

Strategic reserve volume determination for winter 2021-22

Data and assumptions for the next volume evaluation:
winters **2021-22**, 2022-23 and 2023-24

Contents

1. Production
 - A. Production – profiled & individually modelled
 - B. Forced outages
2. Demand and other
 - A. Flow-based
 - B. Demand
 - C. Balancing reserves
 - D. Market response

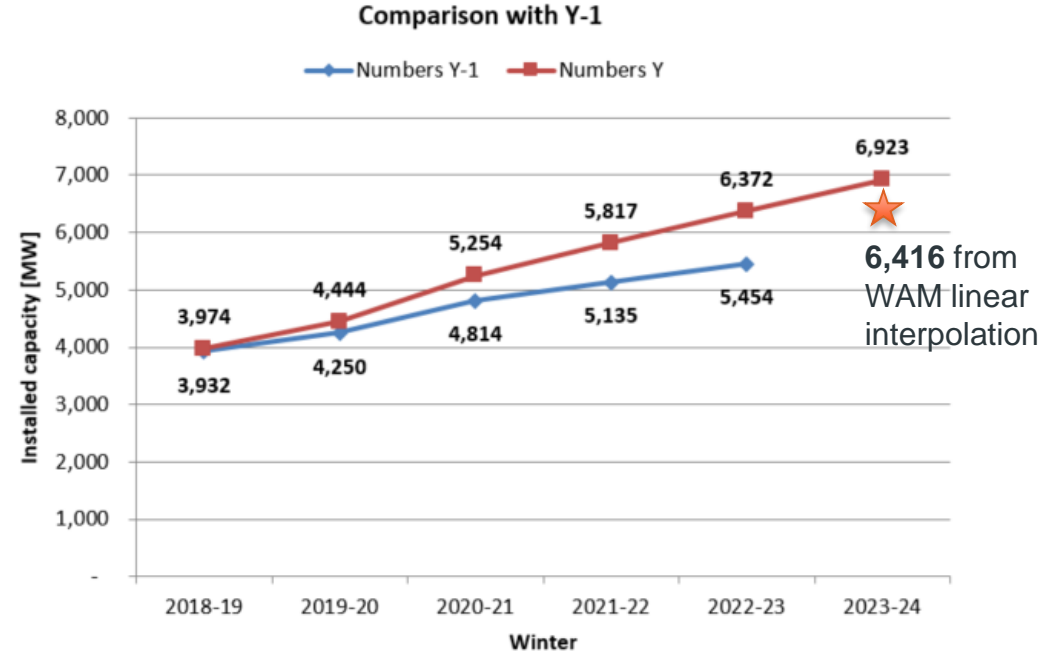
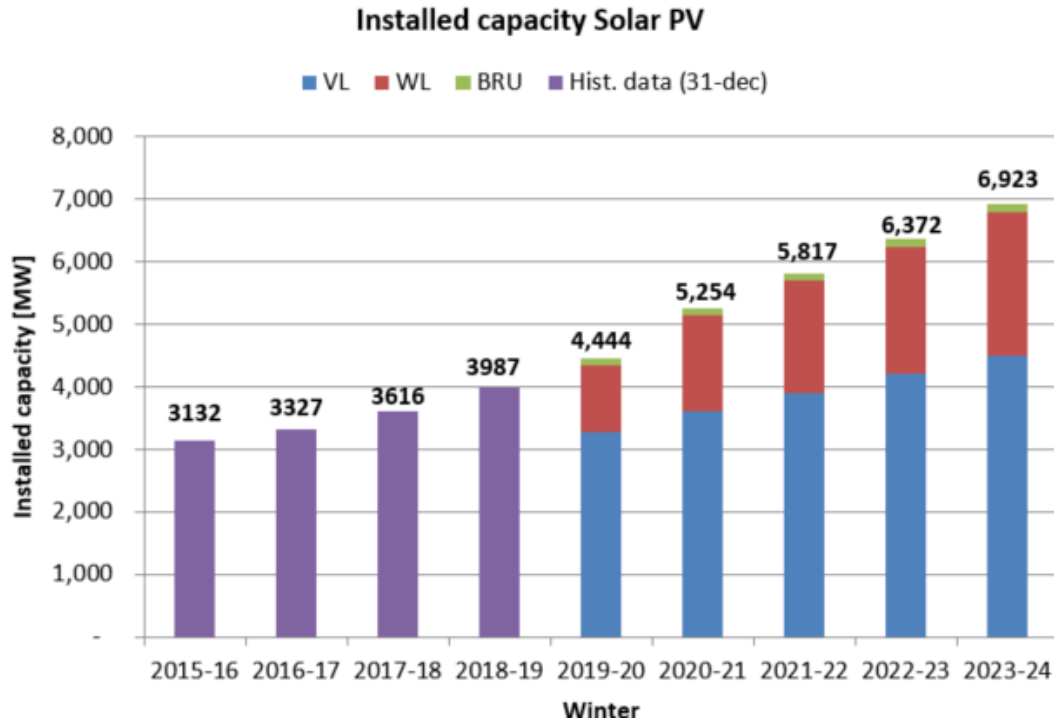


