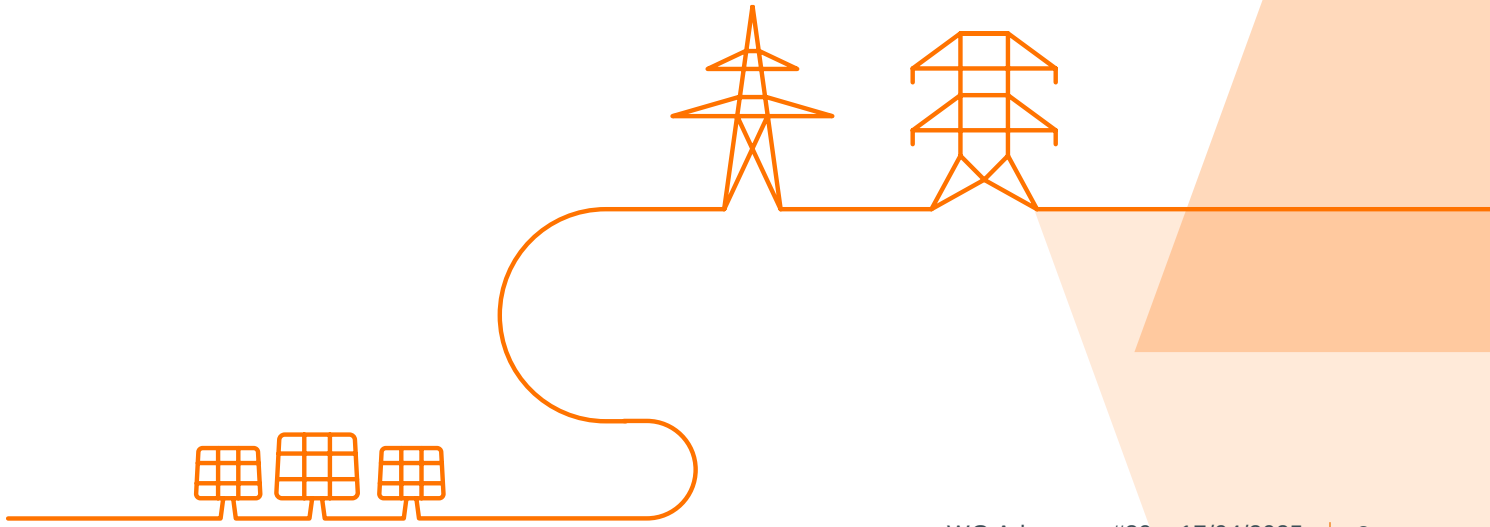
WG Adequacy #39

17/04/2025

Agenda

- Welcome
- Validation Meeting Minutes
- Scenarios for the calibration of ’26 auctions
- AMT price publication
- Capacity contract changes
- 2025 auction's parameters by FPS Economy
- AOB & Next meetings



Welcome

Validation meeting minutes

Meeting Minutes WG Adequacy #38 (21/02/2025)

- No comments were received

CRM information

Info sessions

CRM information
Info Sessions

Elia organized different info sessions in the previous weeks

- General Info Sessions
  - 12/02/2025
  - 03/03/2025
- Detailed Info Sessions
  - 25/03/2025
  - 10/04/2025 : cancelled due to limited number of participants
- XB CRM Info Session
  - 03/03/2025

➔ In total around 50 attendees to all sessions, coming from 20 companies.

➔ Presentations are available on Elia's website: Capacity Remuneration Mechanism

Feedback?

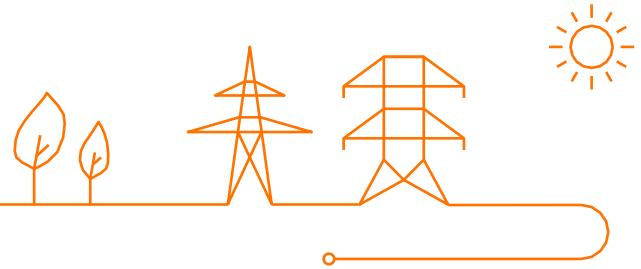
Contact us via:
taskforce.CRM@elia.be

Scenario’s for the ’26 CRM auctions

Scenario, data and sensitivities for
2027-28/Y-1, 2028-29/Y-2 and 2030-31/Y-4

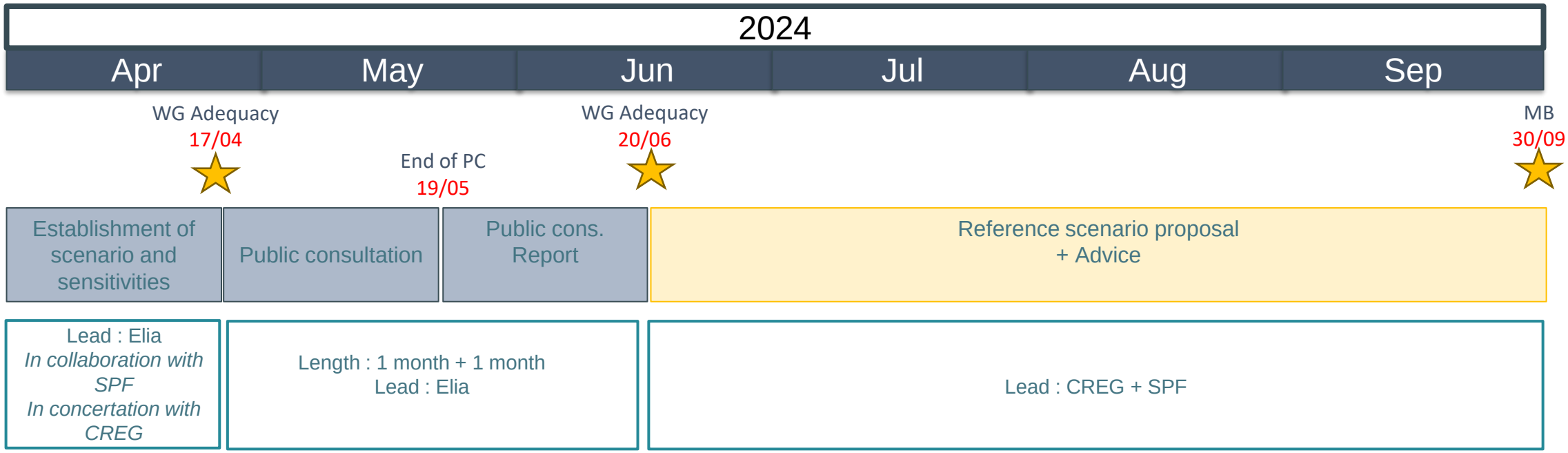
Agenda

- Planning
- Public consultation – Royal Decree framework
- Scenario & sensitivities – How are they constructed ?
- Scenario dataset
- Updates for neighboring countries
- Sensitivities
- Other parameters to be consulted



Planning

Indicative Planning for scenario process



- The scenario and sensitivities proposed today have been established by Elia in collaboration/concertation with FPS Economy and CREG.
- The public consultation will start today for a period of 1 month, ending Monday 19th of May included.
- Following the public consultation, a second Working Group Adequacy will take place in order to present the public consultation report and Elia's recommendations.

Public consultation – RD framework

Context : Royal Decree framework

Art. 5. § 1er. Le gestionnaire de réseau organise une ou plusieurs consultations publiques conformément à l'article 7undecies, § 3, alinéa 3, de la loi du 29 avril 1999 durant une période de minimum un mois. Le gestionnaire du réseau informe les acteurs de marché de la tenue de cette (ces) consultation(s). § 2. Au moins les sujets suivants sont soumis à une consultation publique : 1° la mise à jour des données et des hypothèses du scénario ou des scénarios, ainsi que des sensibilités, telles que visées à l'article 3, § 3 ; 2° la pertinence des sensibilités visées à l'article 3, §4, en ce compris les données et hypothèses à partir desquelles elles ont été établies ; 3° le type de capacité supplémentaire visé à l'article 6, § 1er ; 4° les sources publiques des scénarios pour les années postérieures à l'année de livraison à partir desquelles les données d'entrée sont utilisées pour le calcul des rentes inframarginales annuelles visées à l'article 10, §6 ; 5° la liste réduite des technologies existantes qui seront raisonnablement disponibles et qui sont éligibles pour la détermination du prix maximal intermédiaire visé à l'article 18, §1er.	Art. 5. § 1. De netbeheerder organiseert een of meerdere openbare raadpleging(en) met het oog op de opmaak van zijn verslag en zijn voorstel bedoeld in artikel 7undecies, § 3, derde lid van de wet van 29 april 1999, gedurende een periode van ten minste één maand. De netbeheerder informeert de marktdeelnemers over het houden van deze raadpleging(en). § 2. De volgende onderwerpen worden ten minste aan openbare raadpleging onderworpen: 1° de actualisatie van de gegevens en hypothesen van het scenario of de scenario's en de gevoeligheden zoals bedoeld in artikel 3, § 3; 2° de relevantie van de gevoeligheden bedoeld in artikel 3, § 4, inclusief de gegevens en hypothesen waaruit ze zijn opgebouwd; 3° het type bijkomende capaciteit bedoeld in artikel 6, § 1; 4° de publieke bronnen van de scenario's voor de jaren na het leveringsjaar waaruit de invoergegevens gebruikt worden voor de berekening van de jaarlijkse inframarginale inkomsten, bedoeld in artikel 10, § 6; 5° de beperkte lijst van bestaande technologieën die redelijkerwijs beschikbaar zullen zijn, en die in aanmerking komen voor de bepaling van de intermediaire maximumprijs, bedoeld in artikel 18, §1.

Context : Royal Decree framework

The first part of this presentation will introduce the **data and assumptions associated with the scenario**, as mentioned in article 3, §2 of the RD.

The second part of this presentation will introduce the **proposed updates according to latest relevant information**, as mentioned in article 3, §3 of the RD.

The third part of this presentation will present the **proposed sensitivities, their source and the impact on the input data**, as mentioned in article 3, §4 of the RD.

The last part of this presentation is dedicated to three other parameters that will be part of the public consultation :

- **Preselected capacity types** (in order to make the reference scenario adequate)
- The **sources of the scenarios** for the determination of market revenues **after the delivery period**
- The **IPC parameters**

Scenario & Sensitivities – How are they constructed ?

The reference scenario for 2027-28/Y-1, 2028-29/Y-2 and 2030-31/Y-4 is constructed based the most recent ERAA complemented with additional events to be selected by Belgian authorities after public consultation

Art. 3. § 1er. Le gestionnaire de réseau effectue, en collaboration avec la Direction générale de l'Energie et en concertation avec la commission, une sélection d'un ou de plusieurs scénarios et sensibilités selon les étapes décrites à l'article 3, §§2 à 4 inclus.

ERAA 24

Scenario components

Data for Belgium is based on projections between historical data and regional or national targets, national and European policies, and external studies. Regions and DSO have been consulted on the data.

Data for the other countries are based on the ERAA 24 and updated with most recent national adequacy studies and other relevant sources.

Flow based domains are constructed for the Central Europe CCR region, based on TYNDP 2024.

Price projections will be updated based on latest projections and on the latest 'World Energy Outlook' published end of 2025 if necessary.

For Belgium and 27 other countries

§ 2. A partir de l'évaluation européenne, visée à l'article 23 du Règlement (UE) 2019/943, et / ou de l'évaluation nationale visée à l'article 24 du Règlement (UE) 2019/943, les plus récemment disponibles au moment de la sélection, un ou plusieurs scénarios et sensibilités sont sélectionnés. Cette sélection comprend au moins le scénario de référence central européen visé à l'article 23, 1er alinéa, 5, b) du Règlement (UE) 2019/943. Tant que lesdites évaluations ne sont pas encore disponibles, une sélection est effectuée à partir d'autres études disponibles.

§ 3. Les données et hypothèses à partir desquelles lesdits scénarios et sensibilités ont été établis, sont mises à jour sur la base des informations pertinentes les plus récentes.

The reference scenario for 2027-28/Y-1, 2028-29/Y-2 and 2030-31/Y-4 is constructed based the most recent ERAA complemented with additional events to be selected by Belgian authorities after public consultation

Following Article 3, §2-3

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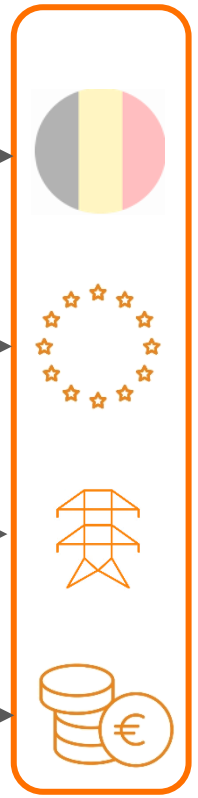
Scenario components



For Belgium and 27 other countries

Following Article 3, §4

Additional sensitivities to be included

- Sens. 1
- Sens. 2
- Sens. 3
- Sens. 4
- Sens. 5
- Sens. 6

List of sensitivities on all scenario components are possible

§ 4. En outre, d'autres sensibilités peuvent être définies, lesquelles peuvent avoir un impact sur la sécurité d'approvisionnement de la Belgique, notamment des évènements en dehors de la zone de réglage belge.

The reference scenario for 2027-28/Y-1, 2028-29/Y-2 and 30-31/Y-4 is constructed based the most recent ERAA complemented with additional events to be selected by Belgian authorities after public consultation

Following Article 3, §2-3

ERAA 24

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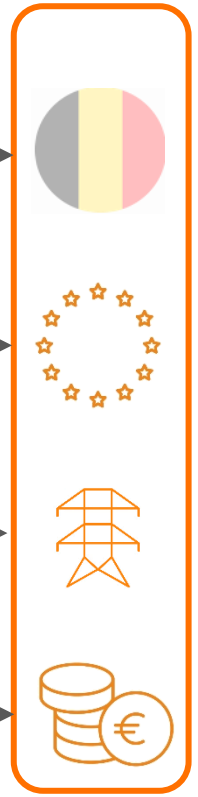
Scenario components



For Belgium and 27 other countries

Following Article 3, §4

Additional sensitivities to be included

+

- Sens. 1
- Sens. 2
- Sens. 3
- Sens. 4
- Sens. 5
- Sens. 6

List of sensitivities on all scenario components are possible

Following Article 3, §6-7

Sensitivity(ies) to be included in the reference scenario

EXAMPLE

Sens. 2

Sens. 4

The choice of the sensitivities to be included in the reference scenario is made following the process described in the RD and after public consultation.

§ 7. Compte tenu de la proposition de la commission, des recommandations du gestionnaire du réseau et de l'avis de la Direction générale de l'Energie, le Ministre décide, par arrêté délibéré en Conseil des ministres depuis la décision prise en 2021, au plus tard le 15 septembre de l'année précédant les enchères, de l'ensemble des données et des hypothèses qui doit être sélectionné comme scénario de référence. Le Ministre peut déroger à la proposition de la commission moyennant motivation adéquate.

What elements of the reference scenario will be submitted to public consultation ?

Details for each scenario component will be provided in an Excel file complemented with an explanatory note

- Generation and storage capacities per type (including a list of all thermal units with daily schedule)
- Forced outage rates per technology
- Electricity consumption in Belgium
- Demand-side response
- Balancing reserves volume

- A reference to the ERAA 24 dataset for other countries will be given (detailed Excel with all information as published by ENTSO-e targeting 2026, 2028, 2030 and 2035, no data for other time horizon are available)
- Updates based on latest publications

- A reference to the ERAA 24 dataset will be given with the NTCs used (outside of the FB zone)
- In addition, FB domains parameters and underlying assumptions will be provided

- Fuel and CO_2 prices

- Proposal of sensitivities

§5. Les scénarios et sensibilités sélectionnés, en ce compris les données et hypothèses à partir desquelles ils ont été établis, sont soumis à une consultation publique telle que visée à l'article 5.

Explanatory note

Assumptions Workbook with all data

Other parameters will also be consulted upon:
- *technology list and costs by technology for the IPC, including efficiency and VOM ranges for the marginal cost calculation;*
- *scenario choice for delivery period after the delivery period;*
- *pre-selected capacity types (to be used to 'calibrate' the country's adequacy if needed), including CAPEX, FOM & economic lifetime.*

Dataset for Belgium: How is it built for CRM scenarios 2025 ?

