

WKK-ontmoetingsdag

Cogeneratie klaar voor de toekomst

Adequacy study: brandstoffen in de energiebevoorrading tot 2035



Rafael Feito-Kiczak - ELIA



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2024 - 2034
ADEQUACY AND FLEXIBILITY STUDY FOR BELGIUM

presented by Rafael Feito Kiczak

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As stated in the law since 2018; Elia publishes a 10-year ahead adequacy & flexibility study every 2 years




APR 2016	Adequacy & Flexibility 2017-2027		At the request of the Minister of Energy, an ad hoc study covering the adequacy and flexibility of Belgium's needs was published in April 2016. As requested by the authorities, an addendum was subsequently published in September 2016, based on a large stakeholder consultation which was undertaken following the publication of the initial study.	
JUL 2018	Legal requirement in the Belgian Electricity Act		Art. 7bis, §4bis (Elia's translation into English): "No later than 30 June of each biennial period, the system operator shall carry out an analysis of the needs of the Belgian electricity system in terms of the country's adequacy and flexibility for the next ten years. The basic assumptions and scenarios, as well as the methodology used for this analysis, shall be determined by the system operator in collaboration with the Directorate General for Energy and the Federal Planning Bureau and in concertation with the regulator."	
JUN 2019	Adequacy & Flexibility 2020-2030		The first study published in 2019 after the modified law.	
JUN 2021	Adequacy & Flexibility 2022-2032		The study published 2 years ago.	
JUN 2023	Adequacy & Flexibility 2024-2034		The present study.	

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We looked **10 years ahead**, covering the most important events that will affect the electricity system in the future, simulating **28 countries**

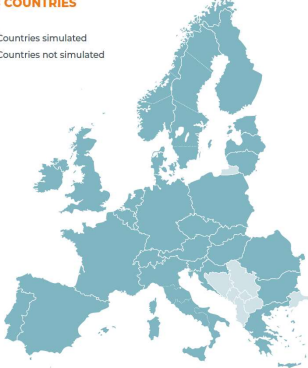


28 COUNTRIES

- Countries simulated
- Countries not simulated

Main changes that will affect the Belgian and EU electricity system

Electrification (heat, transport, industry) and coal phase outs → European targets



Timeline (2022-2034):

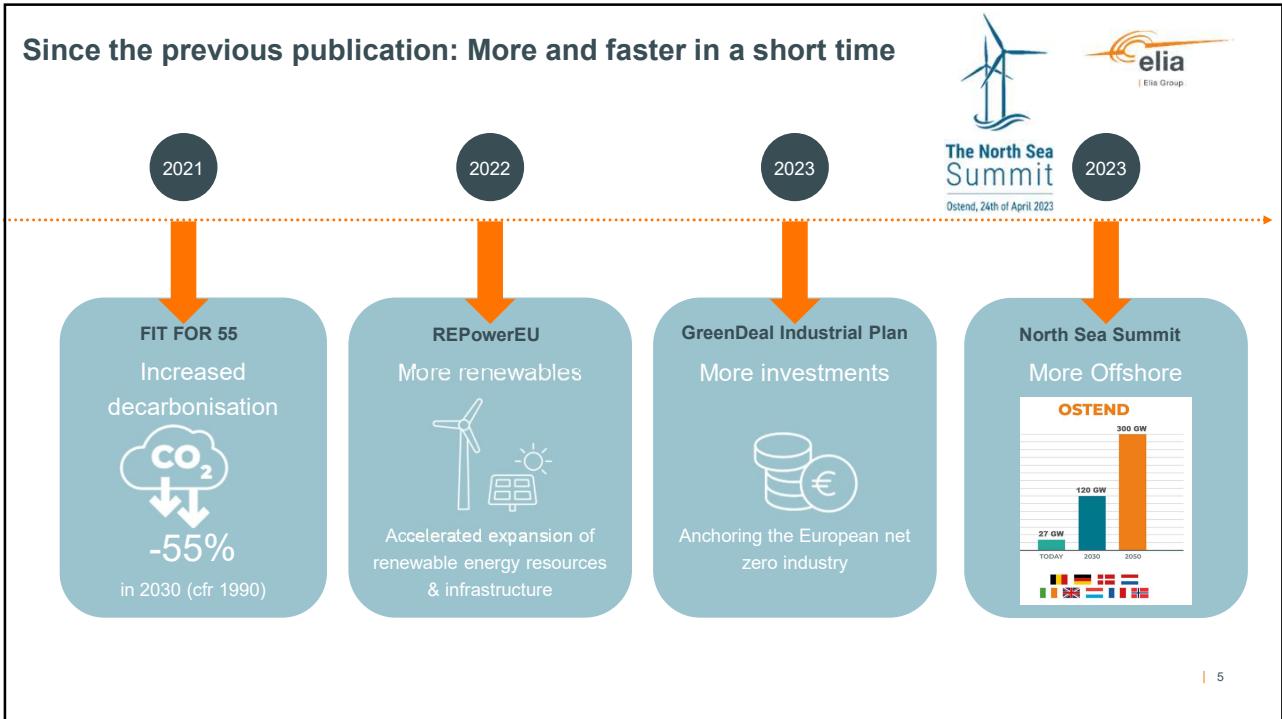
- 2025: +1.7 GW gas in BE
- 2026: +2 GW nuclear in BE
- 2028: -2 GW nuclear in BE
- 2029: +0.7 GW offshore in BE
- 2030: +2.8 GW offshore in BE
- 2030: +Nautilus (UK-BE)
- 2032: +TritonLink (DK-BE)
- 2025: -3.9 GW nuclear in BE

- Main scenarios analysed for adequacy.
- Detailed analysis and sensitivities for adequacy and economics.
- Detailed analysis and sensitivities for adequacy, economics and short term flexibility.