BE Production park

Proposal for hypotheses



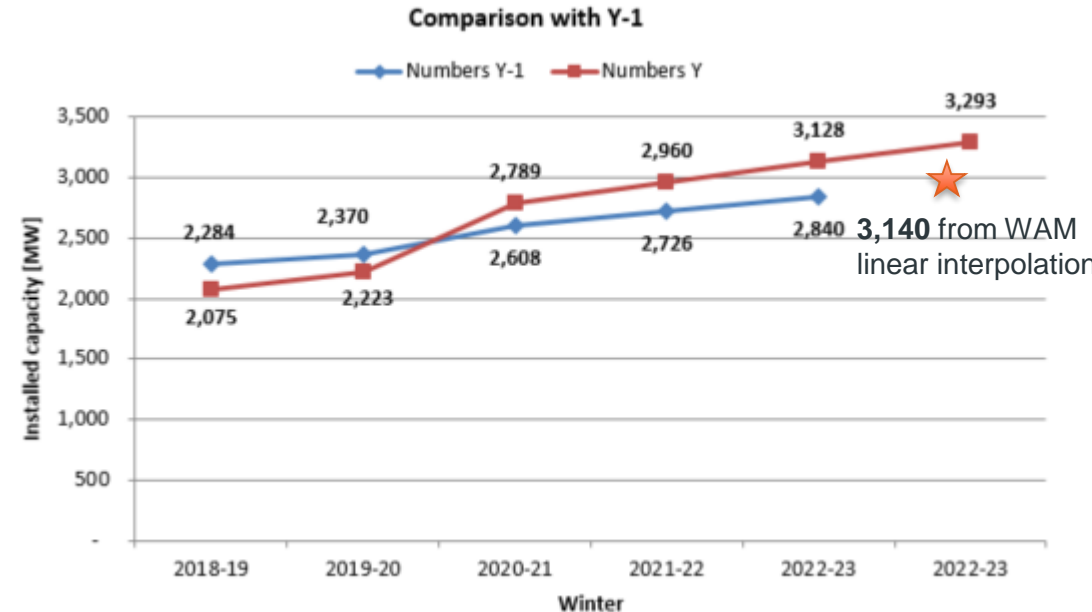
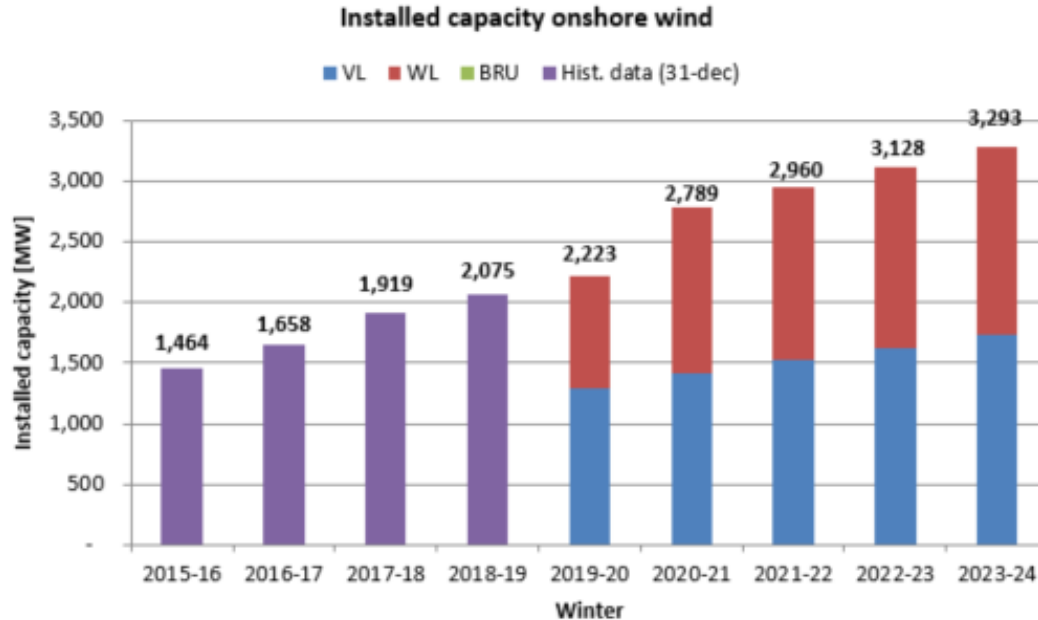
Solar PV – numbers based on information received from regions



Increasing trend due to higher trajectory from WL (+-1000MW)
Trajectory in line with PNEC and WAM scenario