- The dataset for Belgium is based on the '**Current Commitment & Ambitions**' scenario from AdeqFlex'25
- This scenario was presented in the public consultation report and was adapted with the feedback received and presented end of February 2025 to the stakeholders.
- This scenario considers announced targets and policies. It follows projections from Bureau du Plan for macro-economic evolutions, NECP plans submitted by regions and federal, latest government agreements and industry electrification plans.
- As AdeqFlex'25 will consider (at least) three main scenarios, this consideration will be reflected in the CRM public consultation. 2 sensitivities will be proposed :
  - **Constrained transition**: considering poor macro-economic conditions potentially impacting affordability of the energy transition, impacting new grid & RES projects and decarbonization of the industry. Considering deglobalization and scarce supply chain, delay of some policies (e.g. ETS2) and limited public acceptance for grid & wind projects. This is translated into slower uptake of EV & HP and reduced and slower industry electrification, including some industry closures , slower uptake of end-user flexibility, and delayed realisation of RES and grid projects.
  - **Prosumer power**: considering current trends related to prosumers accelerate further, with prices that continue to further decrease for PV, batteries, EV,… making them even cheaper and more accessible. A quicker transition to heat pumps, not only in new constructions but also across the existing building stock. It considers more residential flexibility. Other targets and ambitions are kept similar to 'Current commitments & ambitions' (e.g. industry load, onshore/offshore wind).

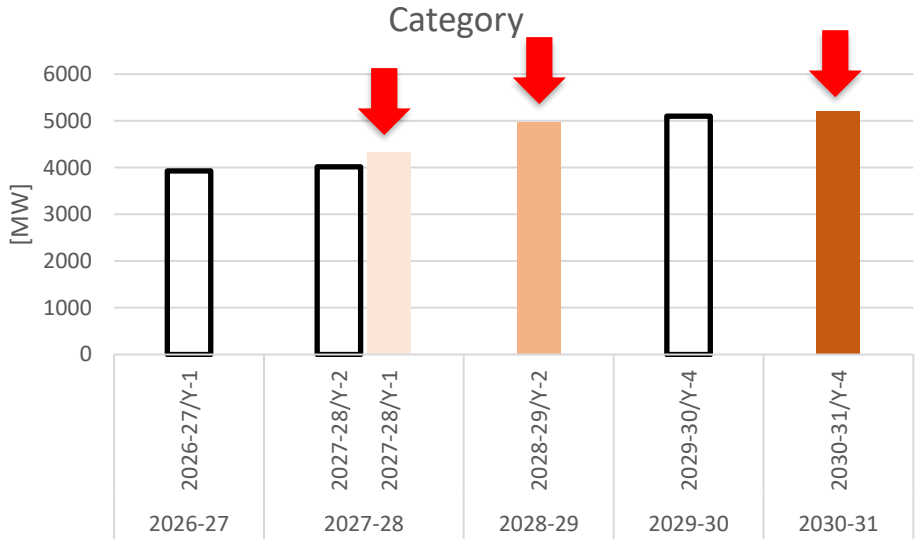
Scenario dataset

Information regarding following slides

- Sensitivities will be mentioned in the document this way:

Sensitivity XXX - xxxxxxxxxxxxxxxxxxxxxxxxxx

- Dataset will be presented and compared to the previous auctions this way



Dataset for the proposed scenario for 2027-28/Y-1, 2028-29/Y-2 and 2030-31/Y-4 will be compared with the scenario determined for 2026-27/Y-1, 2027-28/Y-2, and 2029-30/Y-4 defined by the Minister in Sep. 2024

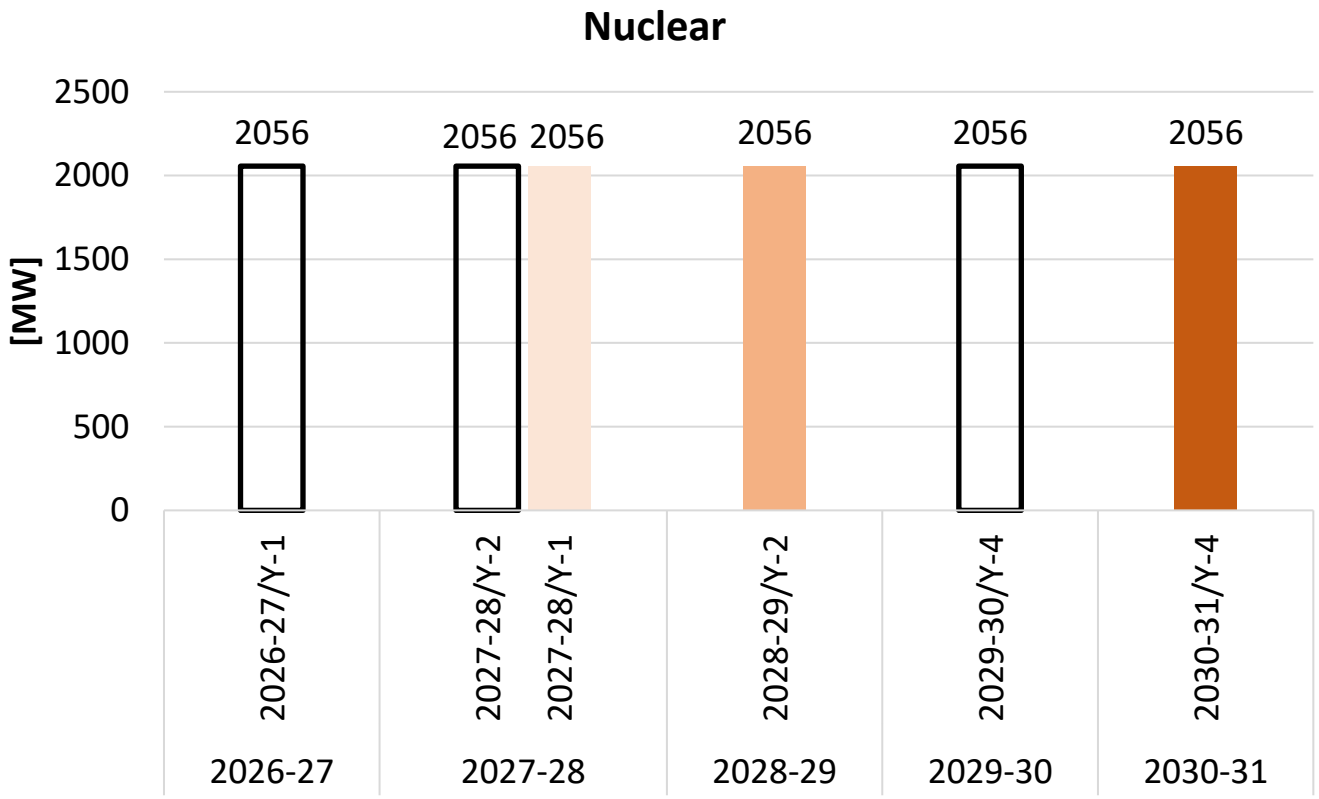
Arrows indicate the value proposed for scenario to be used in the next calibration report

Scenario components

Overview of nuclear generation installed capacities

No update foreseen on the nominal power of Doel 4 and Tihange 3.

In 2027, both nuclear units will be available in the winter only as stated on NordPool



A sensitivity is foreseen concerning the extension of Tihange 1

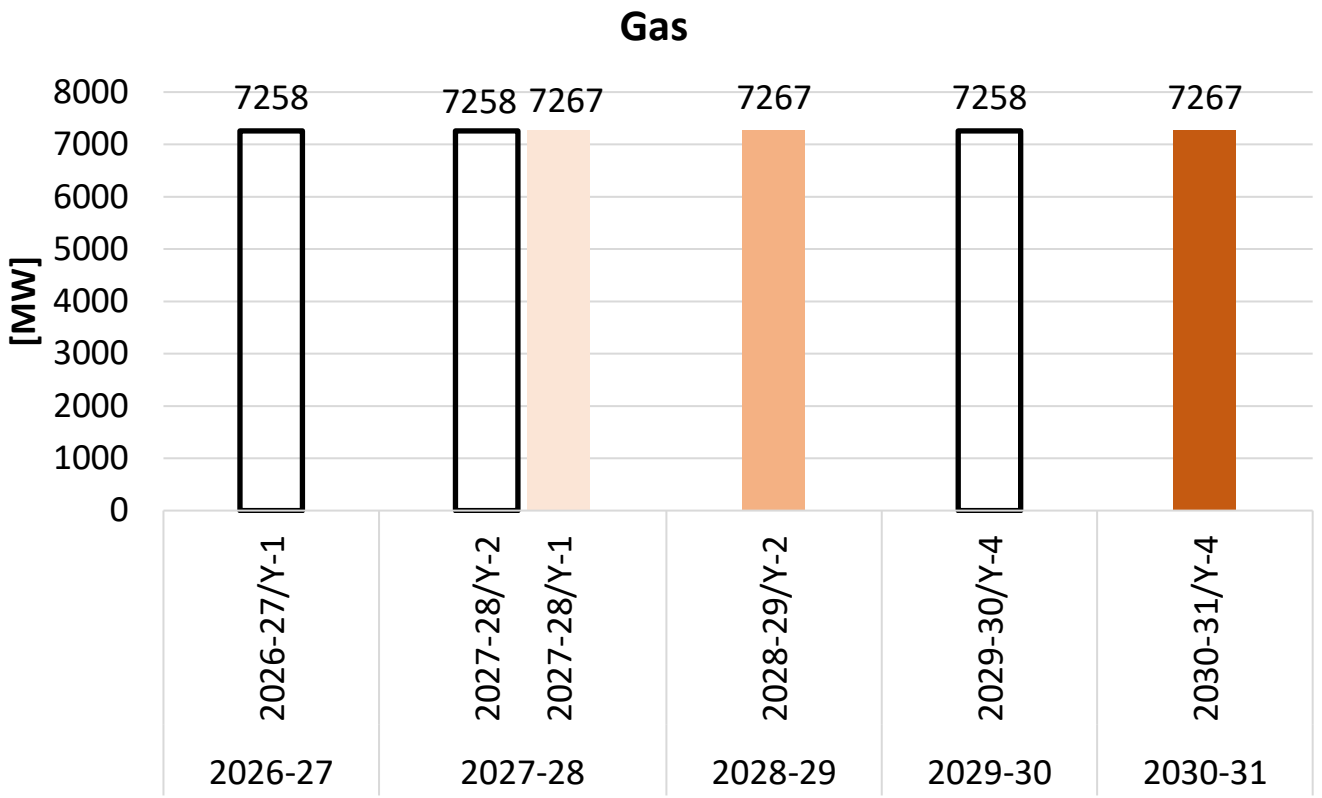
Article 3, §2 & 3

Scenario components

Overview of gas generation installed capacities

No update foreseen for gas except for:

- Vilvoorde GT: 255 MW -> 264 MW as stated on NordPool

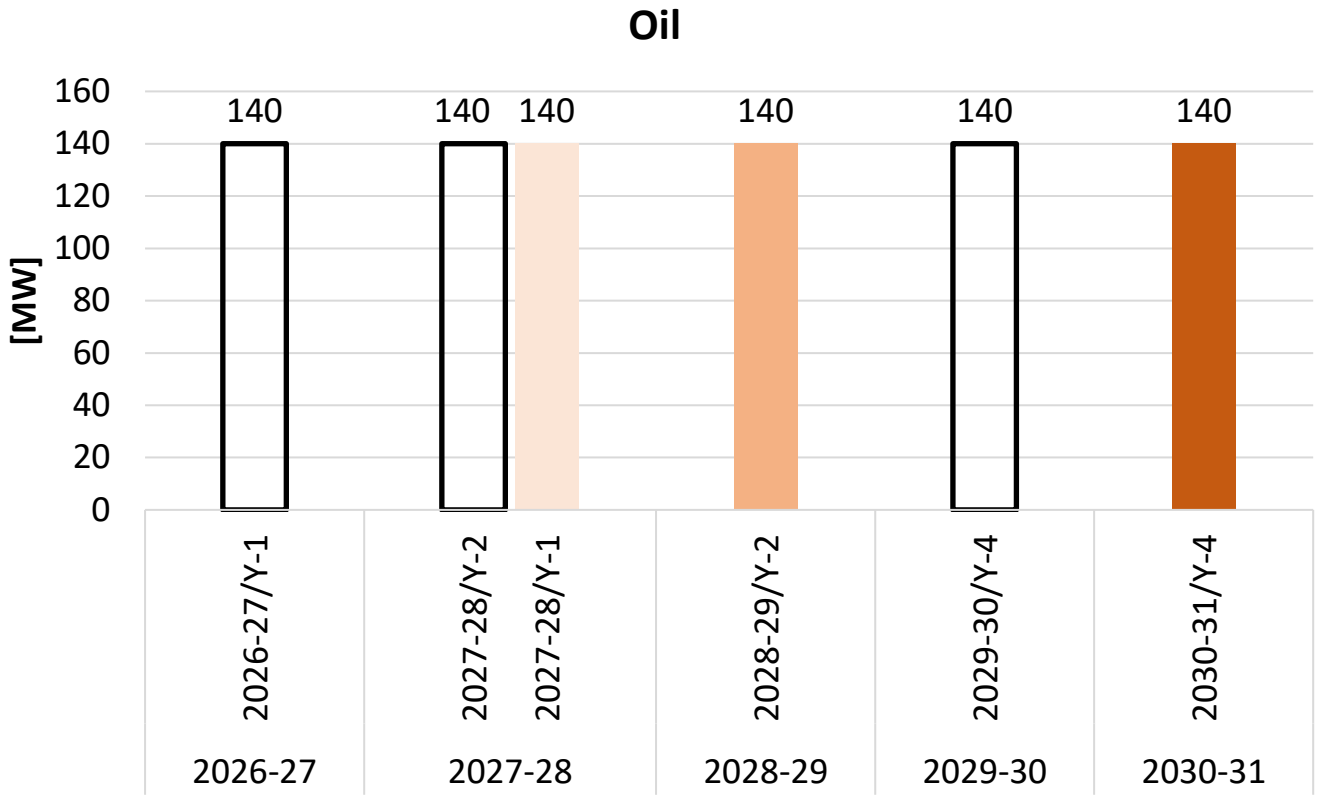


Article 3, §2 & 3

Scenario components

Overview of oil generation installed capacities

No update foreseen



A sensitivity is foreseen on uncertainties regarding closure of TJ due to the CO_2 threshold.

Article 3, §2 & 3

Scenario components

Storage

Pumped-storage

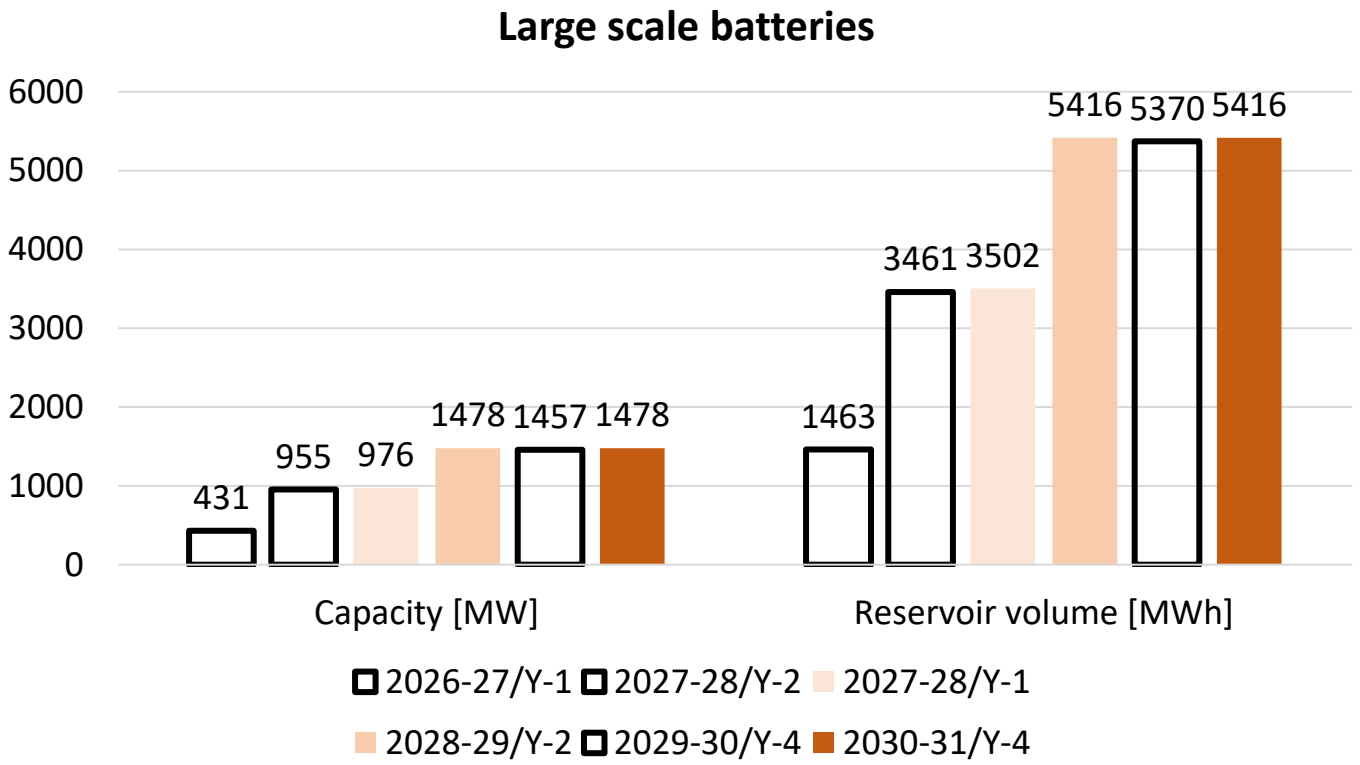
Assumptions regarding PSP don't change compared to last year and include extension works.
Turbining capacity = 1161 MW (Coo) + 144 MW (Platte-Taille)
Reservoir volume = 5600 MWh (Coo) – 500 MWh (black-start services) + 700 MWh (Platte-Taille)