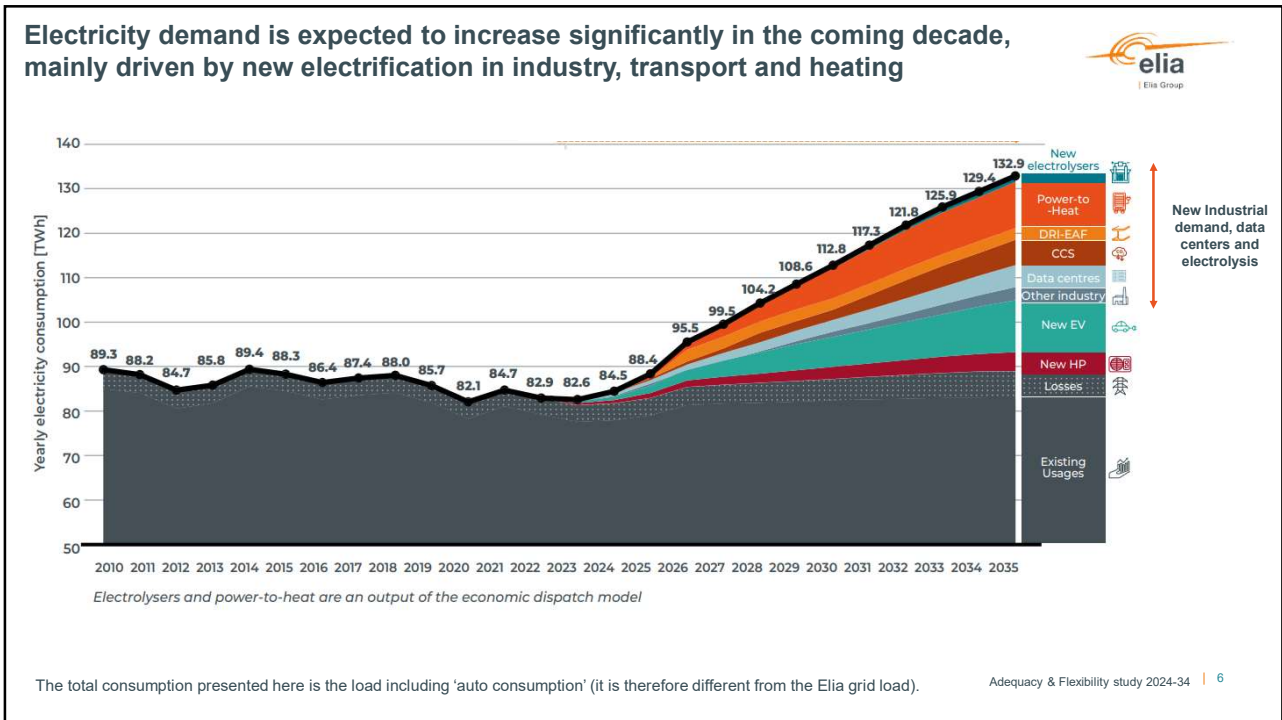
Years are simulated from 1 September Y to 31 August Y+1, hence 2025 corresponds to 1 September 2025 until 31 August 2026.