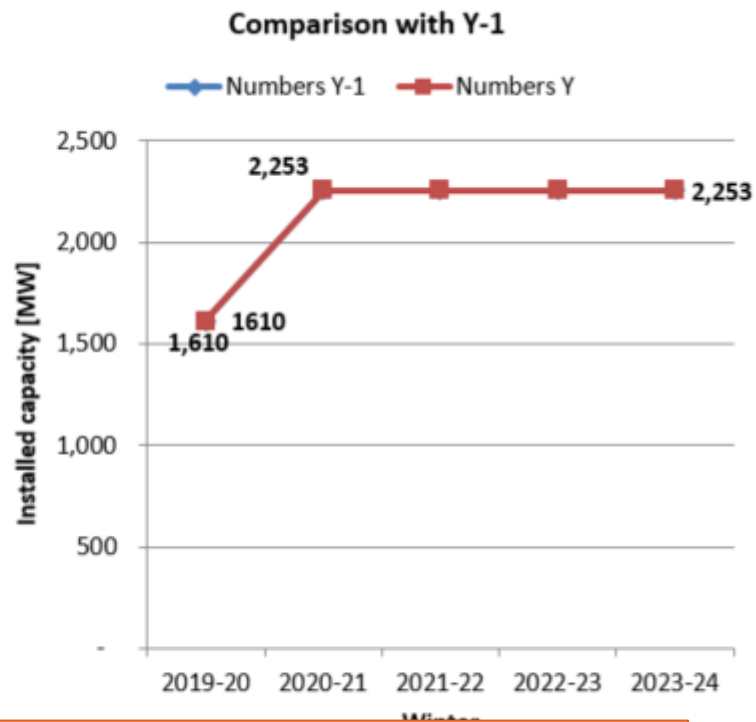
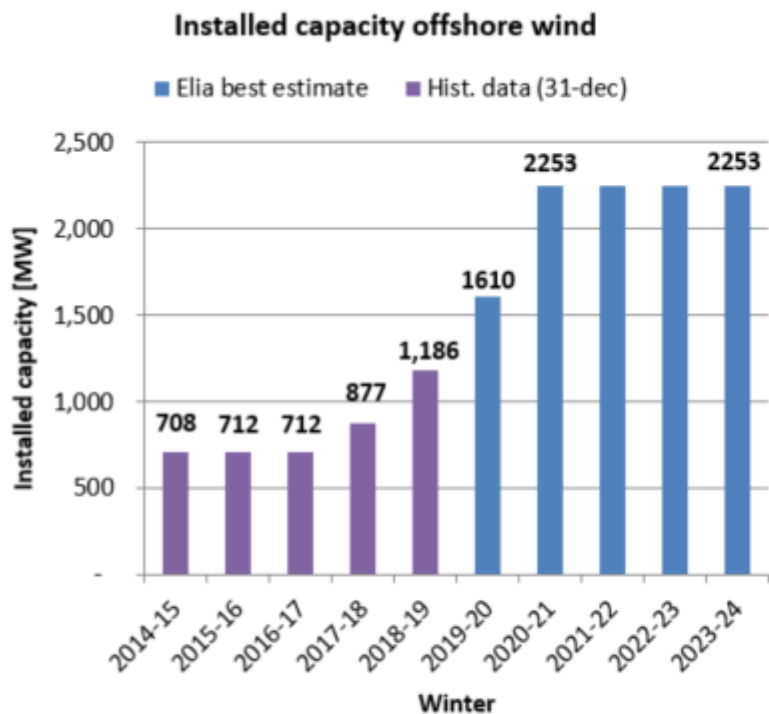
Onshore wind – numbers based on information received from regions



VL and WL regions are a bit more ambitious in their wind trajectories than last year => in line with PNEC and WAM scenario