Large-scale Batteries

Volume is equal to the sum of:

- Existing batteries
- batteries contracted in past CRM auctions

	Capacity [MW]	Energy content [MWh]
Existing	252	704
2027-28	624	2398
2028-29	502	1914



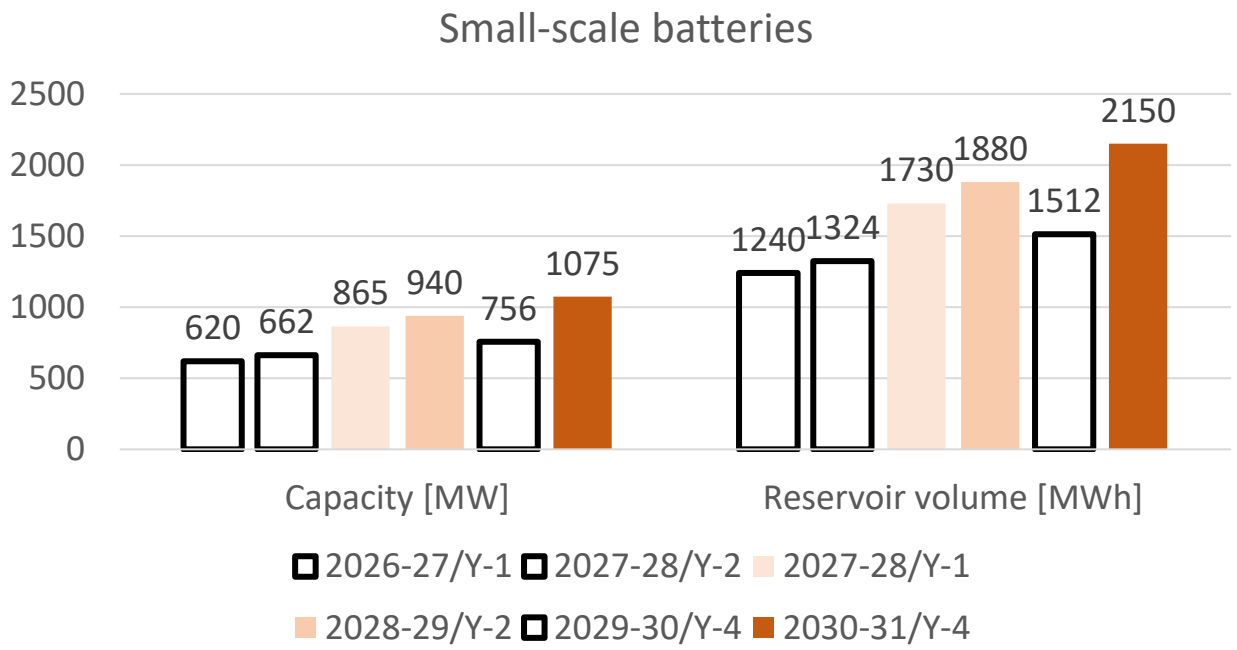
Article 3, §2 & 3

Scenario components

Storage

Small-scale batteries

- Aligned with regional assumptions, considering 200,000 batteries installed in 2030 for Flanders
- The expected drop in installation due to the end of subsidy was not observed, hence the increase in the trajectory.
- For Wallonia and Brussels: additional capacity = 0.3% of total installed PV capacity (compared to 0.2% in AdeqFlex'23)



	Proportion of small-scale batteries per category			
	2024	2027-28/Y-1	2028-29/Y-2	2030-31/Y-4
"in-the-market"	/	23%	35%	84%
"out-of-market"	/	77%	65%	16%

Different assumptions for small-scale batteries are considered in the sensitivity 'Constrained Transition Scenario' and 'Prosumer Power Scenario'.

Article 3, §2 & 3

Scenario components

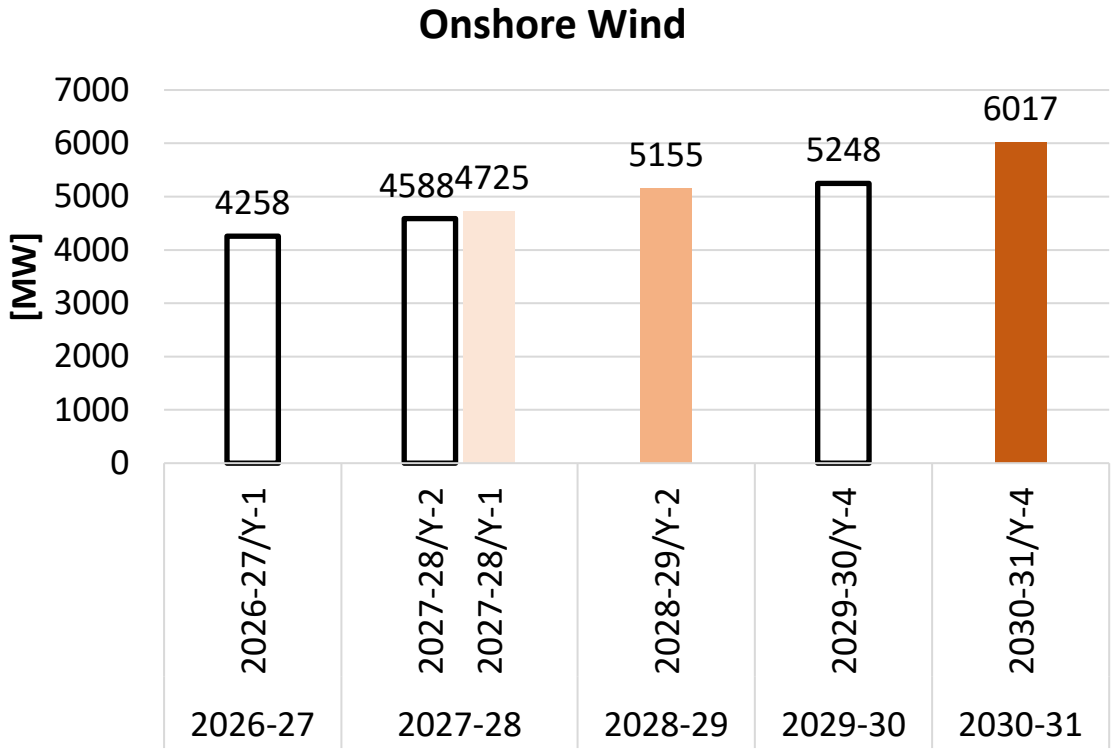
Overview of wind generation installed capacities

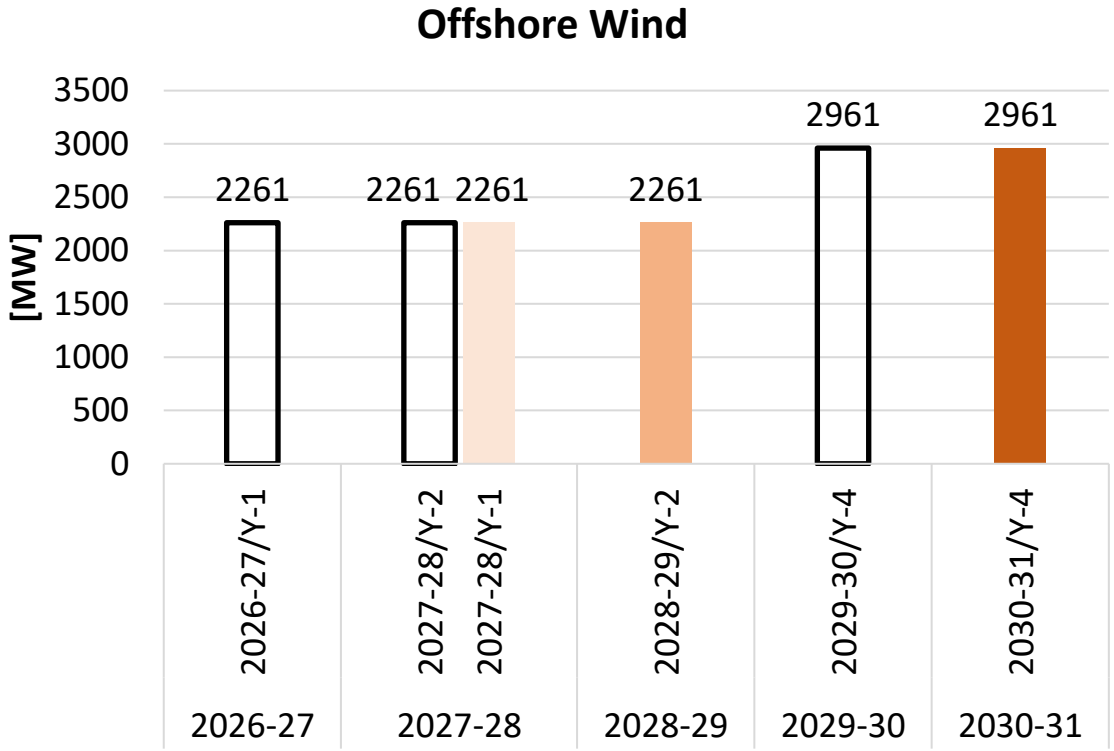
Wind onshore

- Trajectory based on regional targets

Wind offshore

- 700 MW of PEZ offshore wind (phase 1) fully operational by the winter of 2030-31





A delay in the realization of onshore projects is assumed in the 'Constrained Transition Scenario'

A sensitivity is foreseen concerning a delay in offshore trajectory

Article 3, §2 & 3

Scenario components

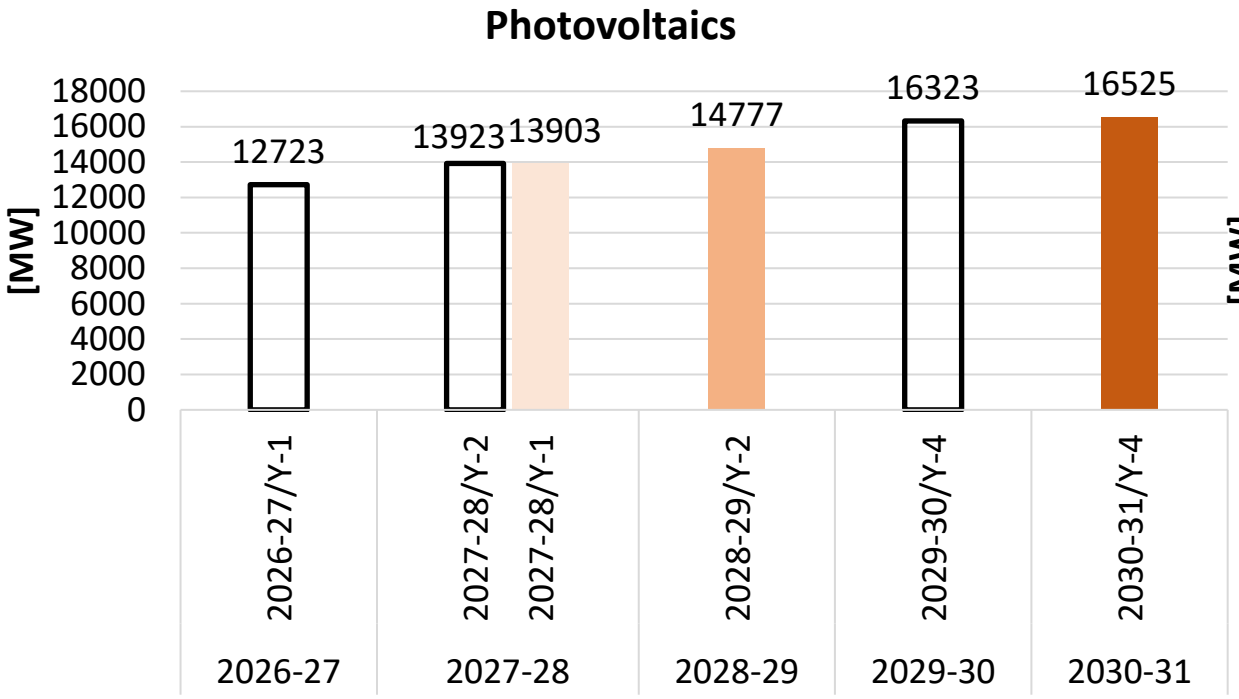
Overview of solar and hydro run off river generation installed capacities

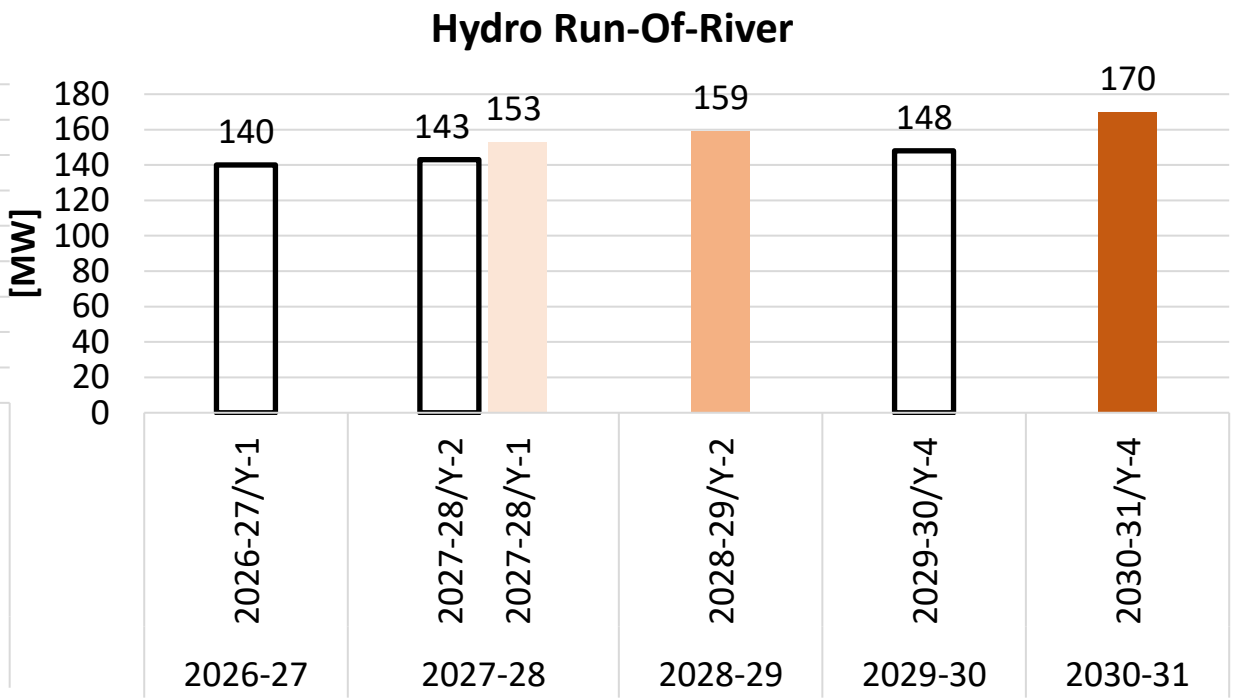
Photovoltaics

- Proposed to consider the installation rate of 900 MW/y (based on regional targets)

Hydro Run of River

- Trajectory based on the NECP objectives for 2030





A faster uptake of solar PV is assumed in the sensitivity 'Prosumer Power Scenario'

