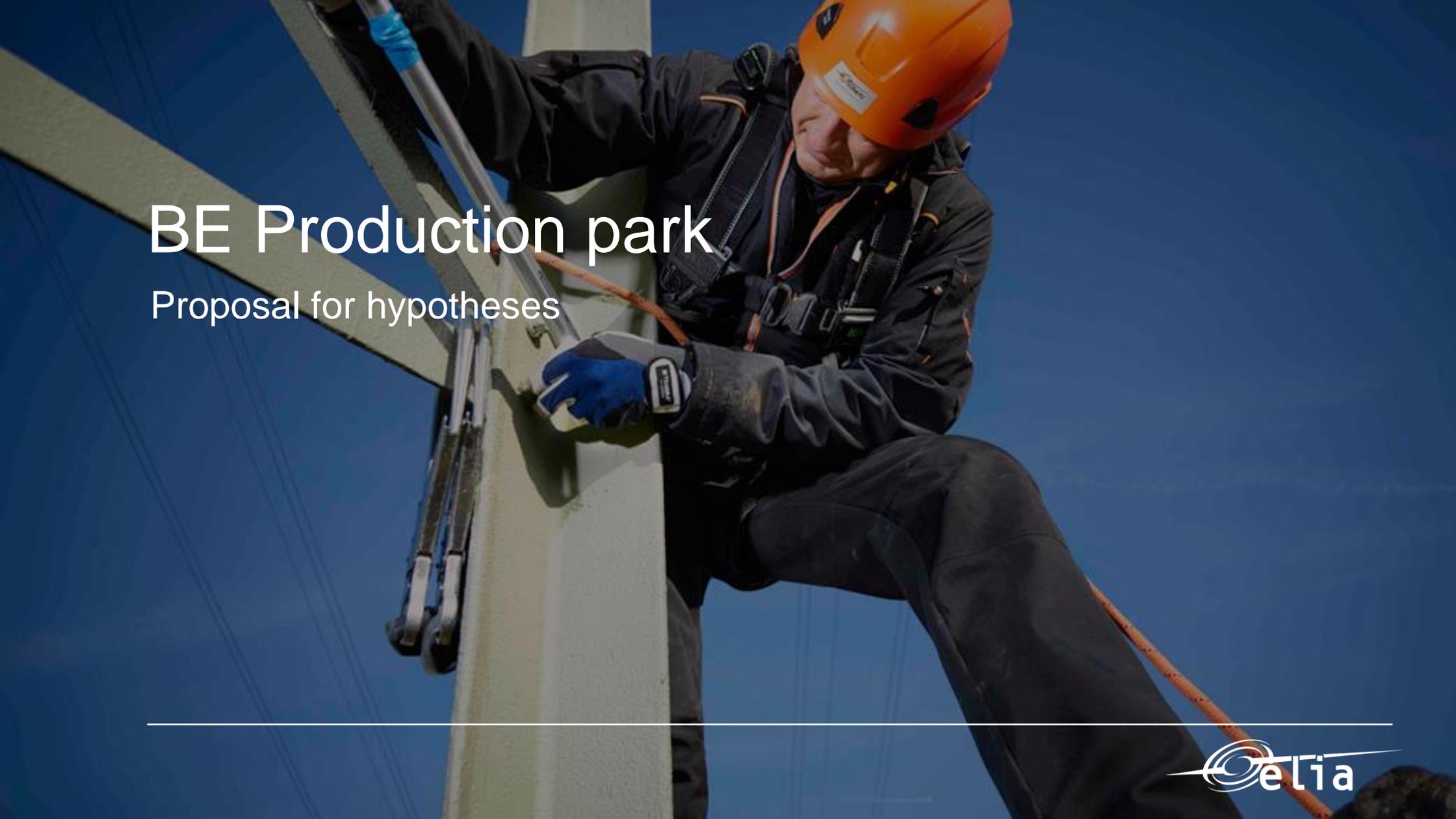# Strategic reserve volume determination for winter 2019-20

