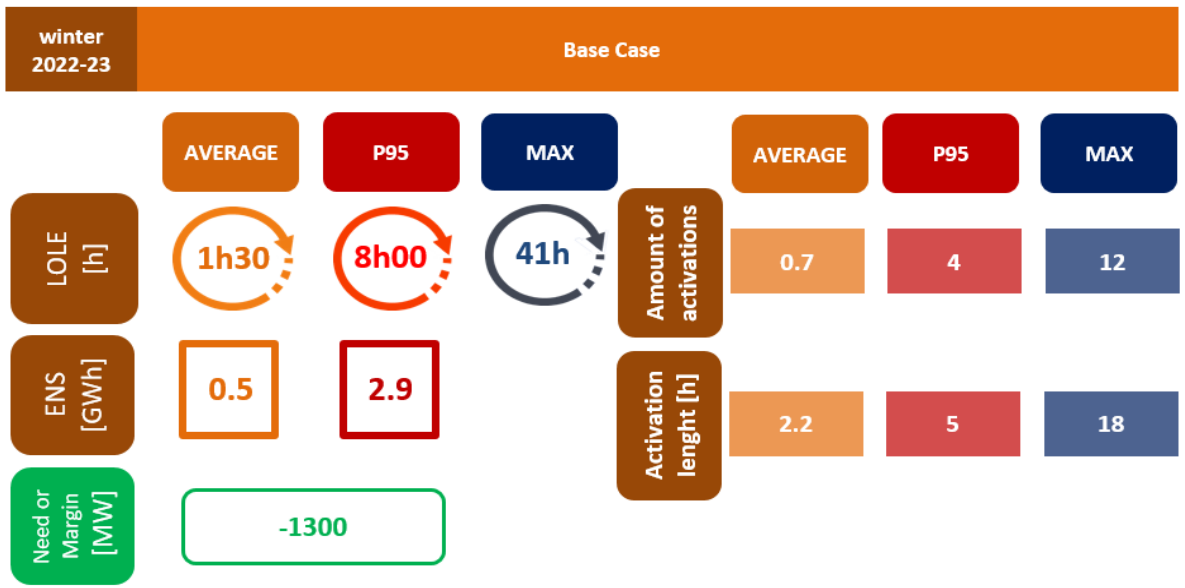
Results for winter 2021-22

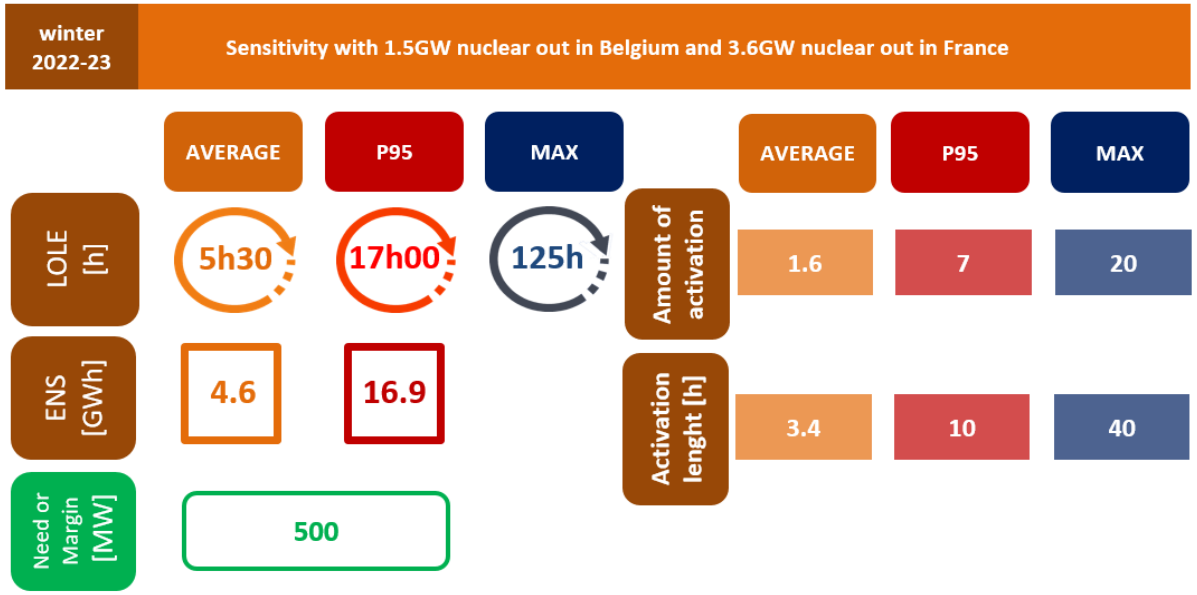
winter 2021-22	Base Case	AVERAGE	P95	MAX	AVERAGE	P95	MAX
LOLE [h]		<0h30	2h00	35h	Amount of activations	0.2	1	10
ENS [GWh]		0.1	0.2		Activation lenght [h]	2.1	5	13
Need or Margin [MW]		-2800						