Article 3, §2 & 3

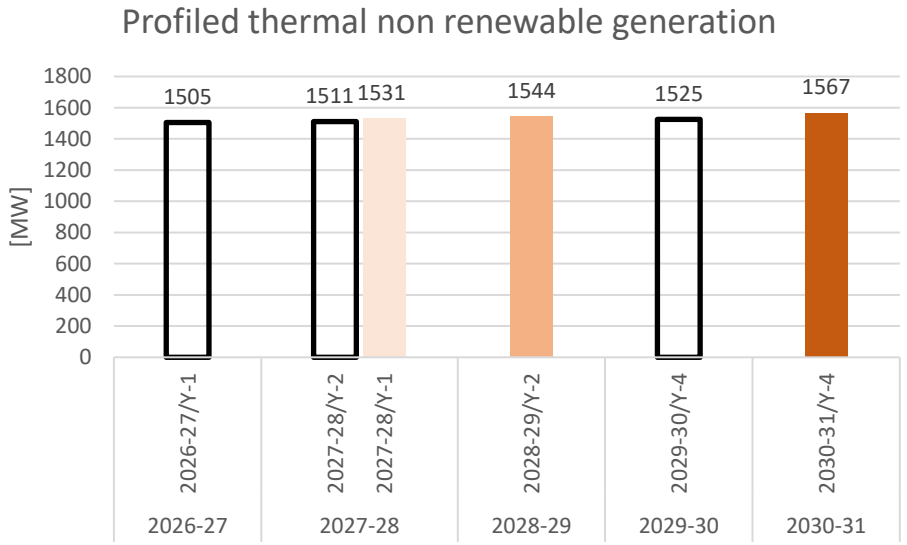
Scenario components

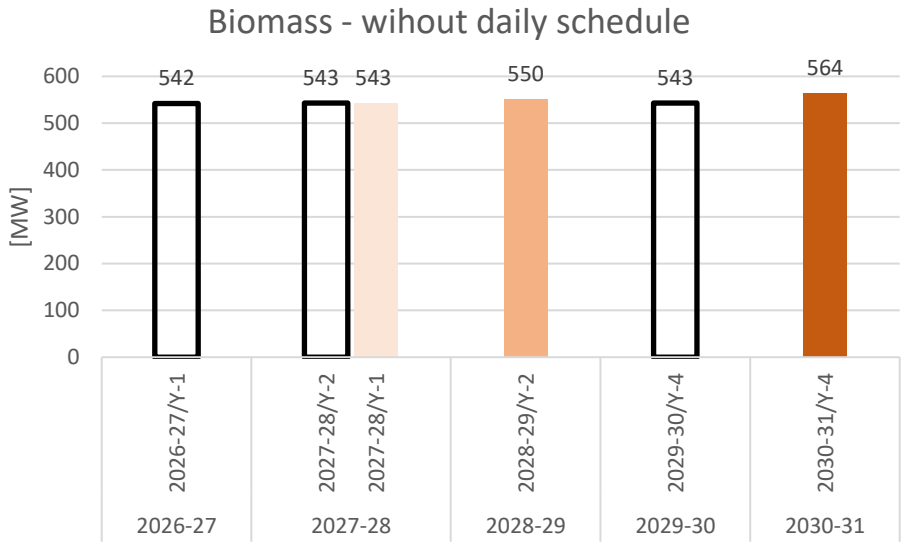
Overview of thermal units without daily schedule

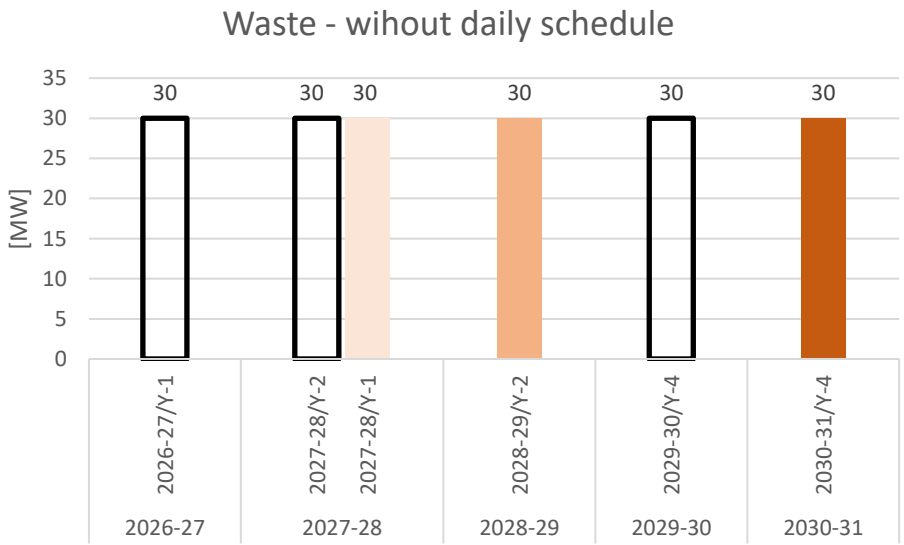
Thermal units without daily schedule

Based on Elia's internal database, taking into account last available information

- Dependence on DSO data quality
- Waste is considered constant
- Slight increase in ONR and Biomass







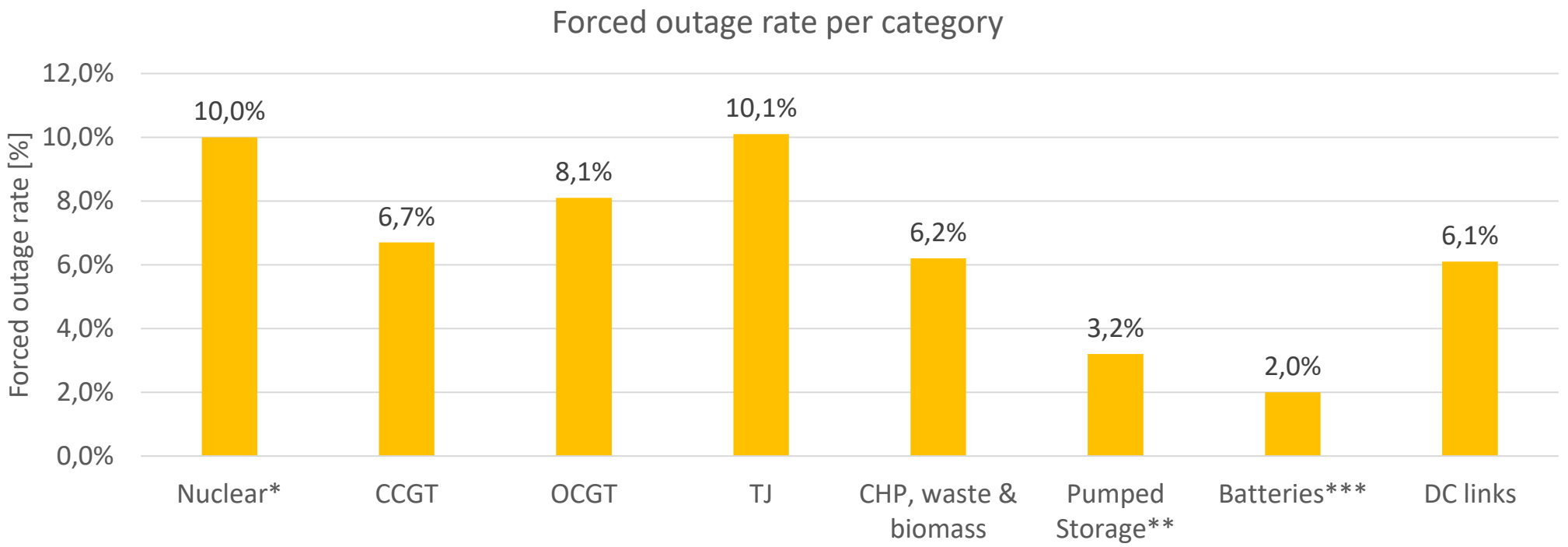
A sensitivity is foreseen concerning small-scale CHP capacity decrease

Article 3, §2 & 3

Scenario components

Forced-outage rates

The forced outages rates are based on an analysis on historical data from 2015-2023
The nuclear forced outage has been updated following the public consultation of the CRM last year



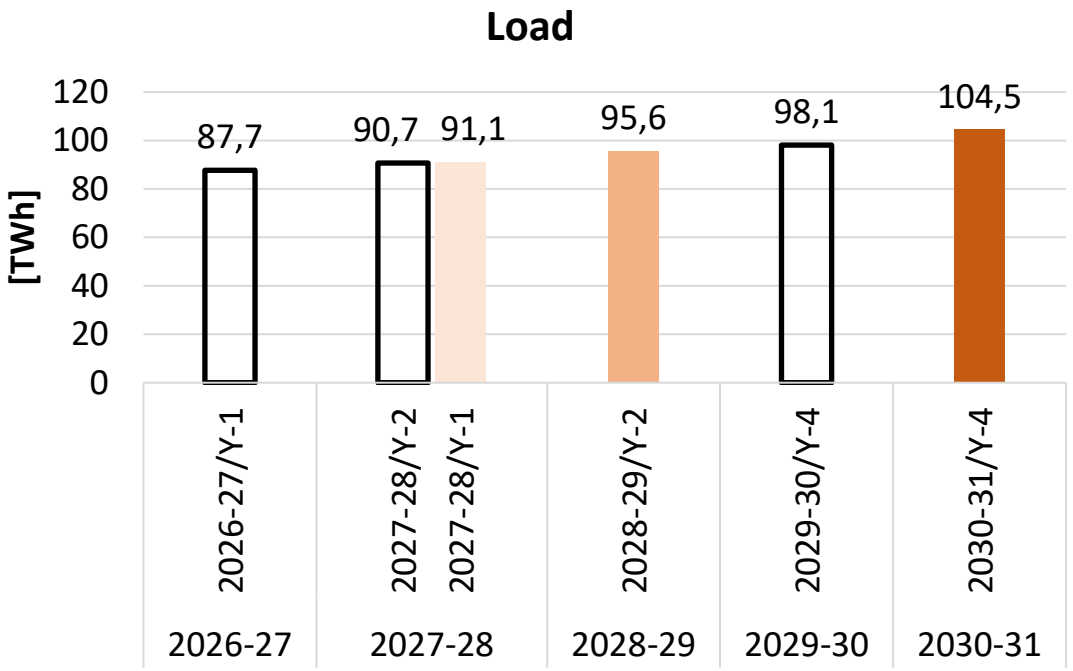
* Fixed at 10% based on last year reference scenario
** Calculated on Belgian units only
*** Regarding batteries, the forced outage rate is considered in the models by applying a derating factor on the installed capacity

Article 3, §2 & 3

Scenario components

Electricity consumption – total demand

- The trajectory is consistent with the latest ambitions and commitments
- The electricity consumption on the graph below corresponds to the reference scenario selected by the Minister
- More details about the demand are provided in the assumption workbook



		2027-28/Y-1	2028-29/Y-2	2030-31/Y-4
Existing Usages	[TWh]	82.3	82.3	82.3
Additional EV	[TWh]	3.3	4.6	7.5
Additional HP	[TWh]	0.6	0.8	1.3
New industrial electrification	[TWh]	4.2	7.0	12.1
Demand destruction - Industry at risk	[TWh]	0.0	0.0	0.0
Recovery - residential & tertiary	[TWh]	0.3	0.5	0.5
Additional Losses	[TWh]	0.4	0.5	0.8
Total electric demand	[TWh]	91.1	95.6	104.5

2 sensitivities are foreseen impacting the electricity consumption:
- **A 'Constrained Transition' Scenario**
- **A 'Prosumer Power' Scenario**

Article 3, §2 & 3

Scenario components

Demand-Side Response

1. **DSR from existing usages**
   - Update of value based on historical volumes to be presented during a future WG Adequacy.
   - DSR from existing usages was equal to 1732 MW in previous scenarios selected by the Minister.

2. **DSR volumes from newly electrified industry or new usages**
   - Flexibility associated with electrification assumptions from industrial heat-pumps, e-boilers, steel, CCS or datacenters

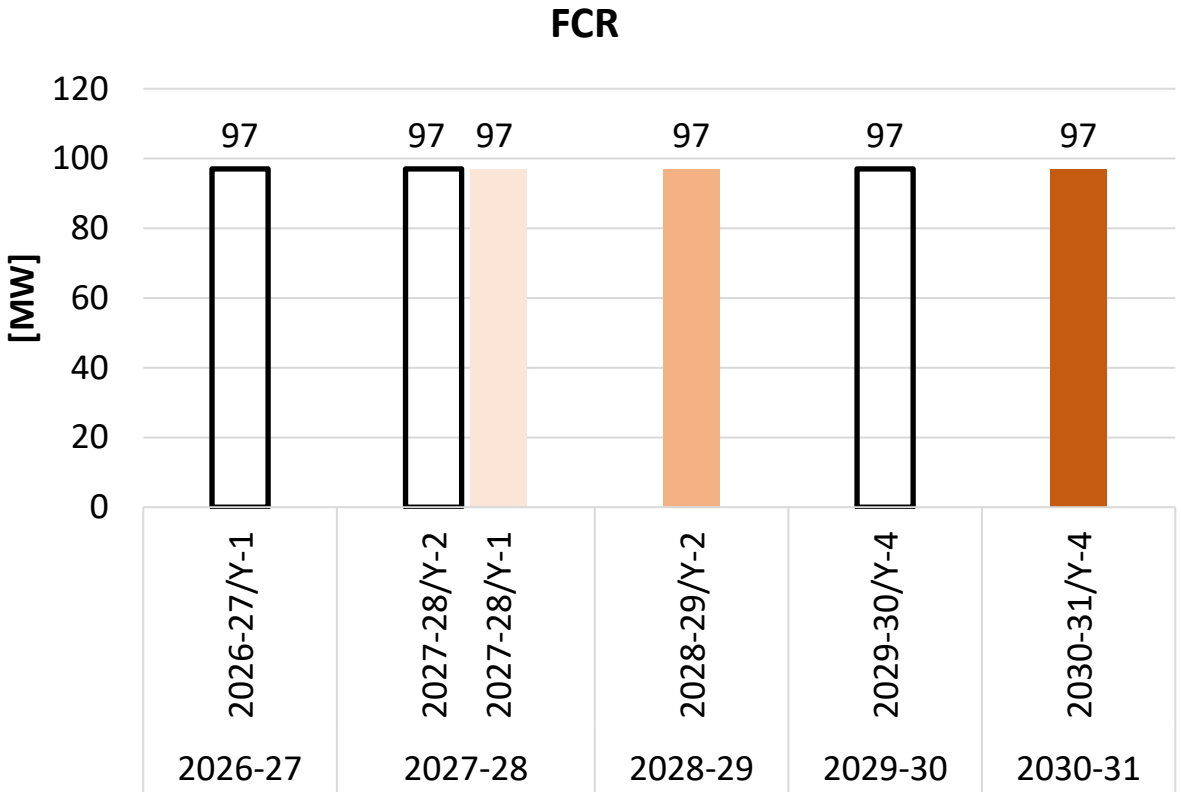
Additional DSR from industry electrification (shedding capacity)	% of the additional electrification by industry considered flexible 2027-28/Y-1 2028-29/Y-2 2030-31/Y-4
Electric ovens	80%
Electric boiler	75%
Heat pumps	40%
Electric arc furnace (EAF-DRI)	75%
Carbon capture and storage	0%
Datacentres	20%
Miscellanous and other processes	5%

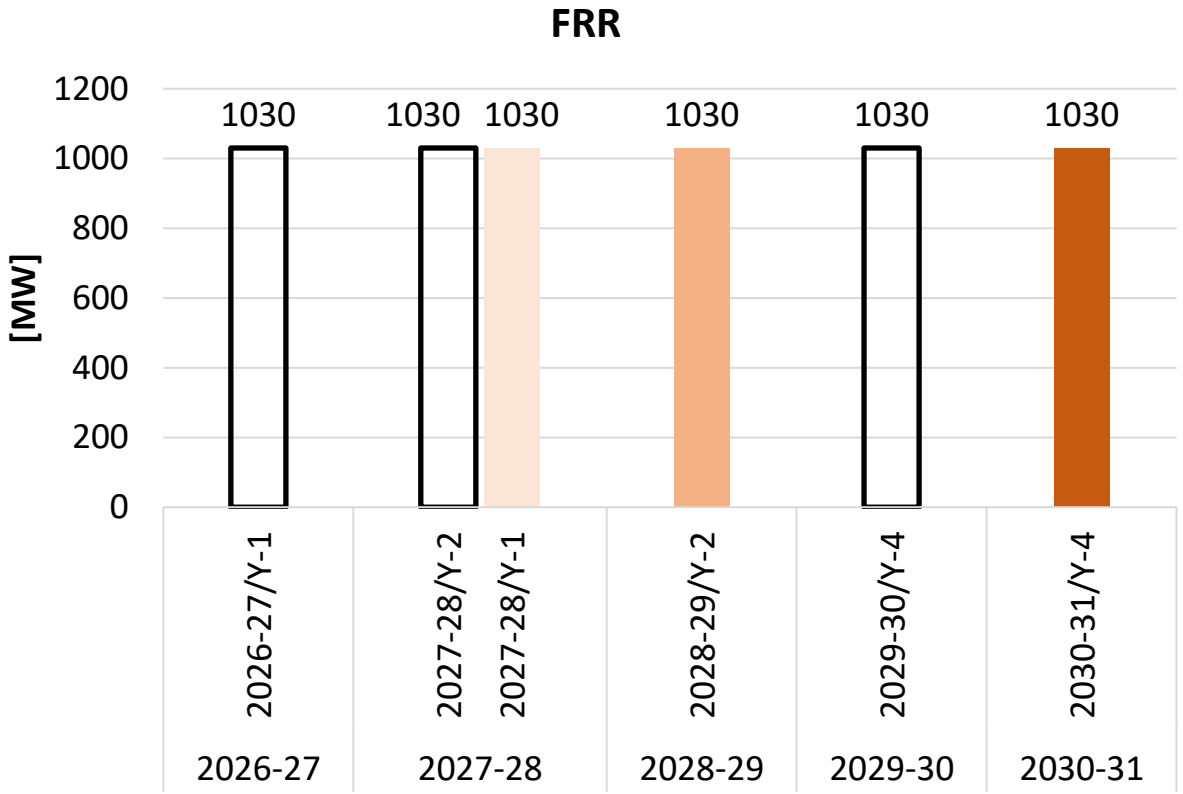
Article 3, §2 & 3

Scenario components

Overview of balancing capacities

No update on FCR and FRR capacities compared to last year.