Data and assumptions for the next volume evaluation:
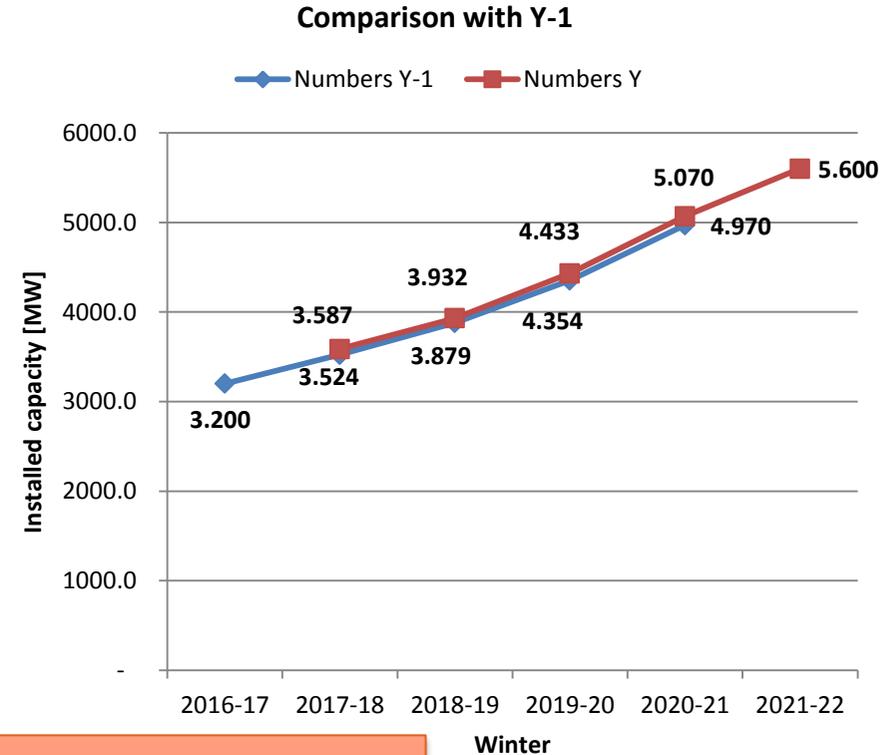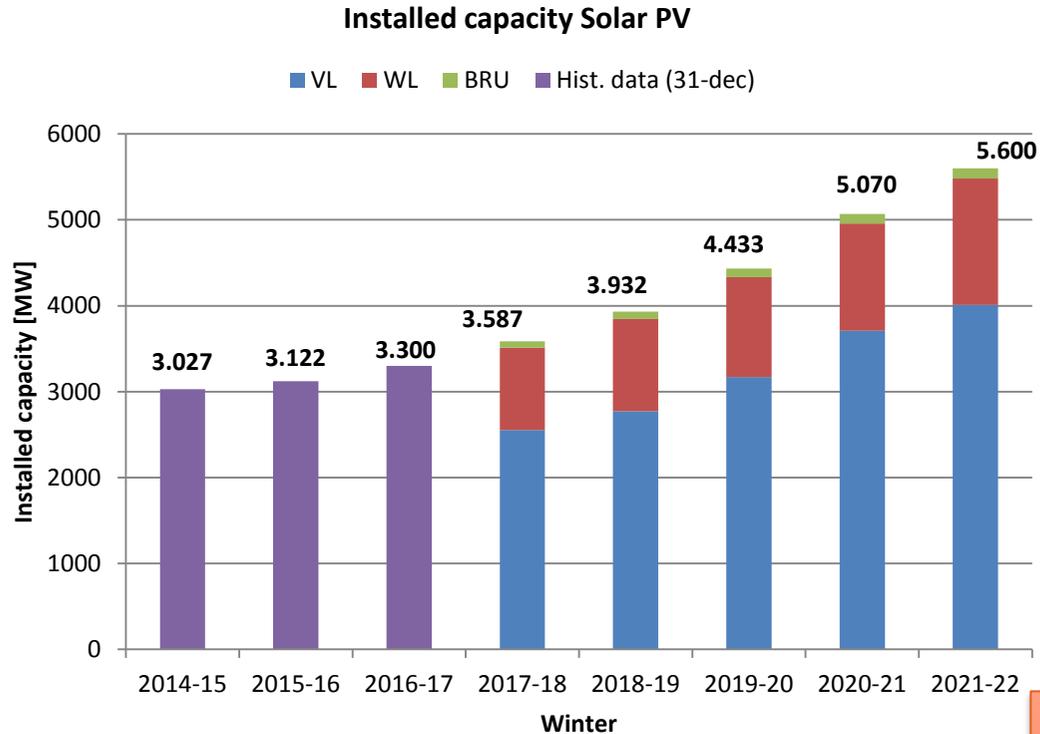winters **2019-20**, 2020-21 and 2021-22