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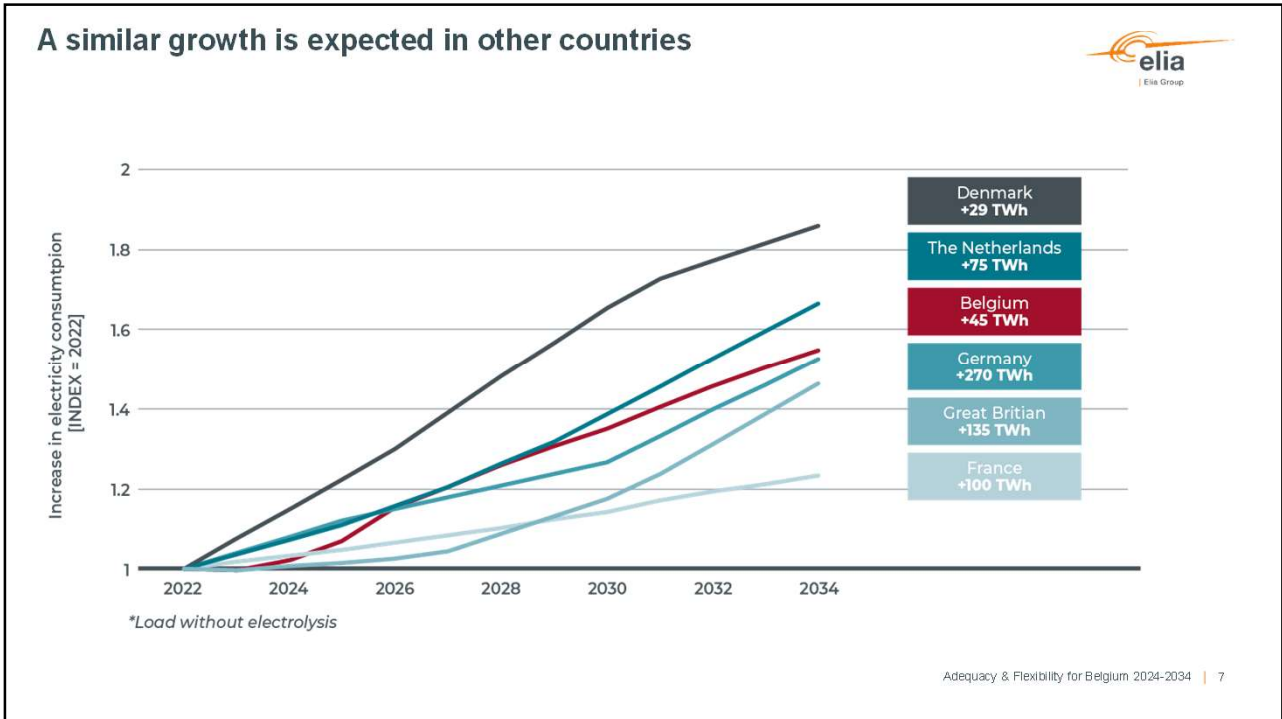
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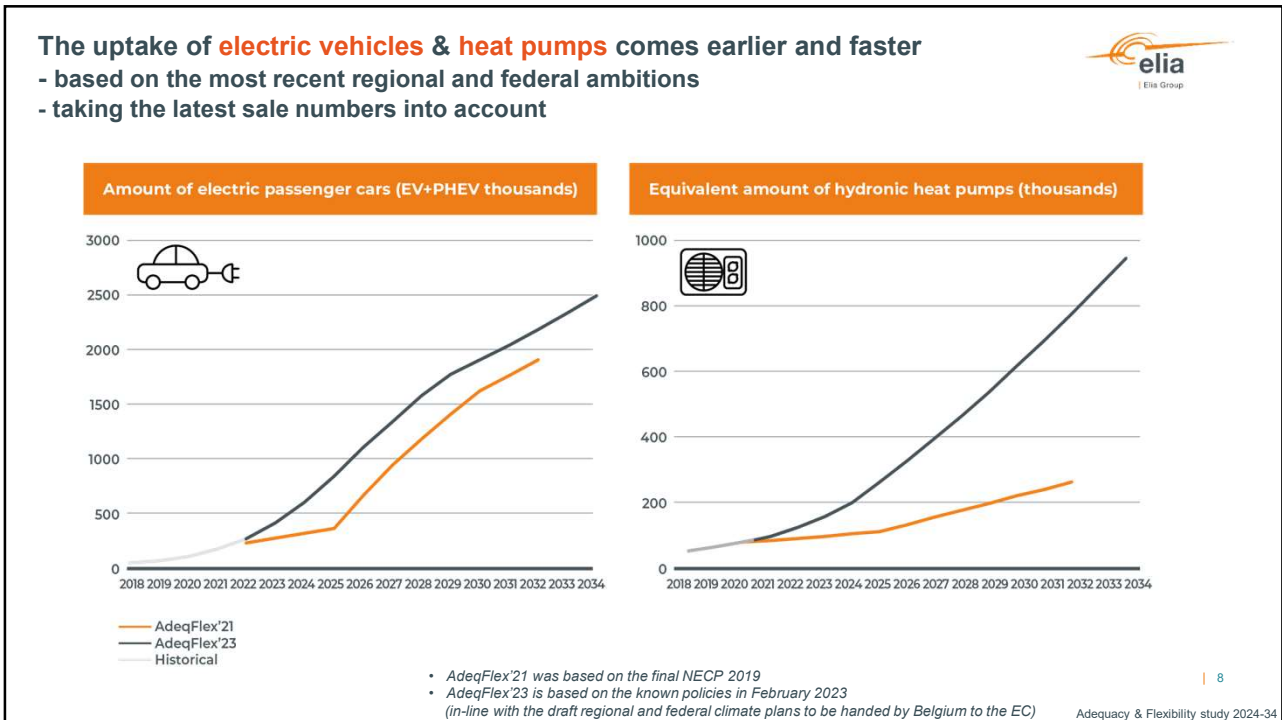
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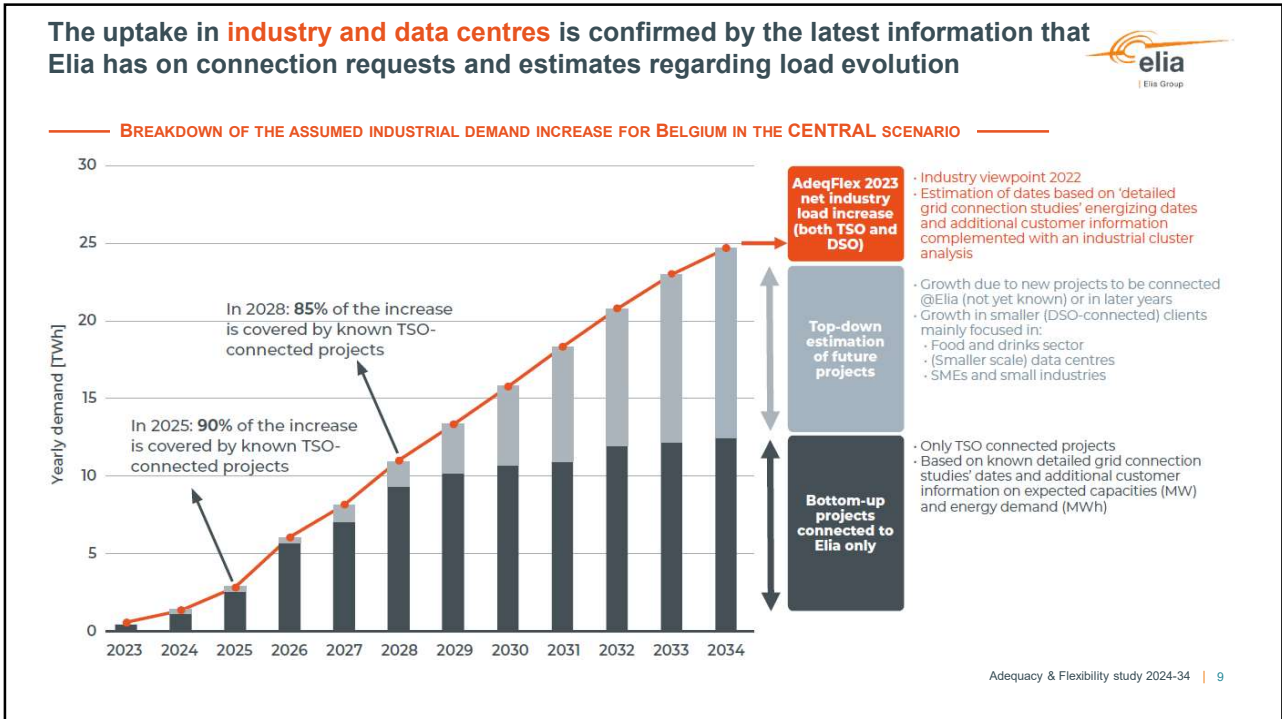