Article 3, §2 & 3

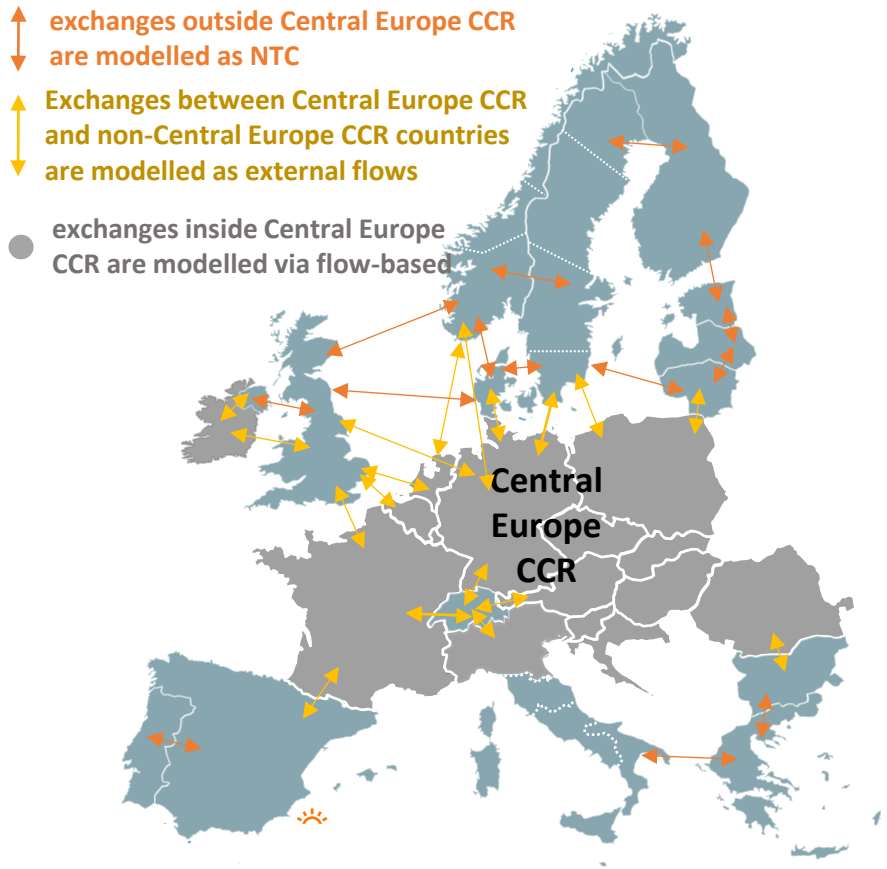
Flow-based perimeter and bidding zone definition

- This approach is identical to the one used for the Adequacy and Flexibility study 2023
- The bidding zones are assumed to be the same than the current one for all future time horizons.
- More detail about the flow-based modelling is available in the assumption workbook

	2027-28/Y-1	2028-29/Y-2	2030-31/Y-4
FB CCR	Central Europe CCR		
minRAM	70 %		
CNEC	Only XB CNECs		

A sensitivity is foreseen on the RAM assumption for the flow-based

Cross-border exchange modelling



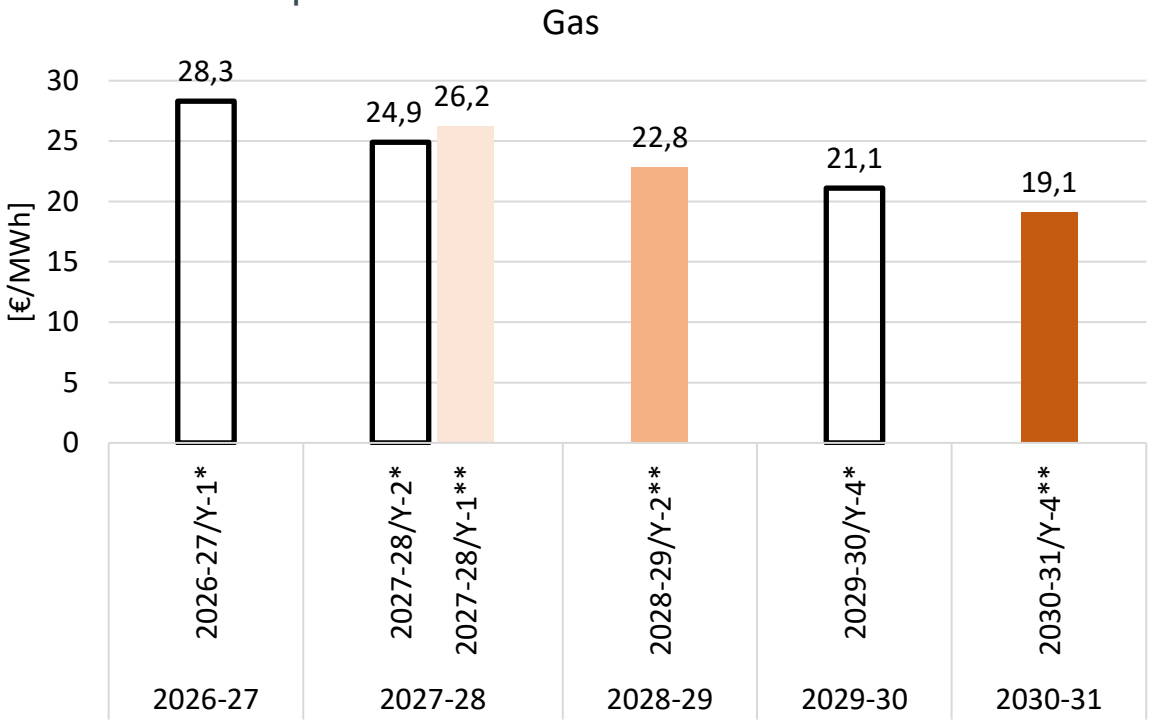
Article 3, §2 & 3

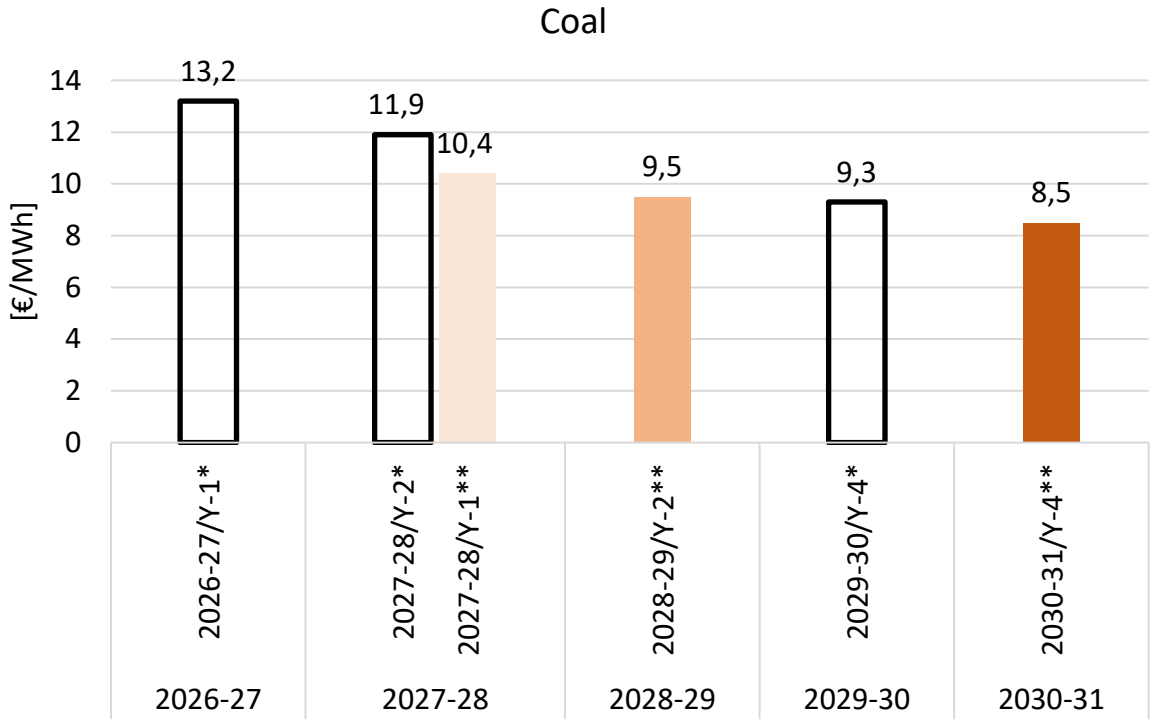
Scenario components

Fuel and CO_2 prices

Fuel prices

- Proposed methodology: Prices are based on futures when available. For years where futures are not available, an interpolation between the last available future and the WEO 2024 is applied.
- The prices for 2027-28/Y-1, 2028-29/Y-2 and 2030-31/Y-4 are expressed in €2024
- If future prices change significantly before the Minister's decision on the scenario, prices could be updated





Scenario selected from WEO : Announced pledges

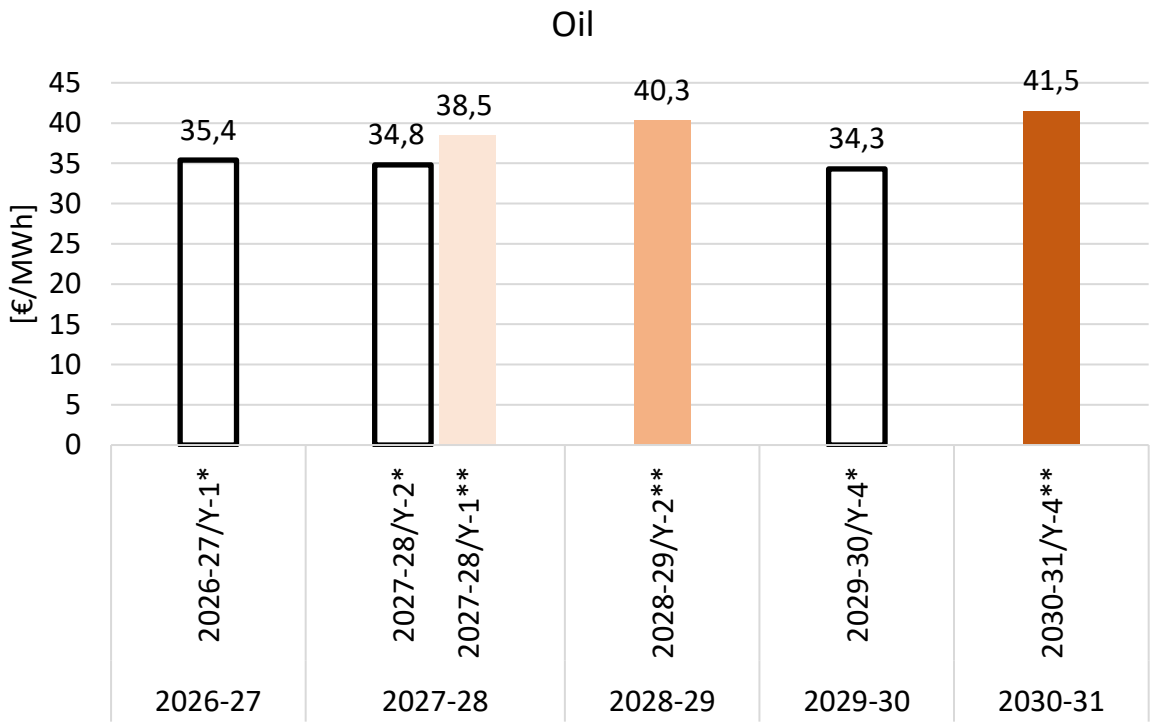
* expressed in [€2023/MWh]
** expressed in [€2024/MWh]

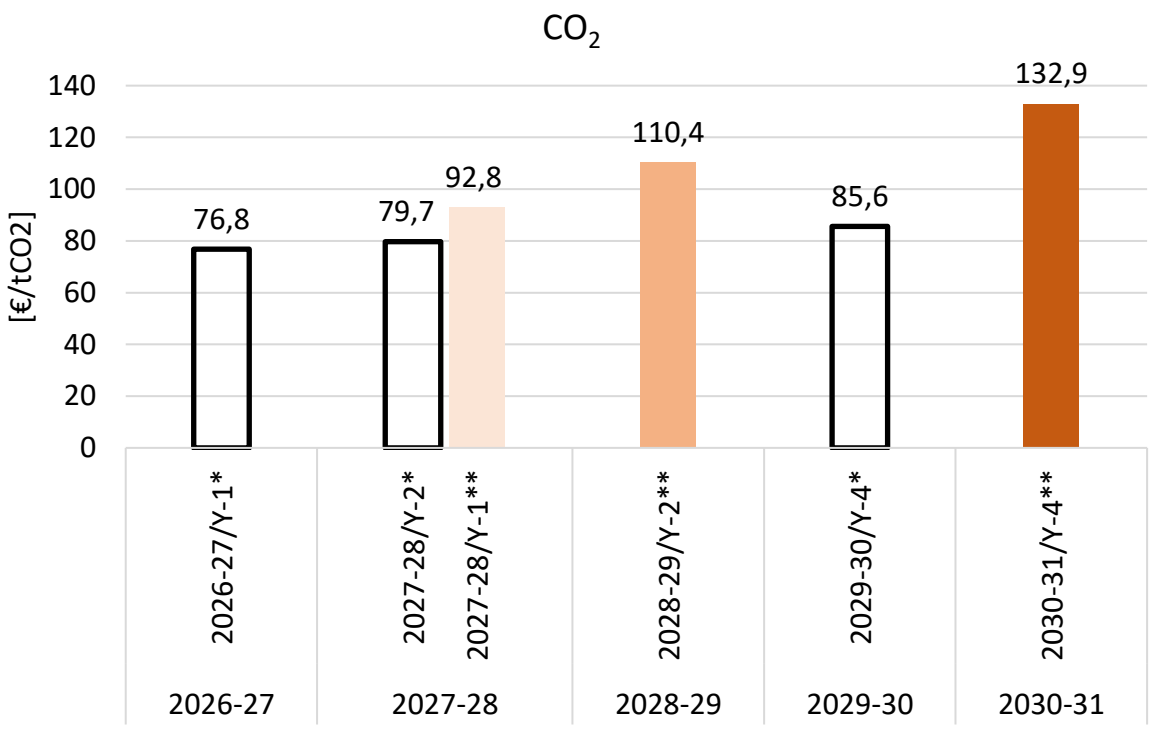
Article 3, §2 & 3

Scenario components

Fuel and CO_2 prices

Fuel prices





* expressed in [€2023/MWh]
** expressed in [€2024/MWh]

Article 3, §2 & 3

Updates proposed based on latest policies/published studies

Overview of the proposed values for the main countries. It is based on the ERAA24 and updated with most recent relevant sources (e.g. national adequacy studies). More information about the sources by country and by technology is available in the assumption workbook.