Contents

Data for Belgium

BE Production park

Proposal for hypotheses

Solar PV – numbers based on information received from regions

Installed capacity Solar PV

Legend: VL, WL, BRU, Hist. data (31-dec)

Values: 3.027, 3.122, 3.300, 3.587, 3.932, 4.433, 5.070, 5.600

Comparison with Y-1

Numbers Y-1, Numbers Y

Values: 3.200, 3.524, 3.587, 3.879, 3.932, 4.354, 4.433, 4.970, 5.070, 5.600

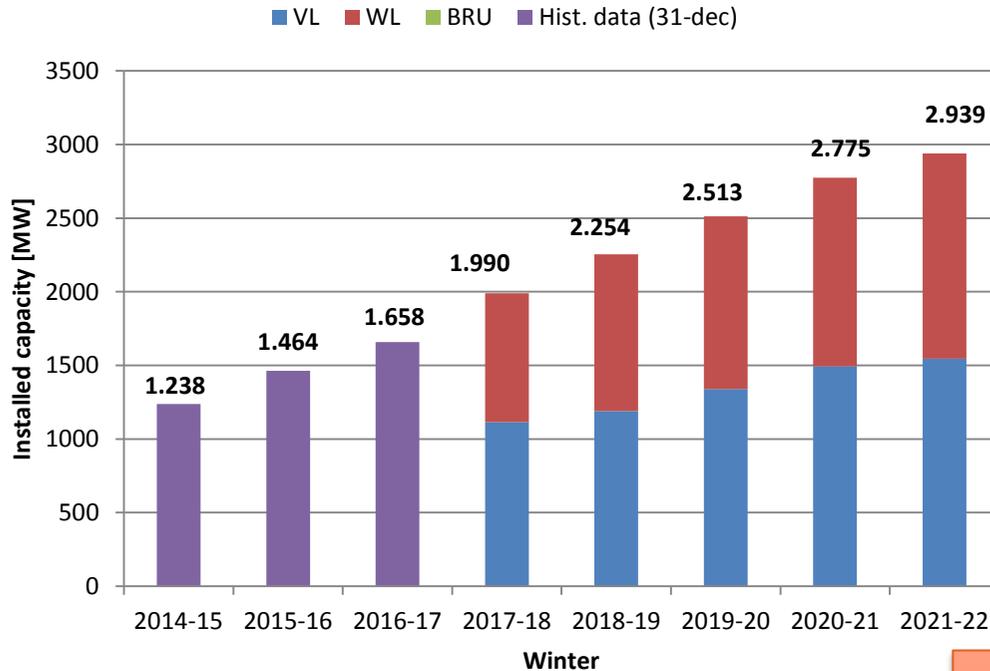**No significant increase compared to Y-1**