winter 2021-22	Sensitivity with 1.5GW nuclear out in Belgium and 3.6GW nuclear out in France	AVERAGE	P95	MAX	AVERAGE	P95	MAX
LOLE [h]		2h30	12h00	102h	Amount of activation	0.9	5	18
ENS [GWh]		1.3	3		Activation lenght [h]	2.9	9	38
Need or Margin [MW]		-200						

A 200MW margin is found for winter 2021-22

Results for winter 2022-23

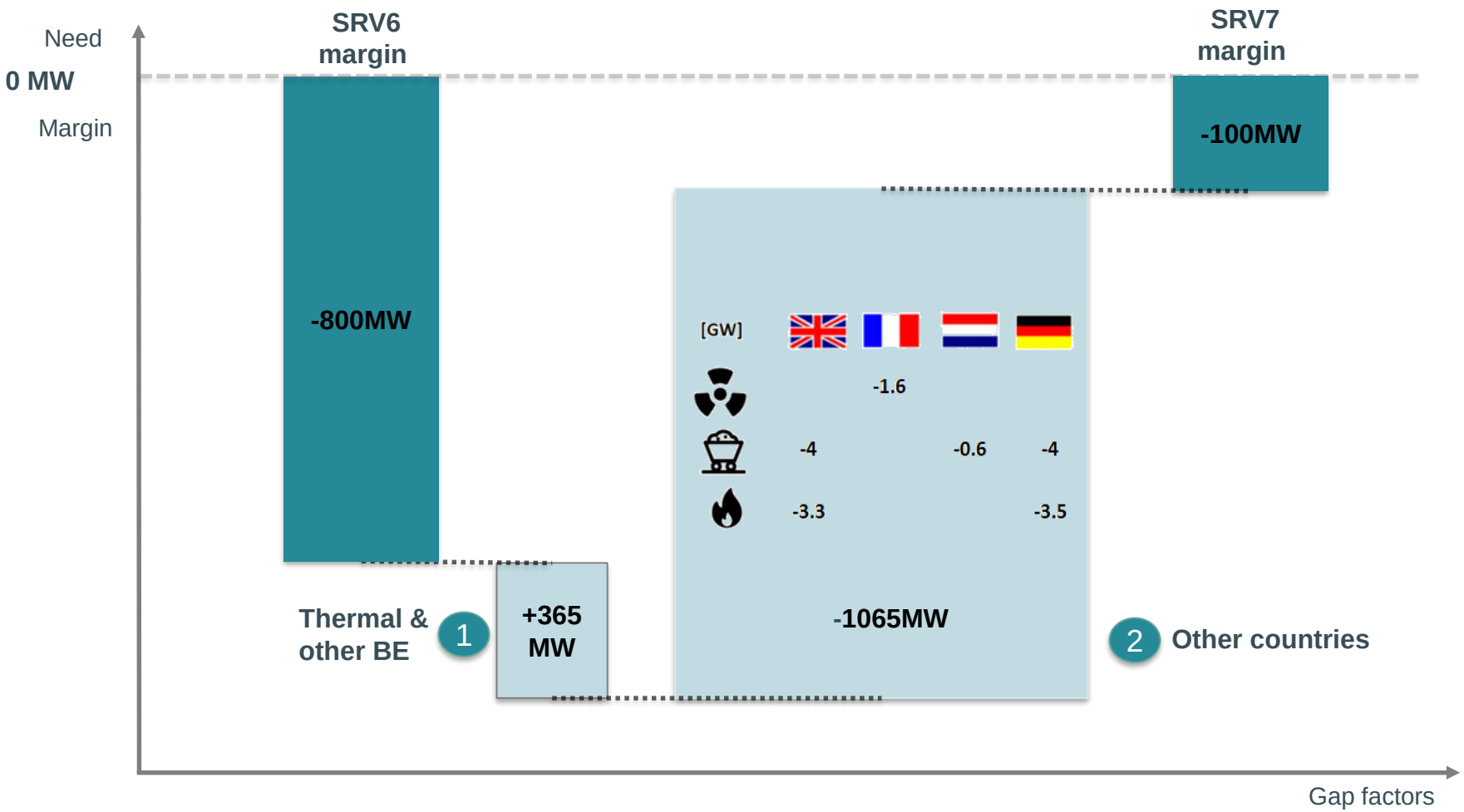




A 500MW strategic reserve volume need is found for winter 2022-23

Comparison to SRV6 outlook winter 2020-21

Results HiLo comparison SRV7 vs SRV6[1]