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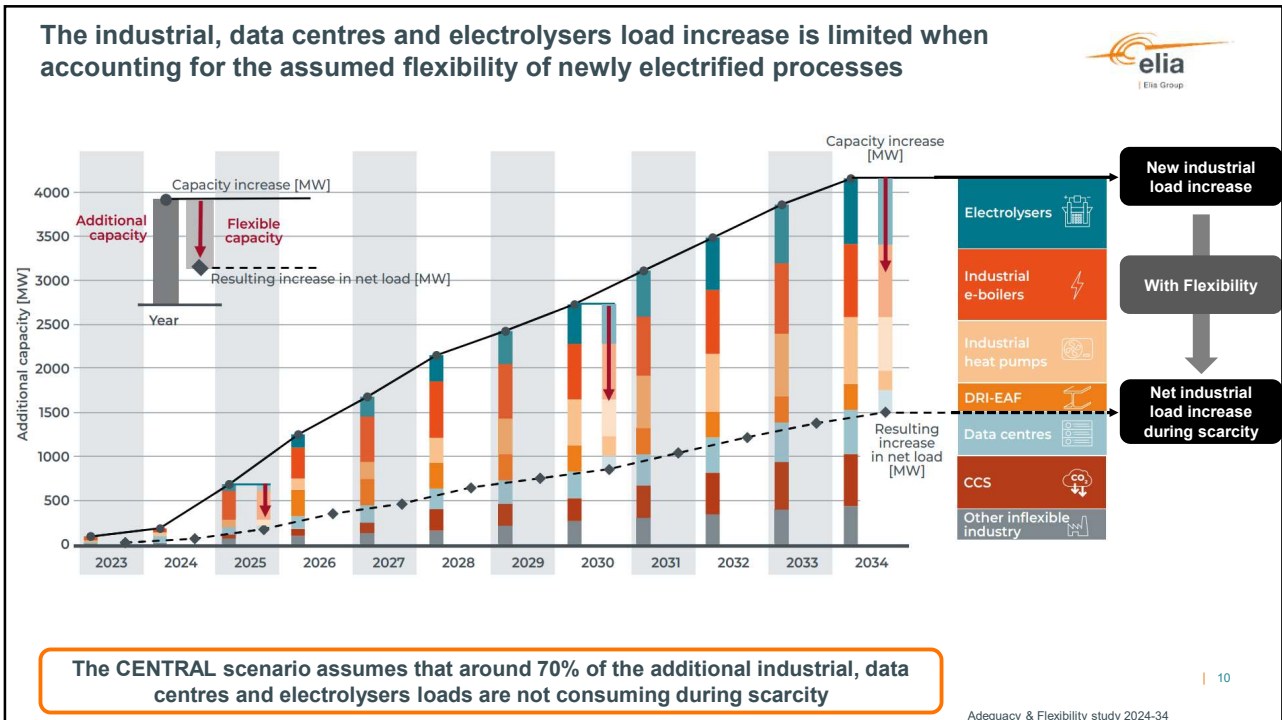
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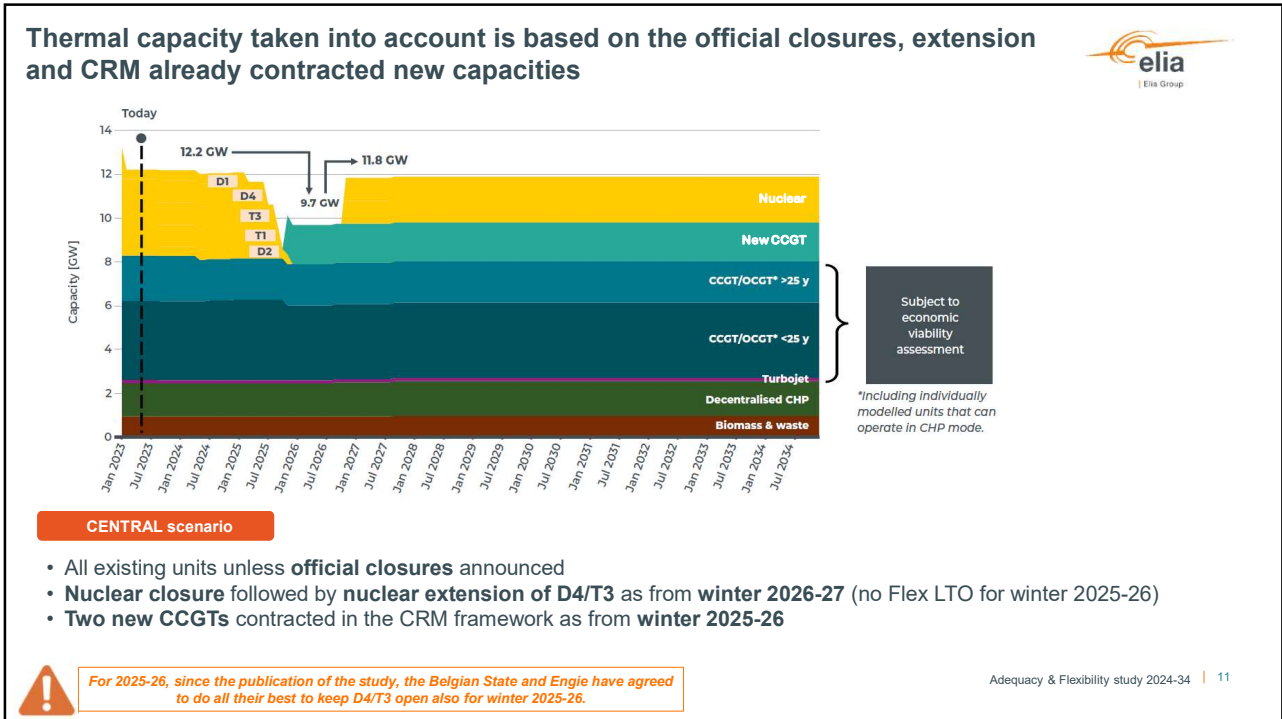
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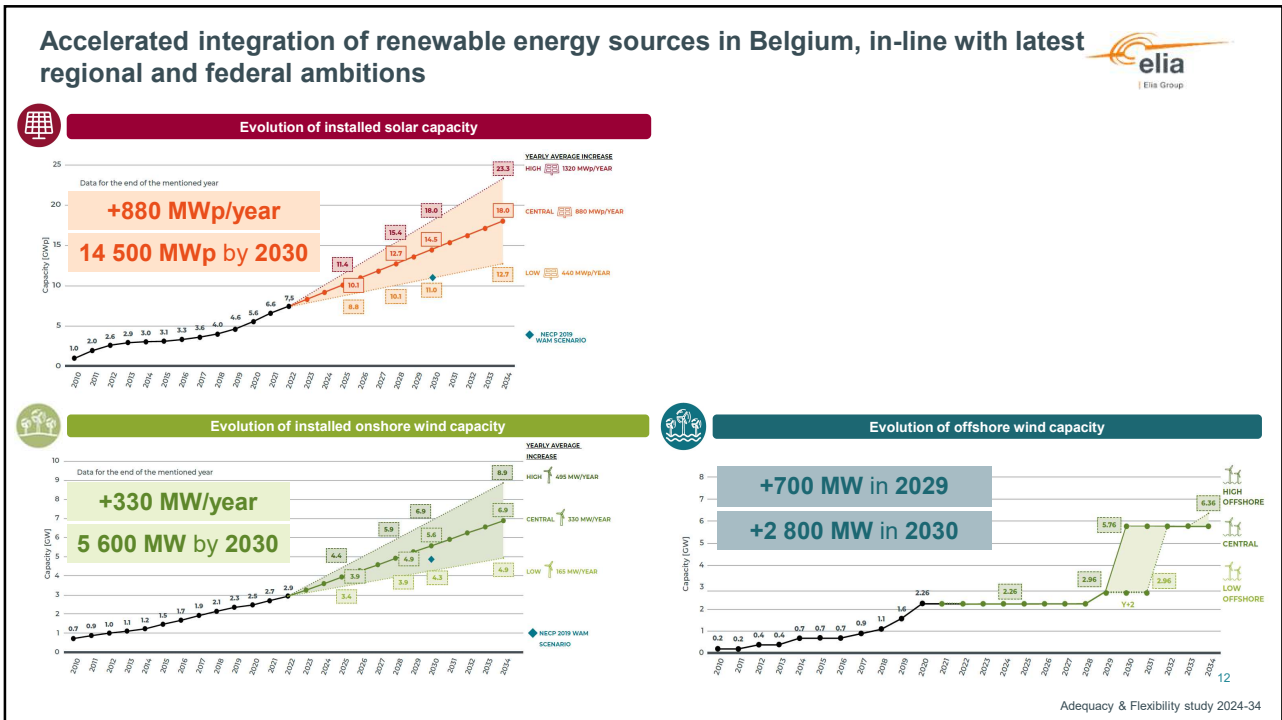
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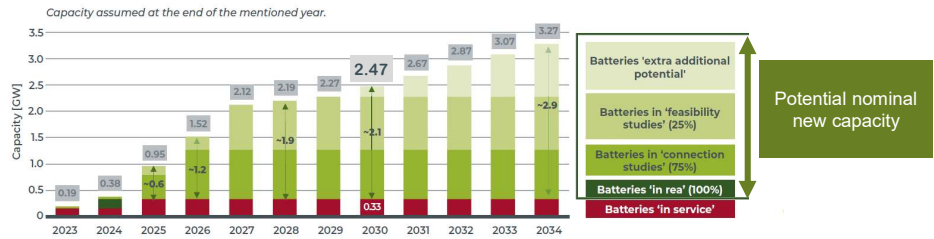
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**A lot of projects of large-scale batteries are in the pipe...
Recent increase in small-scale batteries capacity following subsidy schemes in Flanders**