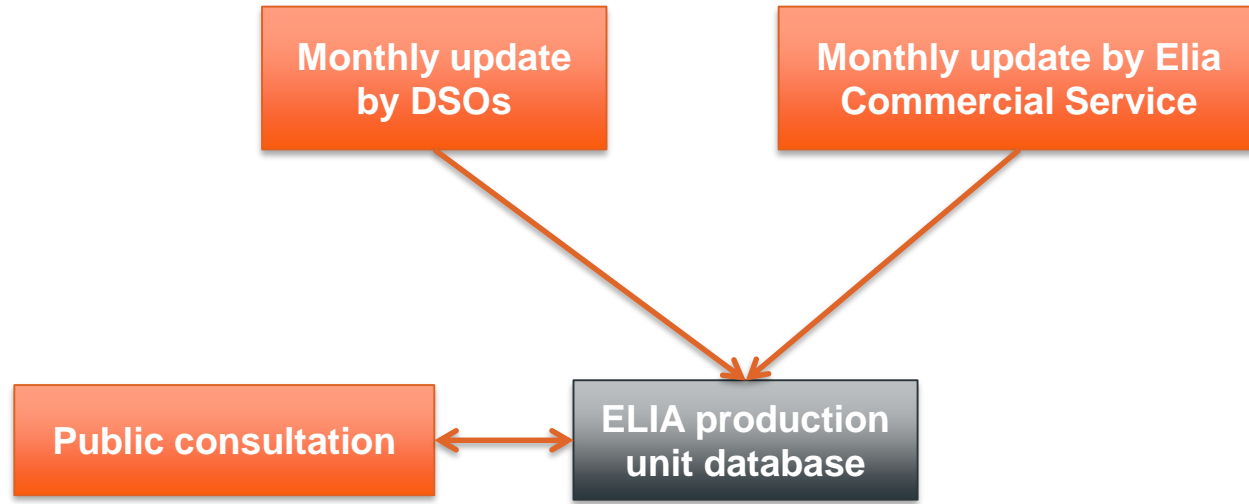


Offshore wind – Elia best estimate



No evolution since last year

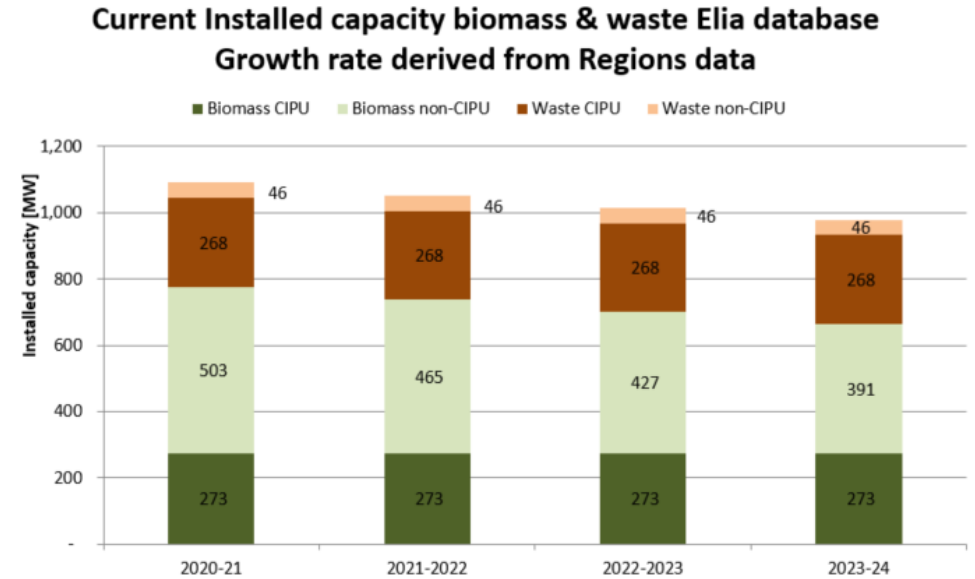
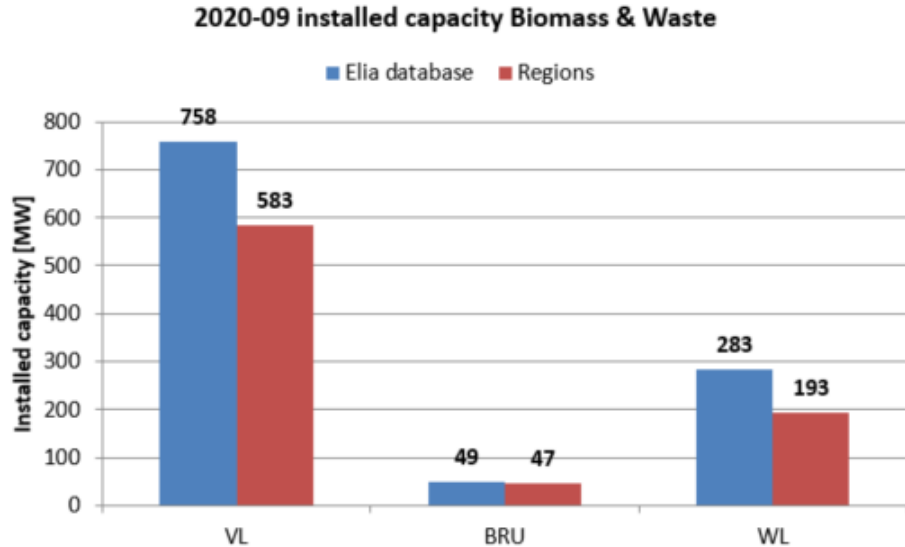
Elia production unit database “PISA”



Database used in multiple processes, allowing for various checks:

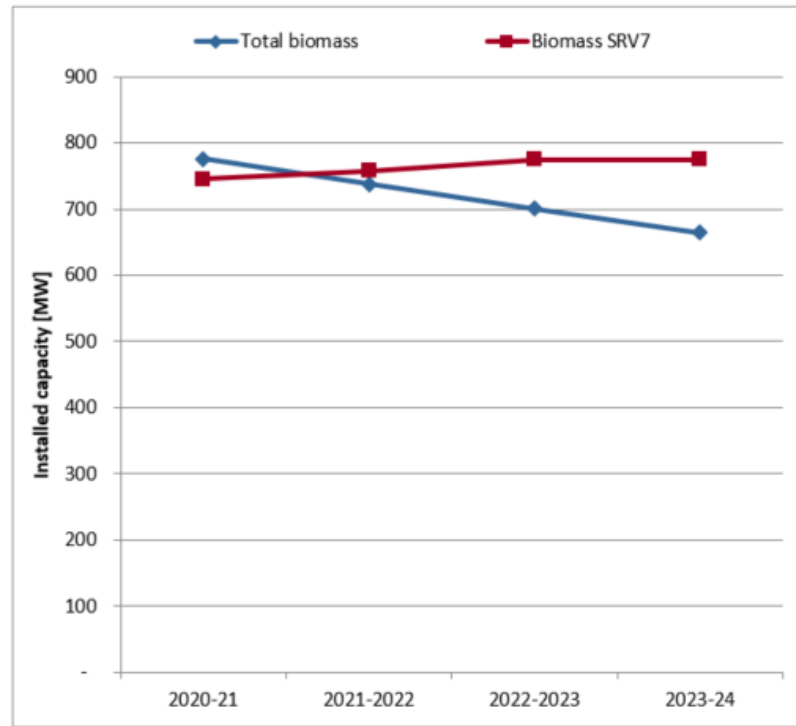
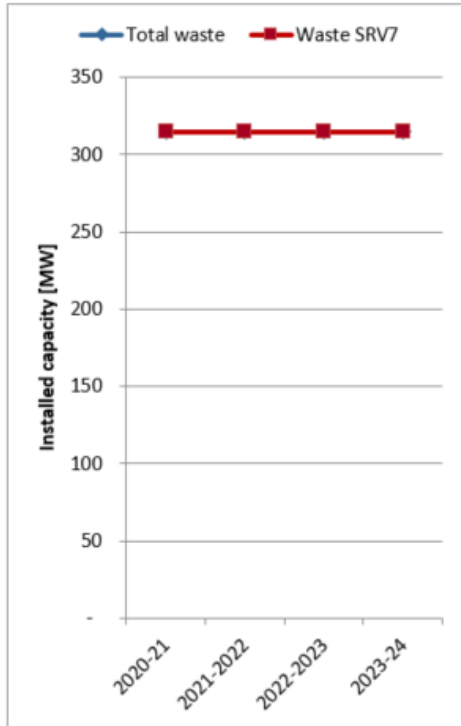
- Grid planning for new/upgrades of connections
- Operational network studies
- Various open statistics