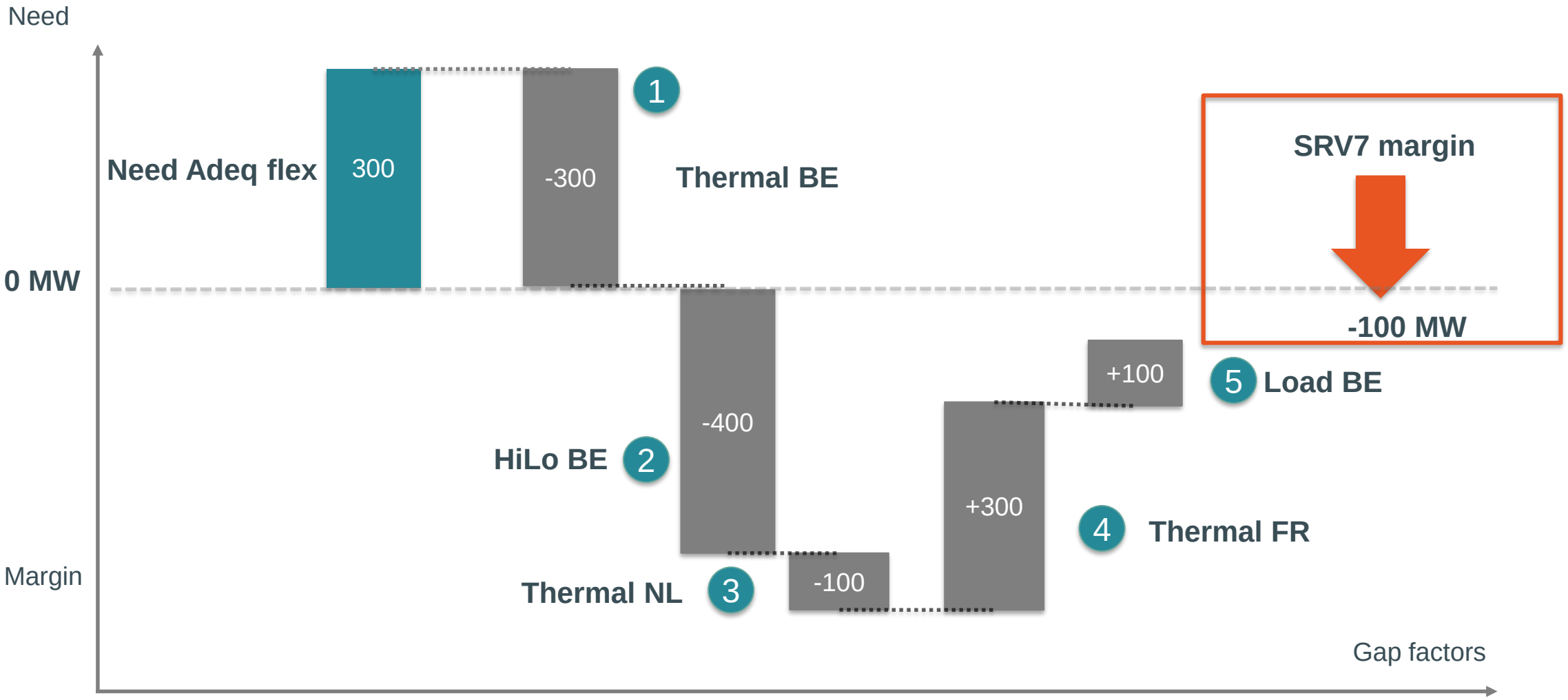


- Awirs: -75MW
- Seraing: -16MW
- Vilvoorde: +255MW
- Monsanto: +43MW
- TJ Deuxa: +18MW
- TJ Volta: +18MW
- HAM CCGT: +52MW
- Angleur TG3: +50MW
- Izegem: +20MW

[1] The numbers presented in this slide are meant to give the trend to explain the differences between studies, as no individual sensitivity was ran, consider the numbers given here as indicative rather than exact values

Comparison to AdeqFlex 2019

Results HiLo comparison SRV7 vs Adeqflex [1]



[1] The numbers presented in this slide are meant to give the trend to explain the differences between studies, as no individual sensitivity was ran, consider the numbers given here as indicative rather than exact values

Thank you.