Onshore wind – numbers based on information received from regions

Installed capacity onshore wind

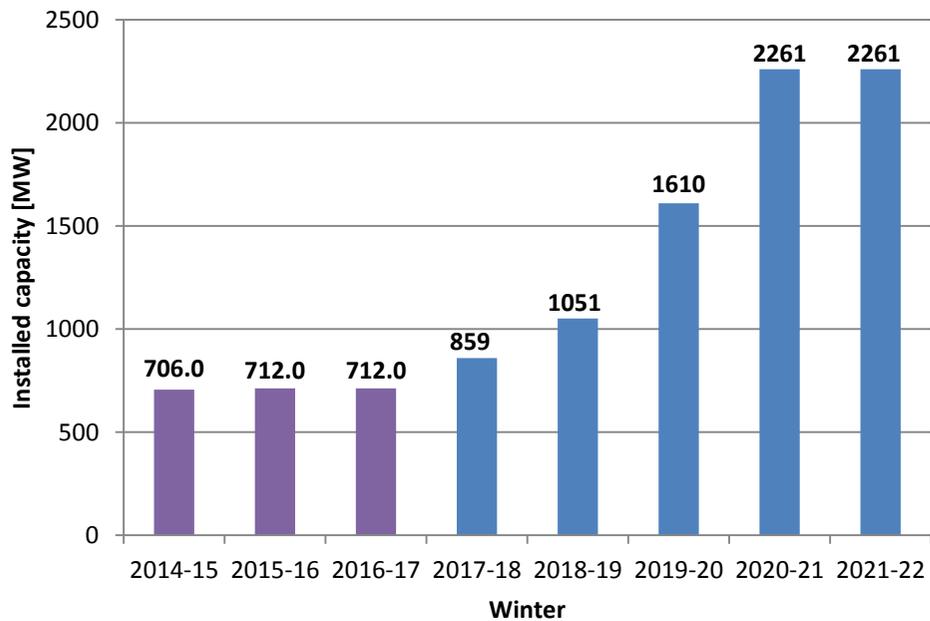Legend: VL, WL, BRU, Hist. data (31-dec)

Installed capacity [MW] by Winter:

Winter	Value
2014-15	1.238
2015-16	1.464
2016-17	1.658
2017-18	1.990
2018-19	2.254
2019-20	2.513
2020-21	2.775
2021-22	2.939

Comparison with Y-1

Legend: Numbers Y-1, Numbers Y

Installed capacity [MW] by Winter:

Winter	Numbers Y-1	Numbers Y
2016-17	1.696	
2017-18	1.915	1.990
2018-19	2.165	2.254
2019-20	2.414	2.513
2020-21	2.663	2.775
2021-22		2.939

Increase of ~100 MW compared to Y-1

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Offshore wind – Elia best estimate