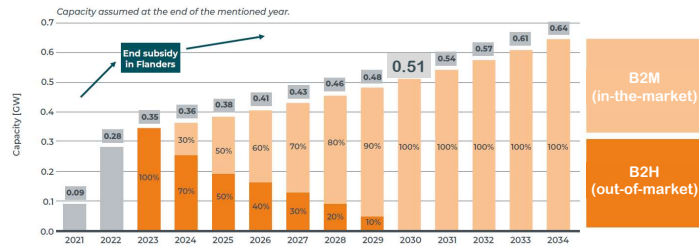
Large-scale batteries

Up to ~2.5 GW by 2030
(depending on the economic viability assessment)

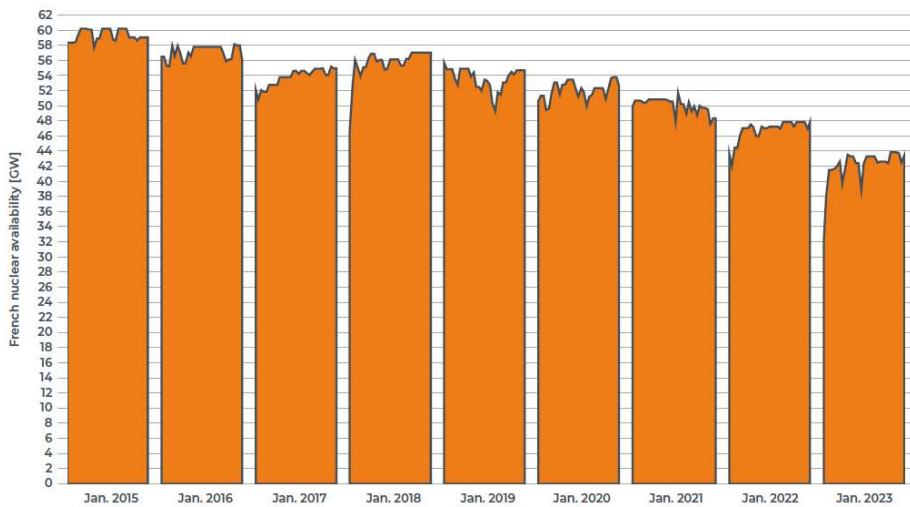


Small-scale batteries

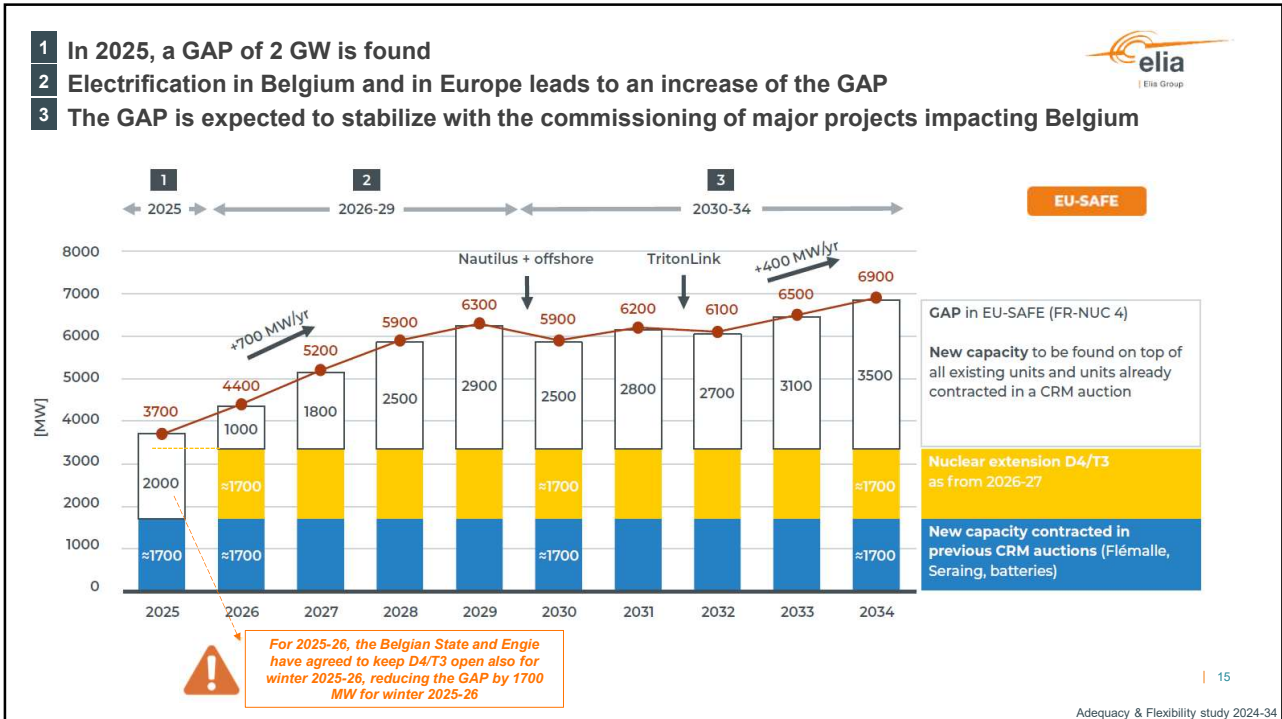
~0.5 GW by 2030
(100% in-the-market)