Biomass & waste – comparison with Regions



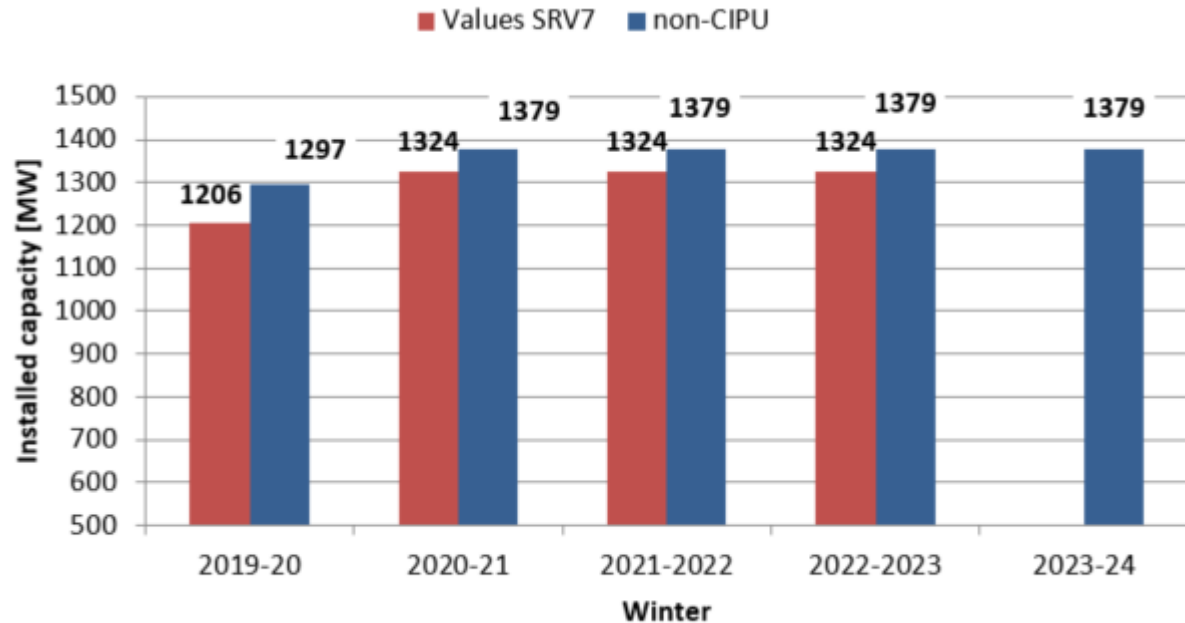
PISA installed capacity + growth rate applied on non-CIPU biomass based PNEC scenario WAM

Biomass & waste – comparison with SR 2020/21 (SRV7)



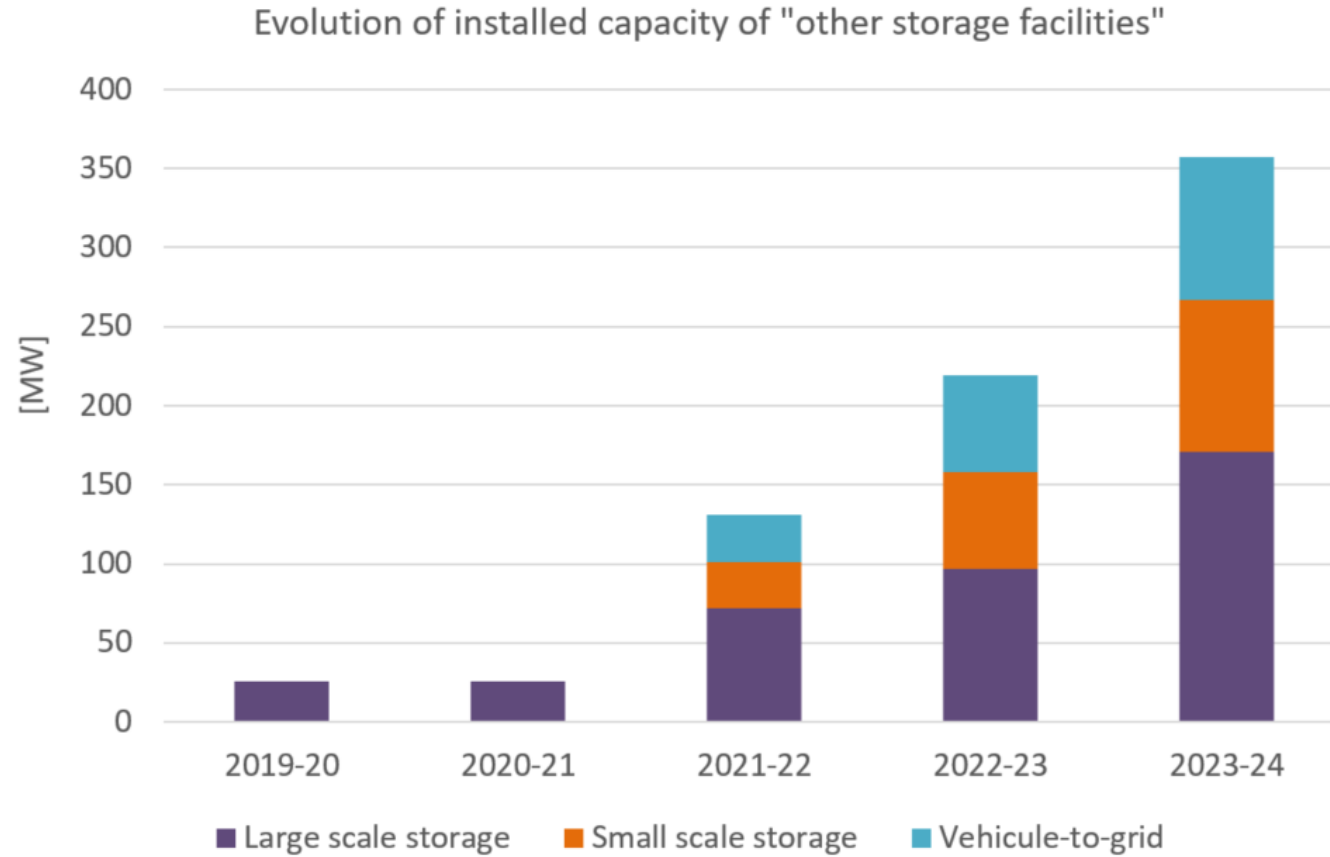
The scenario followed here is aligned with the PNEC scenario WAM. The decreasing trend is projected on the non-CIPU biomass => decrease of ~112MW