Installed capacity offshore wind

Comparison with Y-1

Elia production unit database

```
┌─────────────────────┐         ┌─────────────────────────┐
│  Monthly update     │         │  Monthly update by Elia │
│  by DSOs            │         │  Commercial Service     │
└─────────────────────┘         └─────────────────────────┘
            ╲                      ╱
             ╲                    ╱
              ╲                  ╱
               ▼                ▼
┌──────────────────┐     ┌─────────────────────┐
│ Public           │ ◄──►│  ELIA production    │
│ consultation     │     │  unit database      │
└──────────────────┘     │  (PISA)             │
                         └─────────────────────┘
```
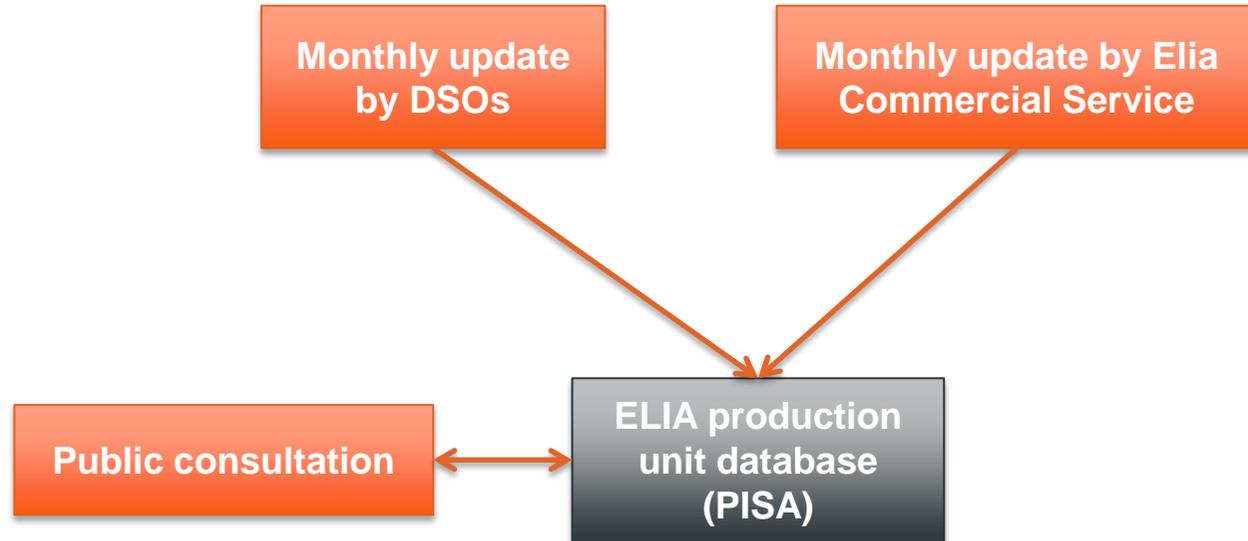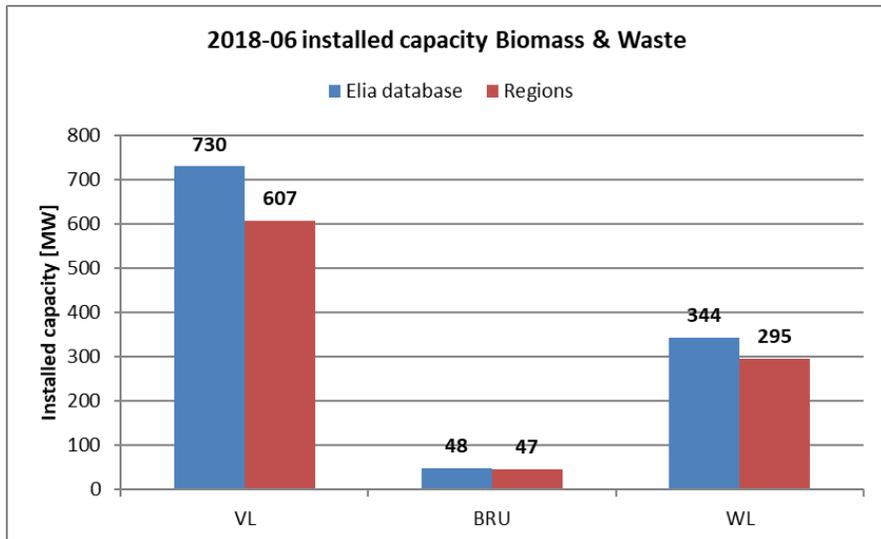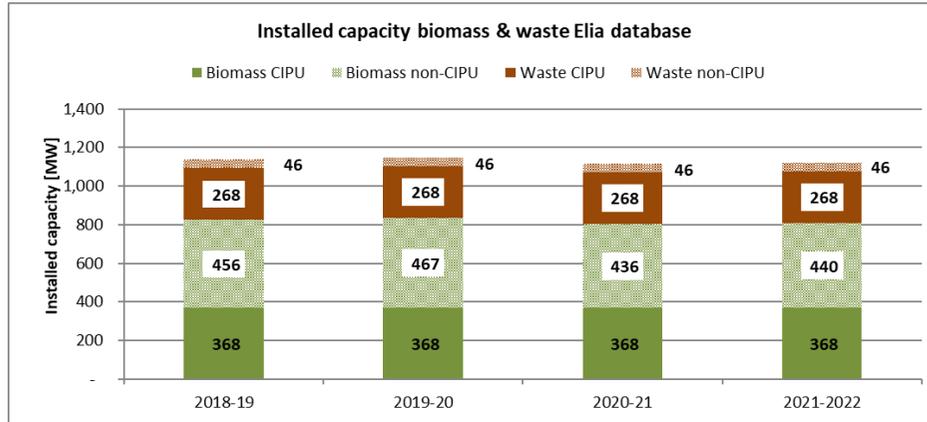
Database used in multiple processes, allowing for various checks:

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

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Biomass & waste – comparison with Regions

Installed capacity biomass & waste Elia database

2018-06 installed capacity Biomass & Waste

We believe the installed bio/waste capacity is underestimated by the regions based on Elia Database encodings.