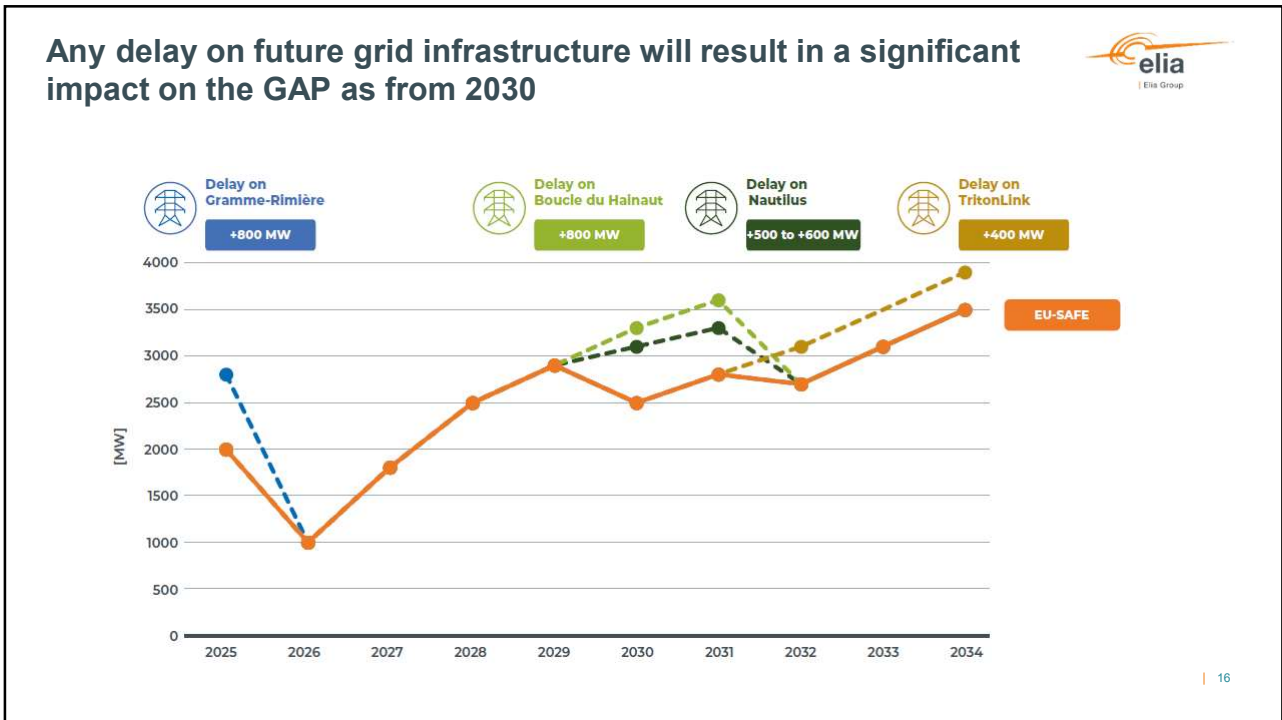
In 2022, in addition to the Russian invasion of Ukraine and a summer drought, French nuclear experienced very low availability



Source: EDF data



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Lower flexibility in residential and industry will lead to an increasing need for additional new capacity



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Equal attention must be paid to short-, medium- and long-term measures



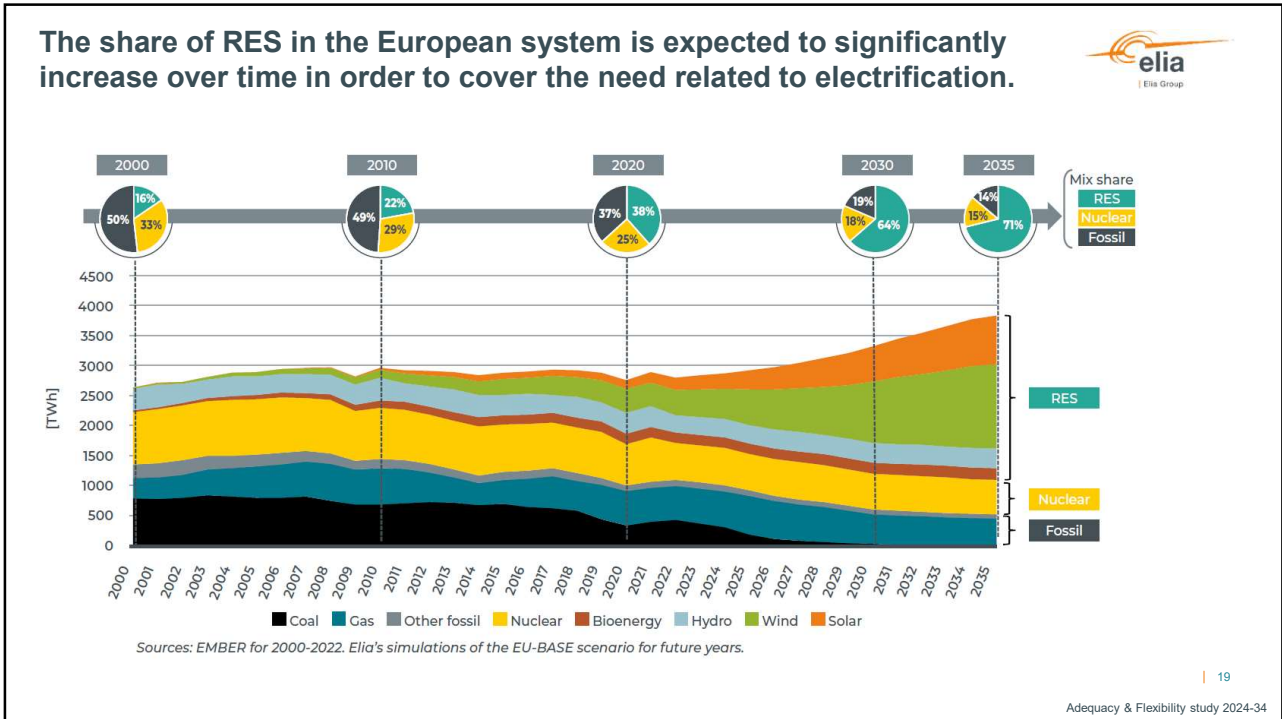
- 2025-2026 Short-Term measures**
 - Flex-LTO of 2 Belgian nuclear units
- 2027-2029 Medium-Term measures**
 - Unlocking new flexibility
 - Prompt realisation of grid infrastructure
 - Refinement of the CRM mechanism
 - Managing periods of excess energy
- 2030-2032 Long-Term measures**
 - Additional offshore wind ambition in BE North Sea (8GW)
 - Investigate additional interconnectors with countries with de-correlated generation surplus