Non-CIPU (excl. Bio & Waste)

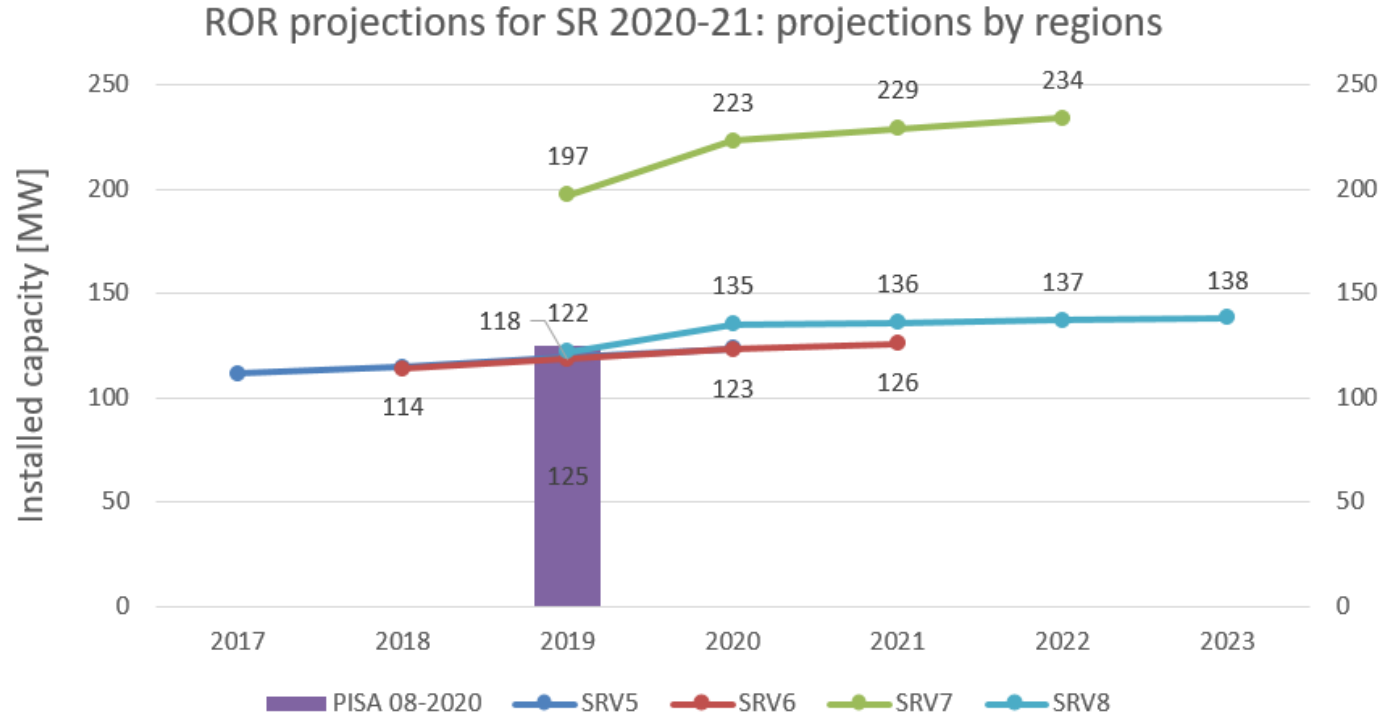


2020-21 retains only 'in service' units
Following winters also take under construction & acquired capacity nominations into account