2027-28/Y-1	France	Germany	Netherlands	United Kingdom	Spain	Italy	Poland
Demand [TWh]	464	560	129	294	255	322	166
Onshore Wind [GW]	28	86	8	21	40	19	13
Offshore Wind [GW]	3	11	6	29	0	0	1
Solar [GW]	33	155	31	28	55	57	26
Gas [GW]	7	25	12	44	24	46	8
Coal [GW]	0.0	21.2	2.7	0.0	0.0	0.2	20.0
Nuclear [GW]	61.8	0.0	0.5	3.6	6.1	0.0	0.0

2028-29/Y-2	France	Germany	Netherlands	United Kingdom	Spain	Italy	Poland
Demand [TWh]	474	585	134	301	259	327	168
Onshore Wind [GW]	29	96	9	24	44	21	13
Offshore Wind [GW]	3	13	6	37	0	0	4
Solar [GW]	37	175	33	31	59	65	28
Gas [GW]	7	25	11	45	24	46	8
Coal [GW]	0.0	19.5	2.7	0.0	0.0	0.1	19.0
Nuclear [GW]	61.8	0.0	0.5	3.6	5.1	0.0	0.0

2030-31/Y-4	France	Germany	Netherlands	United Kingdom	Spain	Italy	Poland
Demand [TWh]	494	640	143	322	270	339	175
Onshore Wind [GW]	32	115	9	27	52	24	15
Offshore Wind [GW]	4	26	12	54	3	3	8
Solar [GW]	45	215	37	36	73	75	31
Gas [GW]	7	27	9	45	24	46	8
Coal [GW]	0.0	12.9	0.0	0.0	0.0	0.0	16.0
Nuclear [GW]	61.8	0.0	0.5	4.4	3.0	0.0	0.0

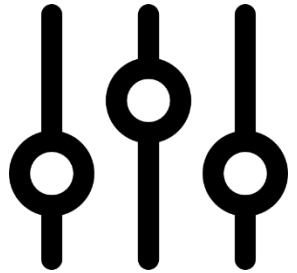
Definition of sensitivities

French nuclear availability

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

Decreased French nuclear availability



Justification:

- Aligned with latest ‘Bilan Prévisionnel’ which assumes a best case of 350TWh but also includes low sensitivities (330 TWh) and stress tests, assuming the simultaneous unavailability of 12 equivalent nuclear units.
- Major overhauls foreseen to extend the lifetime of its ageing fleet beyond 40 years.
- Nuclear fleet is very vulnerable to generic issues given the same technological conception used in the reactors (eg corrosion defects in some weldings found on nuclear units).

Article 3, §4

French nuclear availability

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

Decreased French nuclear availability

Scenario	French nuclear availability based on **'Bilan Prévisionnel' 2023**, which is also the scenario proposed in the **public consultation of 'Bilan Prévisionnel' 2025**, considering a nuclear availability of 350+10 TWh (existing + Flamanville 3)
Sensitivity 1	Lower availability by **2 units** on average during winter compared to 'cas de base' from Bilan Prévisionnel 2023
Sensitivity 2	Lower availability by **4 units** on average during winter compared to 'cas de base' from Bilan Prévisionnel 2023, corresponding to the "variante basse" from RTE.
Sensitivity 3	Lower availability by **6 units** on average during winter compared to 'cas de base' from Bilan Prévisionnel 2023

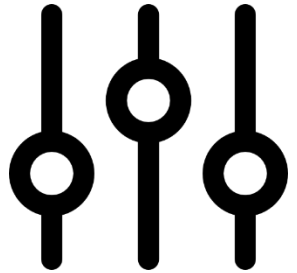
Article 3, §4

French coal extension

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

Extension of coal unit “Emile Huchet” in St. Avold, based on reconversion project from GazelEnergie (+588 MW)



Justification:

- Law voted on the 7th of April by French National Assembly to allow for the reconversion of Emile Huchet from coal to gas (natural gas & biogas).
- The economic viability of the project depends on its participation to the new French capacity mechanism.

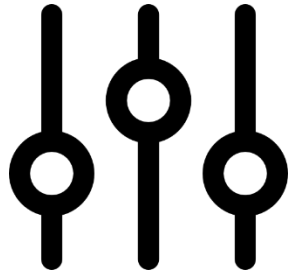
Article 3, §4

GB nuclear availability

Applicable for: ~~2025-26/Y-1~~ ~~2026-27/Y-2~~ **2030-31/Y-4**

Sensitivity:

Delay in the commissioning of Hinkley Point C. Either one (-1600 MW) or two units (-3200 MW)



Justification:

- Hinkley Point C nuclear power plant currently under construction by EDF
- EDF has announced possible delays in the commissioning of the units
- Historical information on commissioning of new nuclear projects shows significant margin (Flamanville 3, Olkiluoto 3)

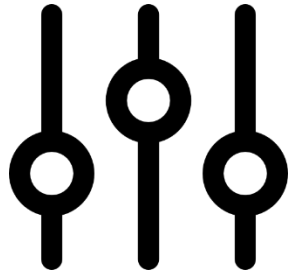
Article 3, §4

Flow-based CEP rules

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

minRAM 50% instead of 70% minRAM



Justification:

- Non achievements of the CEP rules to reflect the uncertainty on capacity calculation

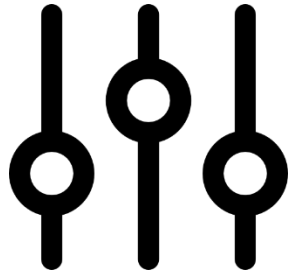
Article 3, §4

TJ Closure

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

Closure of turbojets due to CO_2 threshold (-140 MW)



Justification:

- High specific CO_2 emissions, not being eligible for CRM auctions
- Units being operated in “run-to-fail” mode, which might lead to some of them being unavailable for future delivery periods
- Most of turbojets units are < 25 MW, having no obligation to declare decommissioning according to Art. 4bis

Article 3, §4

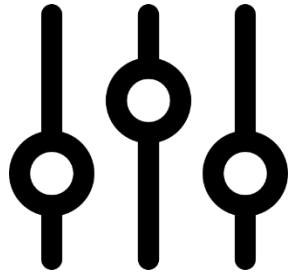
CHP capacity decrease

Applicable for:

2027-28/Y-1	2028-29/Y-2	2030-31/Y-4
- 29 MW	-57MW	-99MW

Sensitivity:

Decrease of small-scale CHP's capacity



Justification:

- Existing cogeneration installations may continue to operate until failure, with new investments in fossil-fuel-based CHP becoming rare due to policy changes discontinuing certificates and investment support.

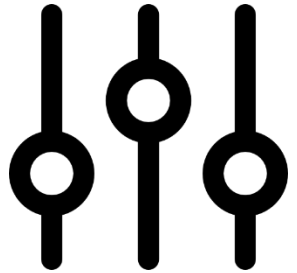
Article 3, §4

Tihange 1 extension

Applicable for: ~~202[illegible]Y-1~~ ~~202[illegible]Y-2~~ **2030-31/Y-4**

Sensitivity:

Extension of Tihange 1 nuclear power plant (+ 962MW)



Justification:

- Current government ambition is to extend additional existing nuclear power plant.
- While suggesting this sensitivity, it doesn't guarantee that the extension will be feasible by that time. There are numerous steps and considerations required to make it happen.

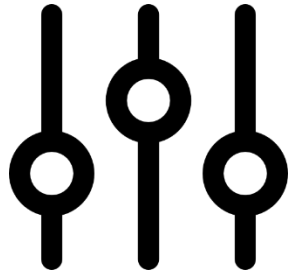
Article 3, §4

Offshore Delay

Applicable for: ~~202[illegible]Y-1~~ ~~202[illegible]Y-2~~ **2030-31/Y-4**

Sensitivity:

Delay of the first phase of MOG II (-700 MW)



Justification:

- Sensitivity to reflect potential delay on the first phase of MOG II
- Depending on ambitions to be set by the Energy Minister

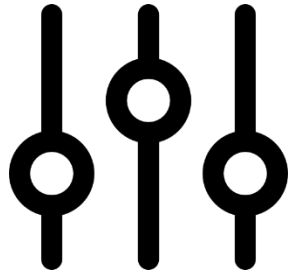
Article 3, §4

Constrained Transition scenario

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

‘Constrained transition’ scenario which considers poor macro-economic conditions potentially impacting the energy transition. This leads to a slower uptake of EV&HP and reduced and slower industry electrification, delayed realization of RES and grid projects.



Justification:

- Increasing geopolitical context leading to more uncertainties in the future policies and market conditions

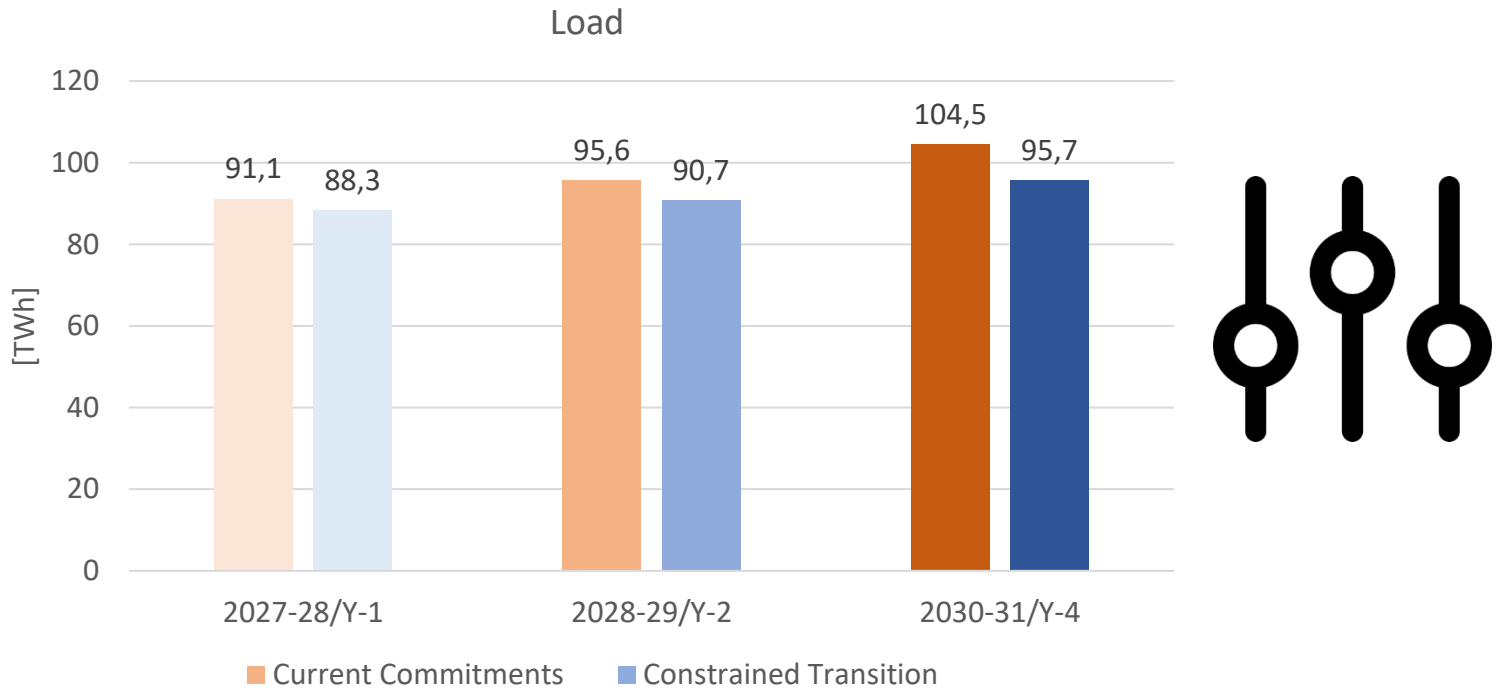
Article 3, §4

Constrained Transition scenario – Demand

In the constrained transition scenario, poor macro-economic conditions impact the affordability of the energy transition, translating into:

- a slower uptake of EV & HP
- reduced and slower industry electrification
- Industry closure

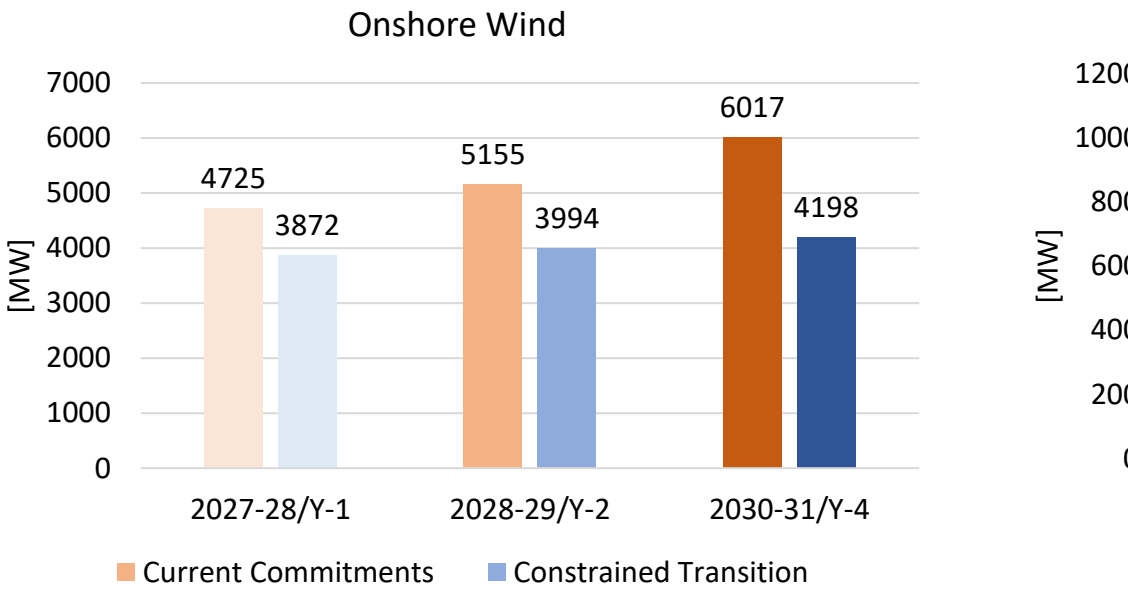
More details are available in the assumption workbook

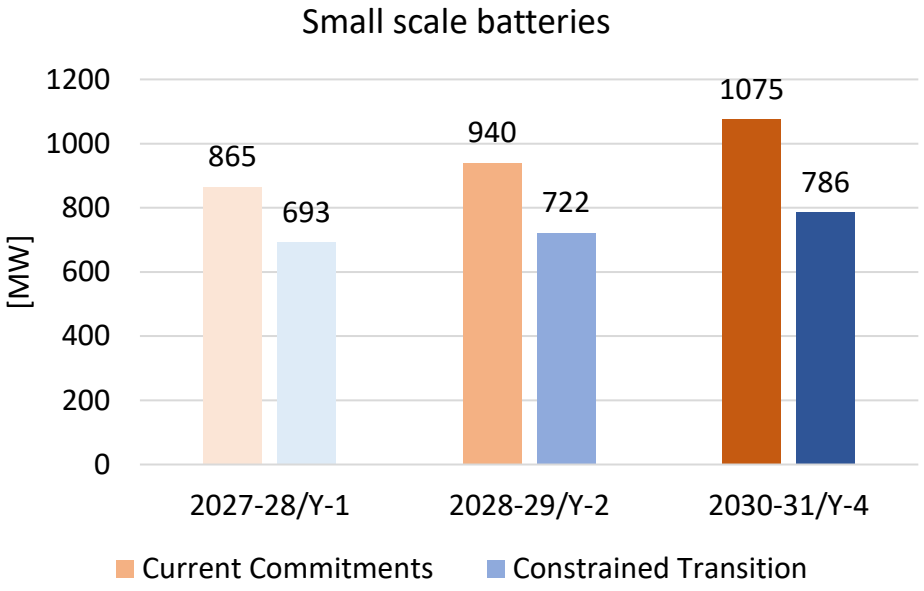


Article 3, §4

Constrained Transition scenario – Generation & Storage

- In the CT scenario, assets like home batteries are less affordable, hence their slower uptake.
- Also, there is a delay in the realization of RES projects
- More details about the CT scenario are available in the assumption workbook





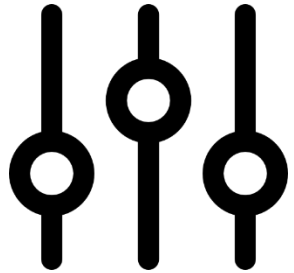
Article 3, §4

Prosumer Power scenario

Applicable for: 2027-28/Y-1 | 2028-29/Y-2 | 2030-31/Y-4

Sensitivity:

‘Prosumer Power’ scenario. Lower prices for PV, home batteries, and EV, making their installation faster and more widespread than in the Current Commitment scenario. Other parameters kept as in Current Commitments scenario.