Already agreed upon between Engie and the Belgian State

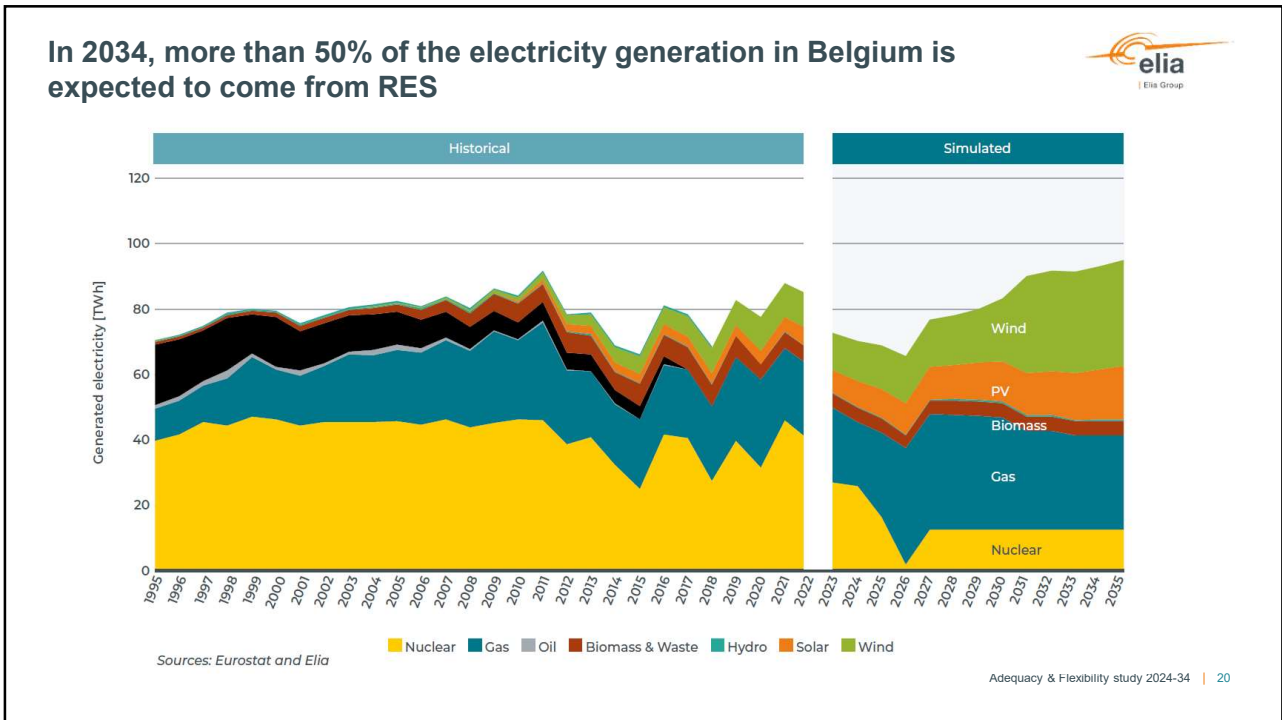


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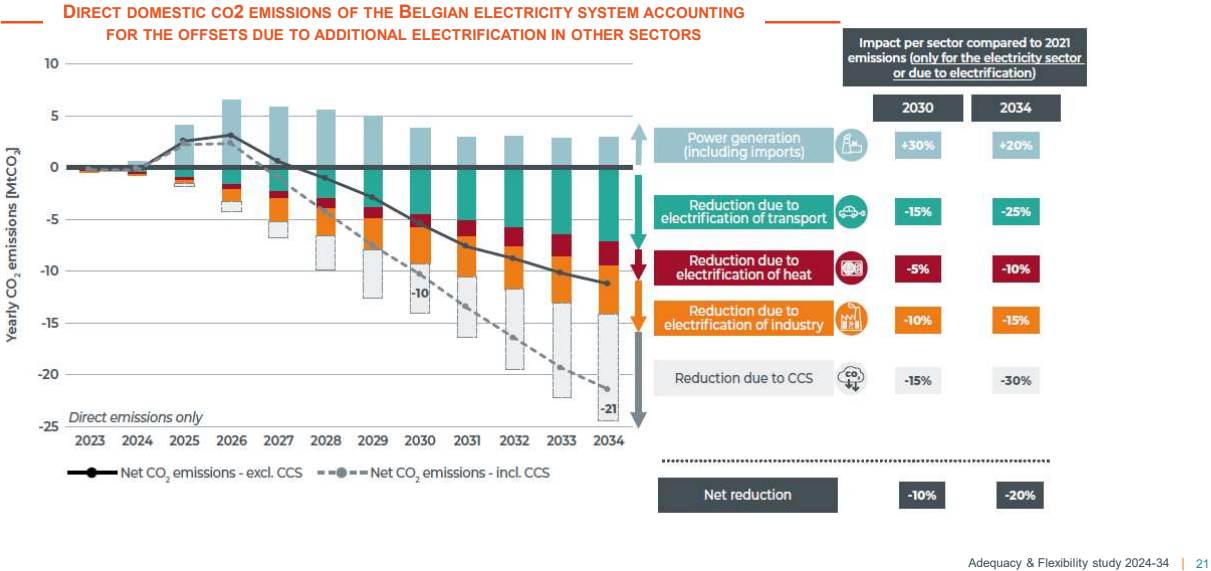


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Additional electrification delivers large benefits in terms of direct domestic CO₂ emission reduction



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THANK YOU VERY MUCH FOR YOUR ATTENTION

The report (>450 pages) can be found online:

<https://elia.group/ADEQFLEX-EN>

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THANK YOU FOR YOUR ATTENTION !