Storage



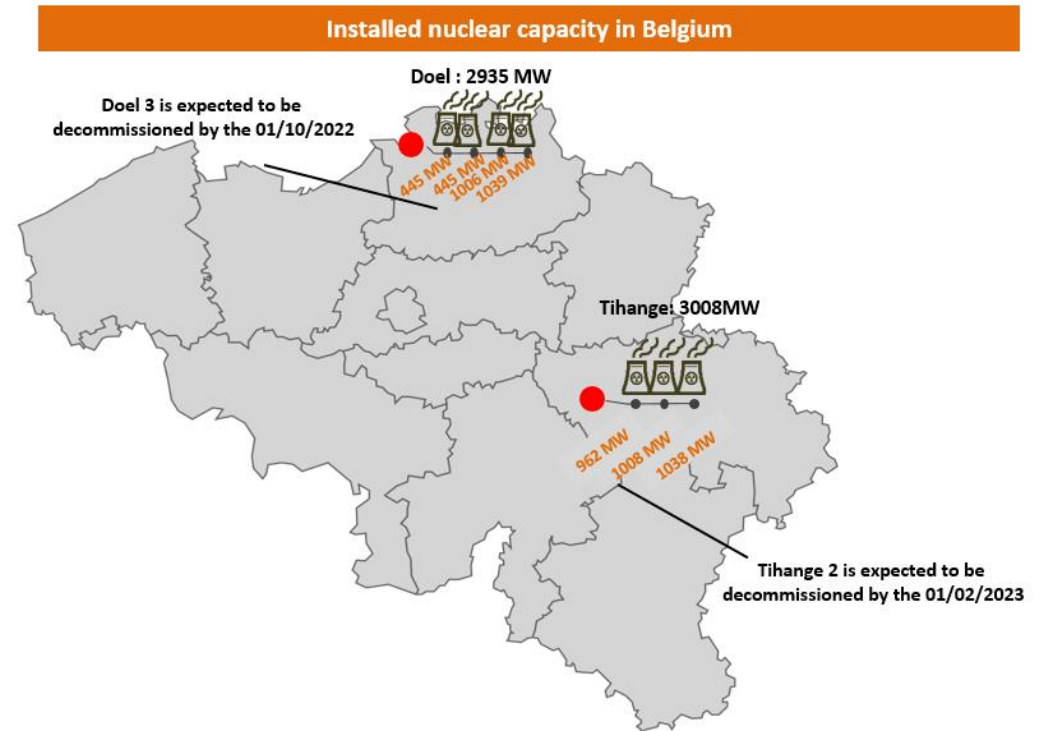
Hydro RoR



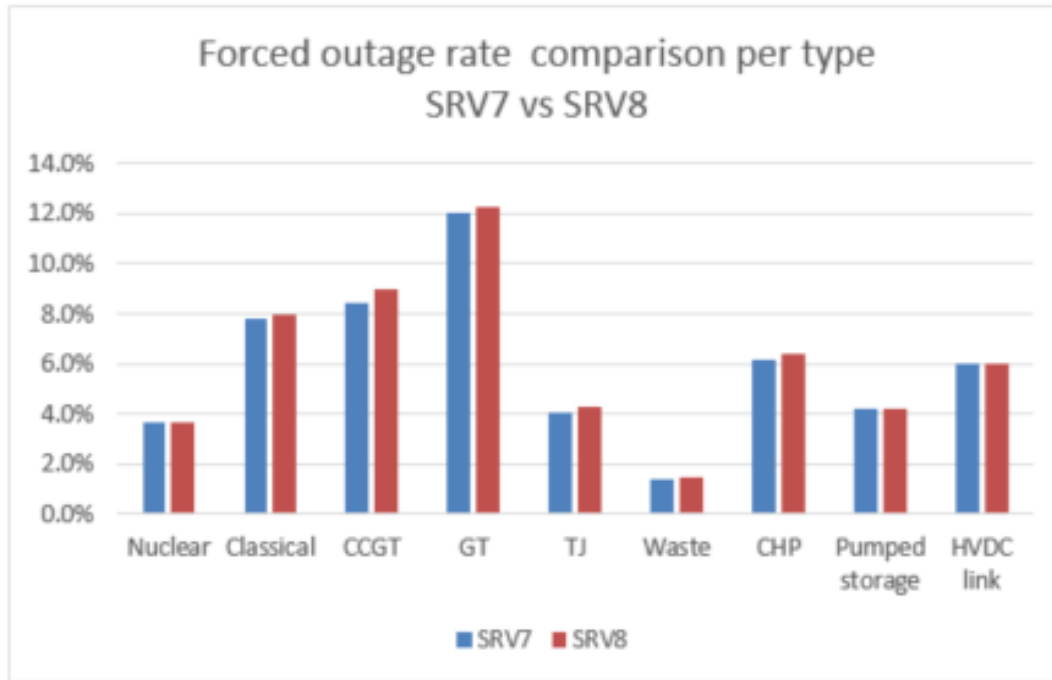
The methodology applied for SRV7 in WL seems to have been corrected => Back to more classic trend for SRV8

Nuclear availability - Base Case based on:

1. In service status:
 - Doel 3 decommission foreseen by law on 01/10/2022
 - Tihange 2 decommission foreseen by law on 01/02/2023
2. Planned maintenance
 - All the announced planned maintenance on REMIT is taken into account



Forced outage rates – update for period 2010-2019



	Average forced outage rate over SRV7	Average forced outage rate over SRV8
Nuclear	3.7%	3.7%
Classical	7.8%	8.0%
CCGT	8.5%	9.0%
GT	12.0%	12.3%
TJ	4.1%	4.3%
Waste	1.4%	1.5%
CHP	6.2%	6.4%
Pumped storage	4.2%	4.2%
HVDC link	6.0%	6.0%

Methodology in line with Adeq flex and CRM, FO calculated on last 10 years

CIPU conventional units

See detailed list.



BE Demand, Market Response & Balancing Reserves & FB

Proposal for hypotheses

Flow-based : framework parameters

Market Parameters	2021	2022	2023
Flow-based perimeter	CORE	CORE	CORE
Bidding zones	As is	As is	As is
minRAM	see table	see table	see table
Treatment of external flows	Standard Hybrid Coupling	Standard Hybrid Coupling	Standard Hybrid Coupling
External constraints	BE: -6500 NL: -6500 NL: +6500	BE: -7500 NL: -6500 NL: +6500	BE: -7500 NL: -6500 NL: +6500
CNEC selection	XB + int > 5%	XB + int > 5%	XB
Use of PST in capacity calculation	BE: 1/2 Other: 1/3	BE: 1/2 Other: 1/3	BE: 1/2 Other: 1/3
Use of PST in capacity allocation (flex in market)	-	-	-
Use of HVDC in capacity calculation	-	-	-
Use of HVDC in capacity allocation (flex in market)	Only Alegro	Only Alegro	Only Alegro