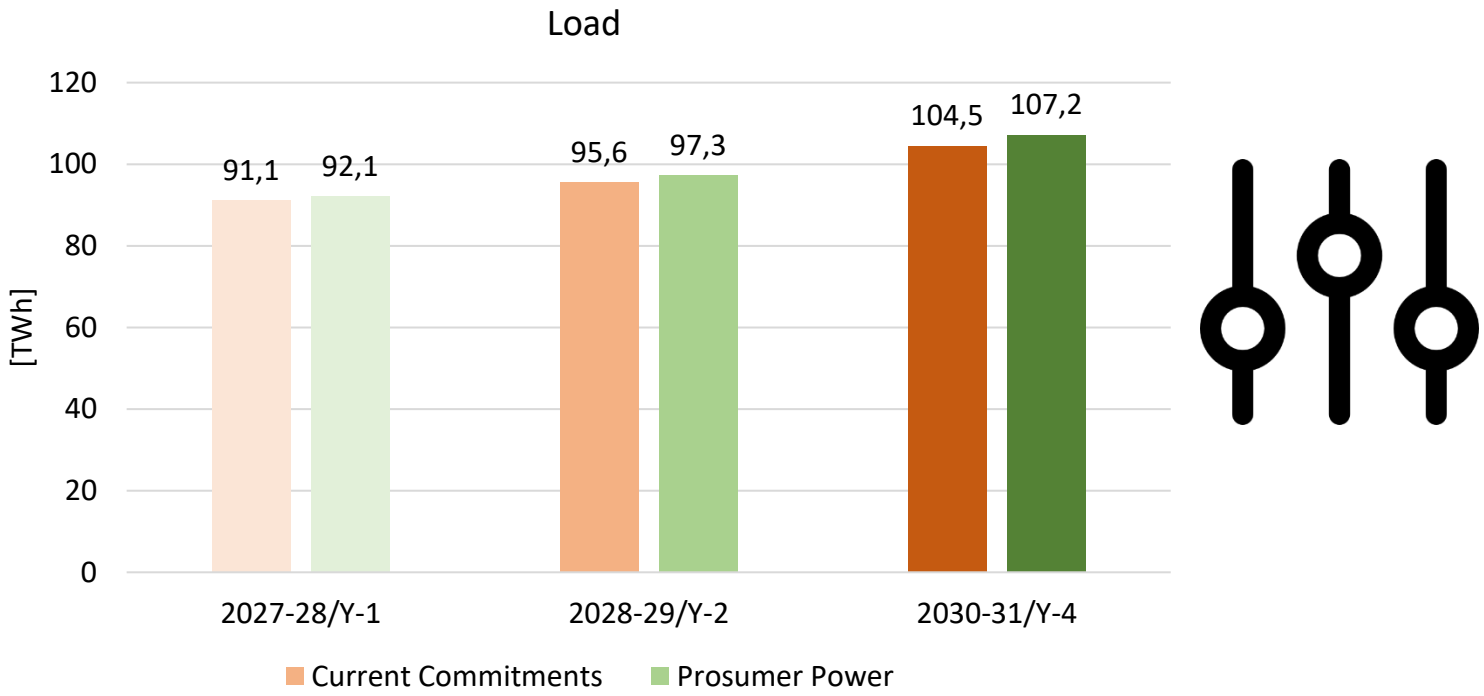


Article 3, §4

Prosumer Power scenario – Demand

In the Prosumer Power scenario, current trends related to prosumers accelerate further, leading to further decrease of the price of PV, EV, batteries and HP. Industry load is kept as in the Current Commitments scenario.

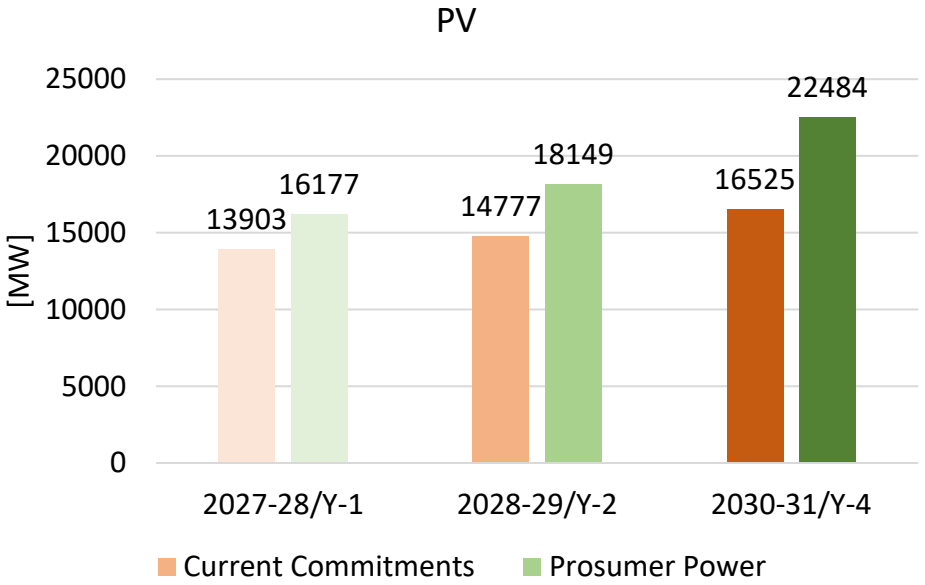
More details are available in the assumption workbook

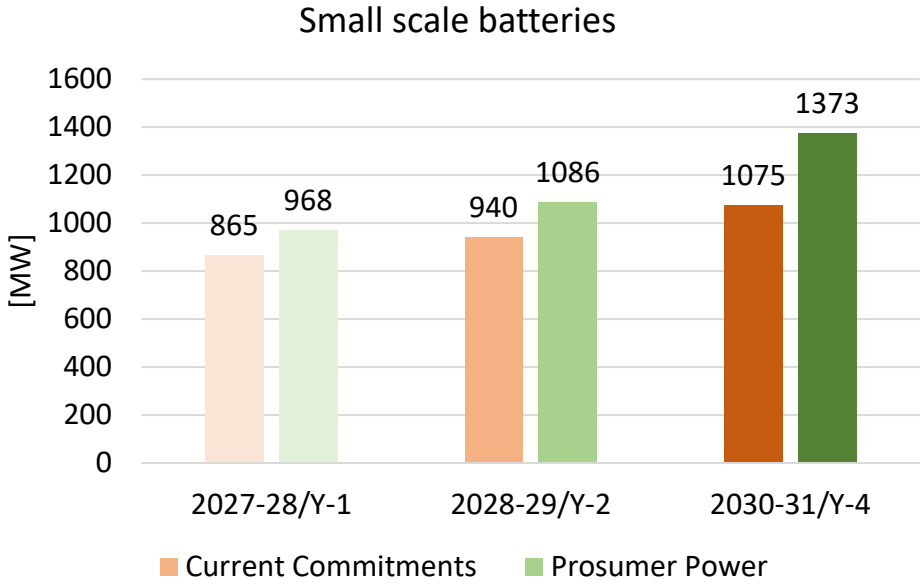


Article 3, §4

Prosumer Power scenario – Generation & Storage

- The lower prices of PV and small scale batteries leads to a faster uptake of those technologies
- The other generation capacities are kept as in the Current Commitments scenario
- More details are available in the assumption workbook





Article 3, §4

Other parameters to be consulted upon

Preselected capacity types

Royal Decree Context

Art. 6. §1er. Le gestionnaire du réseau s'assure que le scénario de référence tel que déterminé selon l'article 3, §7, répond au niveau de la sécurité d'approvisionnement requis par l'article 7undecies, §7, premier et deuxième alinéas, de la loi du 29 avril 1999 en ajoutant, si nécessaire, de la capacité supplémentaire à la zone de réglage belge :

1° provenant des types de capacité présélectionnés selon l'article 10 et proposés par le gestionnaire de réseau dans la consultation publique visée à l'article 5 et ensuite choisis par le gestionnaire de réseau en collaboration avec la Direction générale de l'Energie et en concertation avec la commission ;

2° d'une manière itérative sur la base d'une boucle d'optimisation économique avec un incrément à la hauteur de celui appliqué dans l'évaluation la plus récemment disponible de l'adéquation des ressources à l'échelle européenne ou nationale visée aux articles 23 et 24 du Règlement (UE) 2019/943, et de maximum 100 MW.

Art. 6. §1. De netbeheerder verzekert zich ervan dat het referentiescenario zoals bepaald volgens artikel 3 §7 beantwoordt aan het niveau van bevoorradingszekerheid dat worden geëist door artikel 7undecies, § 7, eerste en tweede lid, van de wet van 29 april 1999 door, indien nodig, aan de Belgische regelzone bijkomende capaciteit toe te voegen:

1° afkomstig van de volgens artikel 10 voorgeselecteerde types van capaciteit die voorgesteld worden door de netbeheerder ter openbare raadpleging bedoeld in artikel 5 en daarna door de netbeheerder in samenwerking met de Algemene Directie Energie en in overleg met de commissie gekozen worden;

2° op een iteratieve manier op basis van een economische optimalisatielus op basis van incrementele stappen ten belope van deze zoals toegepast in de meest recent beschikbare Europese of nationale beoordeling van de toereikendheid van de elektriciteitsvoorziening, bedoeld in de artikelen 23 en 24 van Verordening (EU) 2019/943, en van maximaal 100 MW.

Preselected capacity types

Purpose

Reference scenario defined by the Minister

Calibration of the reference scenario

Determination of the CRM volume & parameters

This scenario does not necessarily meet the legal security of supply criteria, as defined in article 7undecies, 3 of the electricity law.

As long as the security of supply criteria is not reached, capacity will be iteratively added based on an economic optimization loop.

The output from the model ensures to be compliant with the legal security of supply criterion.

Preselected capacity types

Purpose

Reference scenario defined by the Minister → Calibration of the reference scenario → Determination of the CRM volume & parameters

→ Preselected capacity types need to be selected for each CRM auction

Preselected capacity types

- The preselected capacity types proposed for each auction are selected based on the construction time of the technologies
- Price parameters will be aligned with the intermediate values selected by the Minister

Technology	Marginal Price Calculation	CAPEX [€ 2024/kW]	FOM [€ 2024/kW]	Economic lifetime [y]	Applicable in: 2027-28/Y-1	2028-29/Y-2	2030-31/Y-4
CCGT	Marginal price of a new CCGT	Cf. Intermediate Values			**No**	**No**	**Yes**
OCGT	Marginal price of a new OCGT				**No**	**Yes**	**Yes**
Large-scale bat. (4h)	Marginal price of a new battery				**Yes**	**Yes**	**Yes**
DSR 24h	Marginal price of 24h DSR				**Yes**	**Yes**	**Yes**

Scenario choice post delivery period for market revenues calculation

Royal Decree Context

“Article 10, §6 Les rentes inframarginales annuelles estimées de la référence pour chaque technologie sont exprimées en €/MW/an et sont calculées, avec une périodicité annuelle, sur l’ensemble de la durée de vie de la référence pour chaque technologie, en prenant en compte la valeur du coût marginal de la technologie comme seuil inférieur. Ces rentes inframarginales sont déterminées, pour chaque année sur la durée de vie de l’unité de marché de capacité, sur la base de la médiane (P50) des revenus des années de simulation, sur la base du scénario de référence visé à l’article 3, §7 et tiennent compte du niveau du prix d’exercice applicable visé à l’article 26.

Si le scénario de référence n’est pas disponible pour une année sur la durée de vie de la référence pour chaque technologie, une interpolation est réalisée entre les valeurs des années pour lesquelles le scénario de référence existe, éventuellement corrigé par des données disponibles complémentaires. Ces données sont présentées par le gestionnaire de réseau et les sources de celles-ci sont soumises à une consultation publique visée à l’article 6, §2, 4° et sont choisies par le gestionnaire de réseau en collaboration avec la Direction générale de l’Energie et en concertation avec la commission :

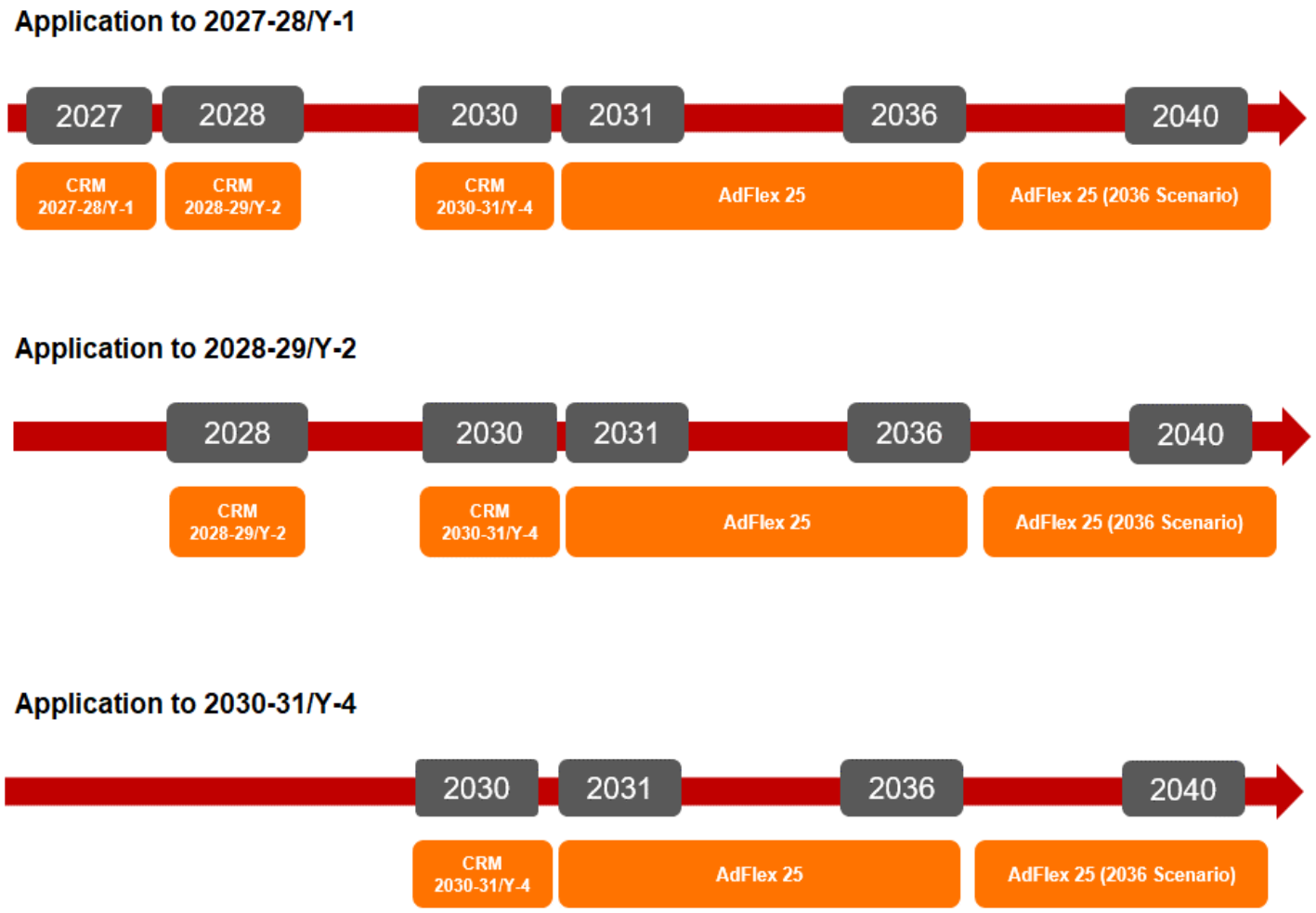
“Artikel 10, §6 De geraamde jaarlijkse inframarginale inkomsten van de referentie voor elke technologie worden uitgedrukt in €/MW/jaar en worden, op jaarlijkse basis, berekend over de volledige levensduur van de referentie voor elke technologie, rekening houdend met de waarde van de marginale kost van de technologie als ondergrens. Deze inframarginale inkomsten worden voor elk jaar over de levensduur van de eenheid in de capaciteitsmarkt bepaald op basis van de mediaan (P50) inkomsten van de simulatiejaren op basis van het referentiescenario bedoeld in artikel 3 §7 en houden rekening met het niveau van de toepasselijke uitoefenprijs bedoeld in artikel 26.