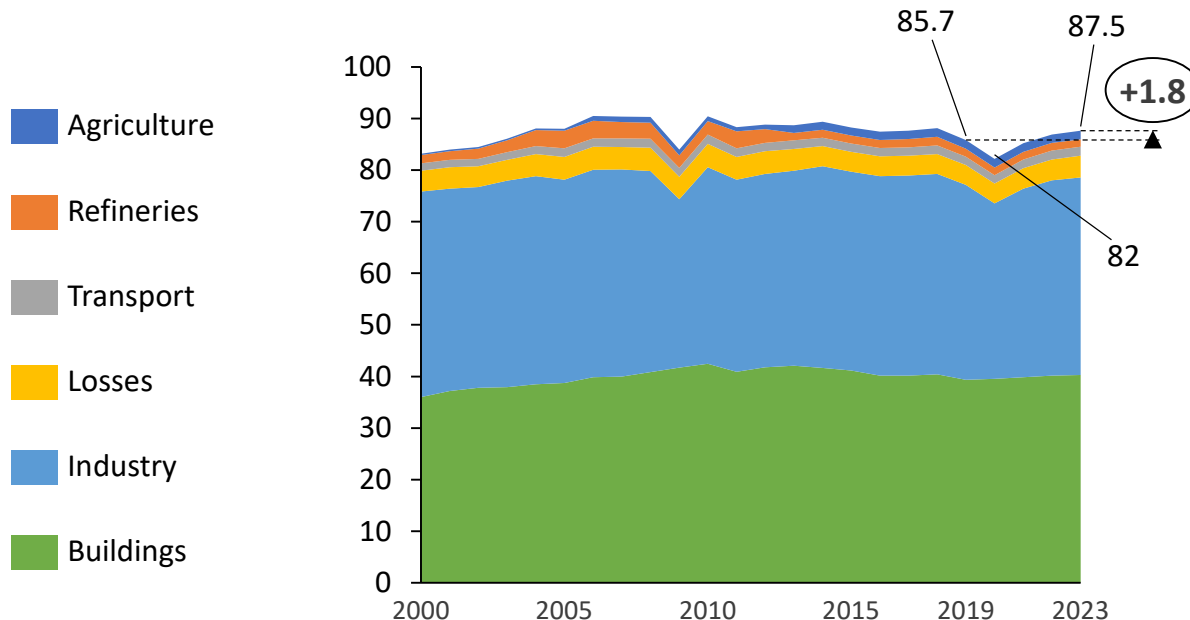
Flow-based

MinRAM trajectories

Country	2020	2021	2022	2023	Justification
Netherlands	28.0	37.0	45.0	53.0	Action plan for most constraining XB CNEC
Belgium*	70.0	70.0	70.0	70.0	*with application of derogation
Germany	21.3	31.0	40.8	50.5	Action plan
France	70.0	70.0	70.0	70.0	
Slovenia	70.0	70.0	70.0	70.0	
Hungary	70.0	70.0	70.0	70.0	
Kroatia	70.0	70.0	70.0	70.0	
Romania	70.0	70.0	70.0	70.0	
Czechia	70.0	70.0	70.0	70.0	
Austria	70.0	70.0	70.0	70.0	
Slovakia	70.0	70.0	70.0	70.0	
Poland	70.0	70.0	70.0	70.0	

The final electricity consumption increases by 2.5 TWh between 2019 and 2023 in the illustrative scenario

Final electricity consumption – total [TWh]



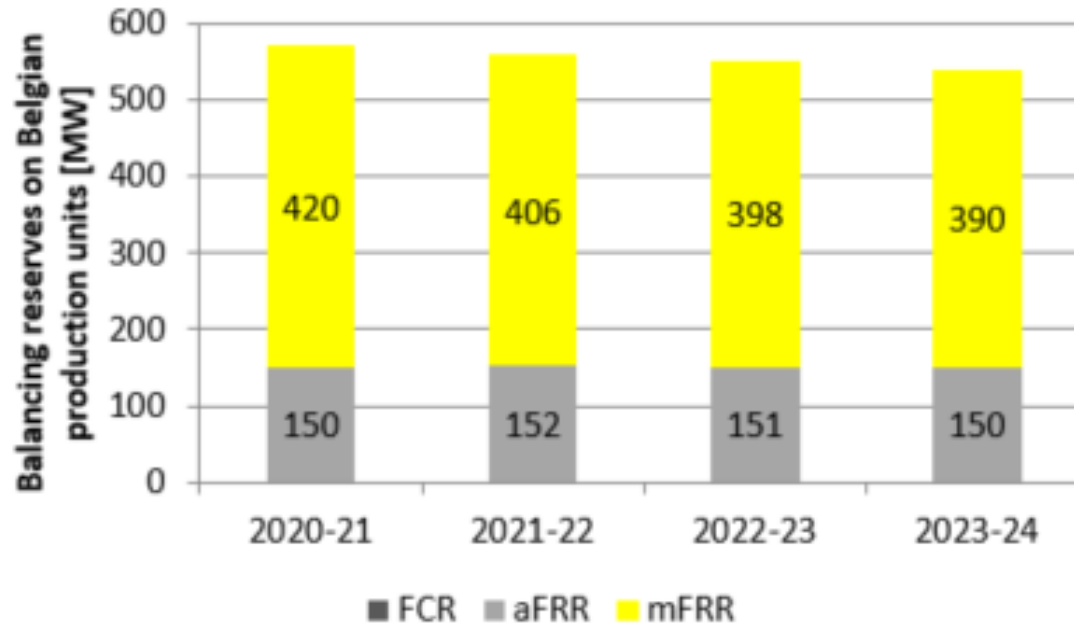
[Power BI](#)

Scenario taking into account the COVID crisis => drop to 82TWh in 2020

Sources: Climact - BECalc



Balancing reserves



This is a best estimate on would be contracted on production units taking into account cross-border balancing, DSM, storage ...

Market response – volumes to be taken into account

Results from the “Market Response” subgroup of the TF iSR will be used. These were presented during the TF iSR 08/07/2020.

Market Response volume [MW]	Measured	Extrapolation			
		Winters under consideration			
	2019-20	2020-21	2021-22	2022-23	2023-24
7% growth	1041	1114	1192	1275	1365

An intermediary trend of 7% is proposed (taking into account projects, opinion from stakeholders and consistency with the 7% applied in last year study)