.Indien het referentiescenario niet beschikbaar is voor een jaar uit de levensduur van de referentie voor elke technologie, wordt een interpolatie uitgevoerd tussen de waarden van de jaren waarvoor het referentiescenario bestaat, eventueel bijgestuurd door bijkomende beschikbare gegevens. Deze gegevens worden voorgesteld door de netbeheerder en de bronnen ervan worden ter openbare raadpleging bedoeld in artikel 6, §2, 4° voorgelegd en worden door de netbeheerder in samenwerking met de Algemene Directie Energie en in overleg met de commissie gekozen.

Scenario choice post delivery period for market revenues calculation

The objective is to define the scenarios for periods post-2030, which will be used to calculate the market revenues for technologies with a lifespan exceeding one year :

- AdeqFlex'25 is employed to calculate market revenues beyond 2030. The scenario selected will be aligned with the reference scenario selected by the Minister.
- For the year 2029, a linear interpolation will be used as no simulation will be conducted for this specific year.



Shortlist of existing technologies for the determination of the Intermediate Price Cap : same shortlist than for the 2029-30/Y-4 auction

Royal Decree Context

“Article 18, § 1

Le gestionnaire du réseau détermine, sur la base de l’étude visée à l’article 17, après la consultation publique visée à l’article 6, une liste réduite de technologies existantes ou raisonnablement attendues qui seront considérées pour la détermination du prix maximal intermédiaire.”

“Artikel 18, § 1

De netbeheerder stelt op basis van de studie bedoeld in artikel 17, na de openbare raadpleging bedoeld in artikel 6, een beperkte lijst op van bestaande of redelijkerwijs te verwachten technologieën die in aanmerking genomen zullen worden voor de bepaling van de intermediaire maximumprijs.”

- CCGTs
- OCGTs
- Batteries
- Market Response 4h

→ Same as last year

Yearly Fixed O&M costs for IPC technologies

	Yearly Fixed O&M [€2024/kW/year]			Source
	Low	**Mid**	**High**	
CCGT	35	37	41	Entras 2023 with inflation
OCGT	24	28	34	Entras 2023 with inflation
Batteries	15	21	25	Entras 2023 with inflation
Market Response 4h	12	12	12	AdeqFlex 2025

Parameters for the calculation of market revenues

Technologies	Efficiency [%]			VOM [€ 2024/MWh]			Source
	low	mid	high	low	mid	high	
CCGT	50	54	58	1.0	1.3	2.2	Entras 2023 + inflation
OCGT	35	40	44	2.1	3.1	3.8	Entras 2023 + inflation
Batteries*	85	85	85	0.1	0.2	0.4	Entras 2023 + inflation

Methodology for the calculation of net revenues from ancillary services

- Methodology based on the Compass Lexecon study of last year. The results of this year's iteration will be presented in due time in this WG.
- Net revenues from the provision of balancing services are calculated by looking at historical data (for the latest 36 months), based on the reservation cost of balancing services.
- The goal is to carry out the calculations with updated data whilst using the same assumptions to reach updated results.

AMT Price calculation

AMT Price calculation

- Following section 9.4.1.2 of the Functioning Rules, Elia has calculated the AMT Price for Delivery Period 2025-26
- The AMT Price is
  - Based on the Reference Scenario for the 2024 Y-1 Auction with Delivery Period 2025-26, adapted based on the results of that Auction
  - That Reference Scenario is expressed in €2023. The result is thus adapted for inflation to reach a value in €2025
    - This provision was added in the CREG's Functioning Rules in the Public Consultation

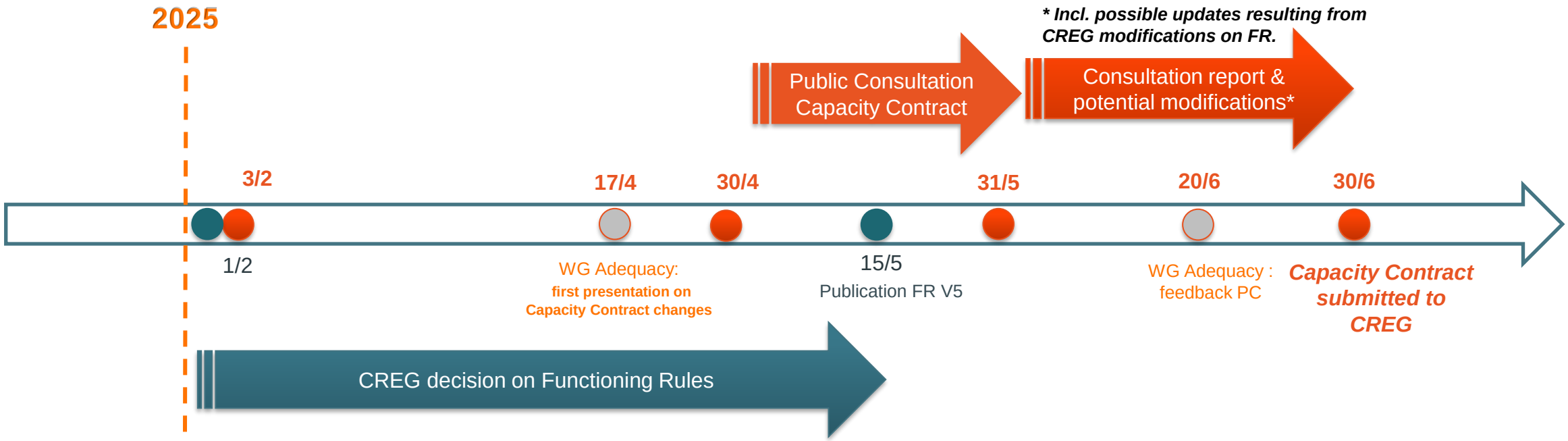
- The value obtained by Elia equals **€ 205,09**
- Throughout Delivery Period 2025-26, whenever the Day-Ahead reference price is equal to or exceeds this value the concerned MTU is considered as an AMT-MTU and can be selected by Elia for the Availability Monitoring

Capacity Contract V5 : changes

CRM 2025 Capacity Contract timeline

Context:

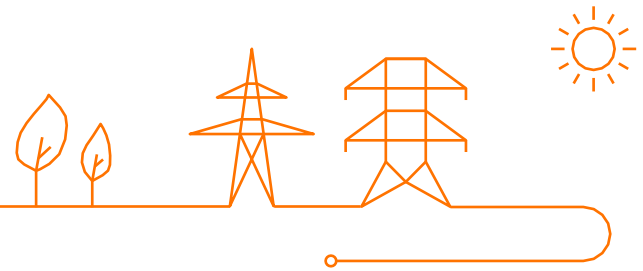
- Impact of the FR V5 for the 2025 Auctions.
- Changes to the settlement process in view of alignment with other processes.



Capacity Contract changes

- Following the Public Consultation on the Functioning Rules v5, ELIA has integrated some minor changes to the Capacity Contract for the upcoming Public Consultation.
- These changes are mainly driven by the switch to a self-billing process to align with other Elia processes (cf. changes to BSP-contract) :
    - The new process will come into effect on November 1, 2026 (as of DP ‘26-’27) **(note that the delivery period 2025-26 will not be impacted)**
    - The Functioning Rules will be amended next year to eliminate references to the current process.
- A clause to ensure the retroactivity of future developments without the need to re-sign all existing contracts (operational simplification)

Proposed changes to the contract will be publicly consulted upon during the **period going from April 30th until May 31st.**



2025 auction's parameters by FPS Economy

economie

SPF Economie, P.M.E., Classes moyennes et Energie

2025 auction's parameters by FPS Economy

WG Adequacy 17th April 2025

Volume and maximum price of the 2025 auctions

For the Y-4 auction :

- Point A is 6612 MW for a maximum price of 111,6 €2029-2030/kWd
- Point B is 6997 MW for a maximum price of 74,4 €2029-230/kWd

For the Y-2 auction :

- Point A is 4978 MW for a maximum price of 50 €2027-2028/kWd
- Point B is 5370 MW for a maximum price of 33,3 €2027-2028/kWd

For the Y-1 auction

- Point A is 6175,8 MW for a maximum price of 50 €2026-2027/kWd
- This volume considers a MEC equal to the average between the Y-2 2027-2028 and the Y-1 2025-2026 folowing the decision of the Minister on the basis of stability and SoS
- This results in a X-border volume of 791MW for the Netherlands and 151 MW for Germany
- No auction is organised for France given the volume is <50 MW

Other parameters :

For the IPC and strike price, the proposition of Elia was followed :

The IPC (already indexed) is equal to 22.7€ for the Y-4, 28.6€ for the Y-2 and 27.4€ for the Y-4.

The strike price is equal for all delivering period to 384€/MWh.

Concerning the derating factors, following the advice of the CREG, some DF for the Y-1 were modified.

Obligation to ask for an authorization for large-scale batteries

- Two years ago, there was a confusion among market parties regarding the obligation to request an authorization for batteries
- The **27/03/2023 Royal Decree** is now in application (link):

Art. 3. § 1er. L'octroi préalable d'une autorisation individuelle visée à l'article 4, § 1er, de la loi du 29 avril 1999 est requis pour :

1° l'établissement et l'exploitation de nouvelles grandes installations de stockage d'énergie dont la puissance nette développable est d'au moins 25 mégawatts électriques ;

2° les transformations ou autres aménagements des grandes installations de stockage d'énergie existantes visées à l'article 4, § 6, de la loi du 29 avril 1999 et des grandes installations de stockage d'énergie qui ont obtenu une autorisation conformément au présent arrêté ou à l'arrêté royal du 29 mars 2022 relatif à l'octroi des autorisations individuelles couvrant l'établissement et l'exploitation des installations de stockage d'énergie pour lesquelles, en 2022, un dossier de préqualification sera introduit conformément à l'article *7undecies*, § 8, de la loi du 29 avril 1999 relative à l'organisation du marché de l'électricité, s'il résulte de ces adaptations ou aménagements un accroissement supérieur soit à dix pour cent de la puissance nette développable de l'installation soit à 25 mégawatts électriques de la puissance nette développable de l'installation.

Les grandes installations de stockage d'énergie qui ne sont pas visé à l'alinéa 1er sont exonérés de l'obligation d'autorisation visée à l'article 4, § 1er, de la loi du 29 avril 1999 .

La demande de cette autorisation est faite conformément au présent article.

Art. 3. § 1. De voorafgaande toekenning van een individuele vergunning bedoeld bij artikel 4, § 1, van de wet van 29 april 1999, is vereist voor:

1° de bouw en exploitatie van nieuwe grote energieopslagfaciliteiten waarvan het netto ontwikkelbaar vermogen 25 elektrische megawatt of meer bedraagt;

2° verbouwingen of andere aanpassingen van bestaande grote energieopslagfaciliteiten bedoeld in artikel 4, § 6, van de wet van 29 april 1999 en van grote energieopslagfaciliteiten die een vergunning verkregen overeenkomstig dit besluit of het koninklijk besluit van 29 maart 2022 betreffende de toekenning van de individuele vergunningen voor de bouw en exploitatie van energieopslagfaciliteiten waarvoor een prekwalificatiedossier wordt ingediend in het jaar 2022 overeenkomstig artikel *7undecies*, § 8, van de wet van 29 april 1999 betreffende de organisatie van de elektriciteitsmarkt, indien deze aanpassingen of verbouwingen aanleiding geven tot een elektriciteitstoename met meer dan tien percent van het netto ontwikkelbaar vermogen van de installatie of met meer dan 25 elektrische megawatt van het netto ontwikkelbaar vermogen van de installatie.

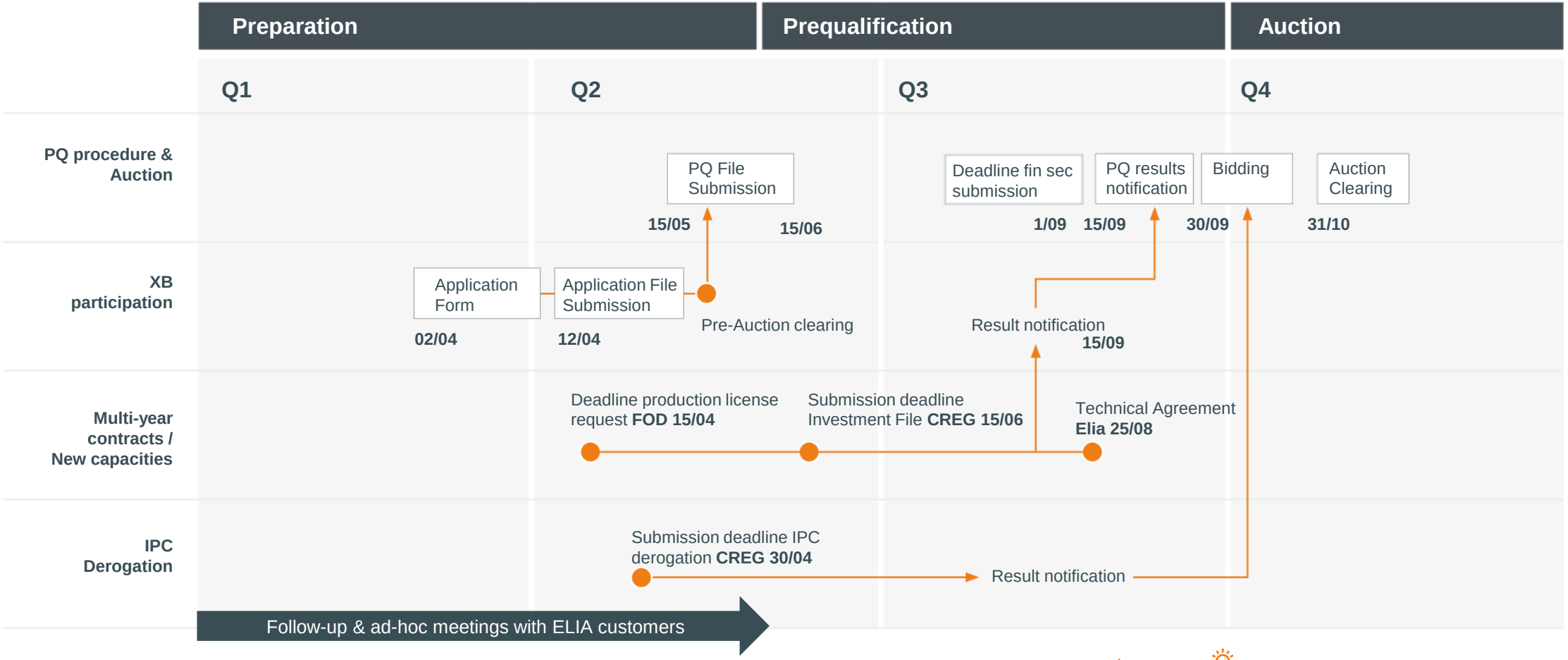
Grote energieopslagfaciliteiten die niet vallen onder het eerste lid zijn vrijgesteld van de vergunningsplicht bedoeld in artikel 4, § 1, van de wet van 29 april 1999.

De aanvraag van deze vergunning wordt verricht overeenkomstig dit artikel.

- An email with the procedure to request such authorization was sent some weeks ago. Battery owners that are subject to this Royal Decree have the obligation to make their request **at the latest 15 (calendar) days after the publication of the MD Instruction in order to participate in the auction.**

AOB

CRM auctions – key milestones in 2025



24/04 - Operational Info Session

- Goal of the session?

The goal of the session is to present you the updates in comparison to last year to the operational processes and the IT tools developed for the Prequalification, Financial Security, Auction and Pre-Delivery Monitoring.

- What can you expect?

Participating to these sessions will help you to be up-to-speed and to integrate quicker the changes and improvements that we implemented for several processes. More specifically, as an example, the following themes will be presented:

- **Prequalification (PQ):** General timings, tool improvements/changes, renewal process improvement, CO2 communication process,….
- **Financial Security (FS):** General timings, Submission changes, Updated submission process
- **Auction (AUC):** General timings, Improvements linked to Financial Securities checks
- **Pre-Delivery Monitoring (PDM):** General timings, practical information on control moments and Quarterly reports

- When?

On 24/04/2025 from 14.30 to 16.00 @Elia Empereur or via Teams.

Your participation is to be confirmed via email to taskforce.crm@elia.be before 18/04/2025

Next meetings

Next meetings

- **Thursday 24/04/2025 : Operational Info Session** (14:30 to 16:00)
- **Friday 20/06/2025 : WG Adequacy** (09:30 to 12:30)
- **Friday 27/06/2025 : Presentation Adequacy & Flexibility Study** (AM)
- **Thursday 28/08/2025 : WG Adequacy** (13:30 to 16:30)
- **Monday 13/10/2025 : WG Adequacy** (13:30 to 16:30)
- **Friday 19/12/2025 : WG Adequacy** (13:30 to 16:30)

Please find further information on the next meetings through the WG Adequacy webpage

Thank you.