**We use the regional data as a sanity check & to deduce the future growth rates.**

Biomass & waste – comparison with SR 2018/19
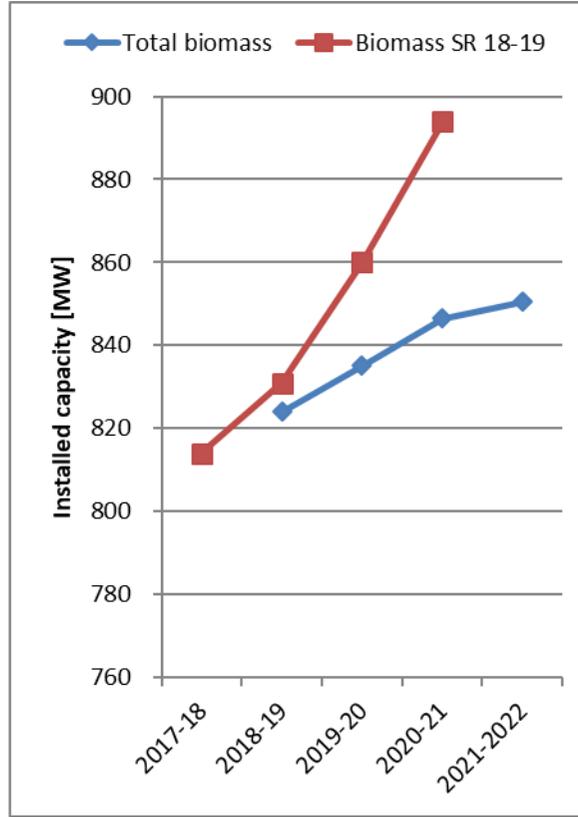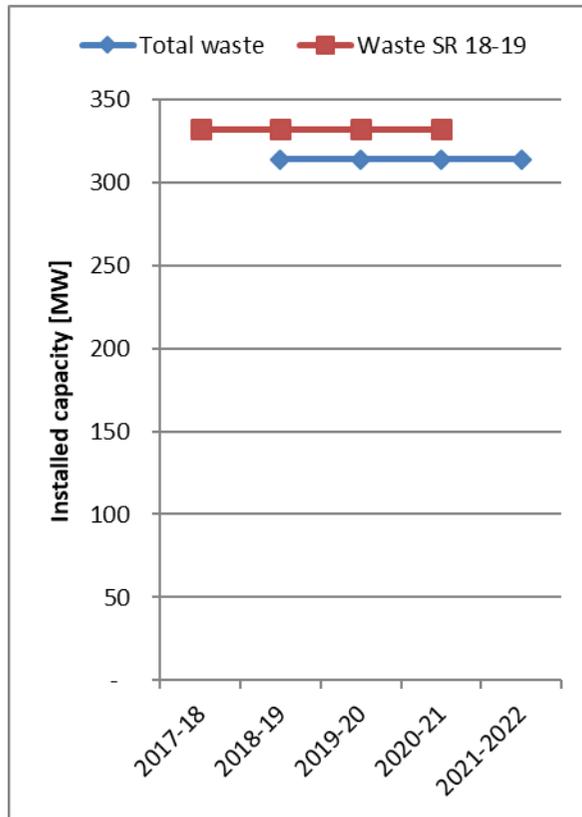
"Waste" is lower due to a data quality issue found in SR 2018/19 which is corrected now for SR 2019/20 concerning unit Ipalle Thumaide GTA2

The "Bio" current value is based on Elia Database and the forecast applies the relative evolution as given by the regions.
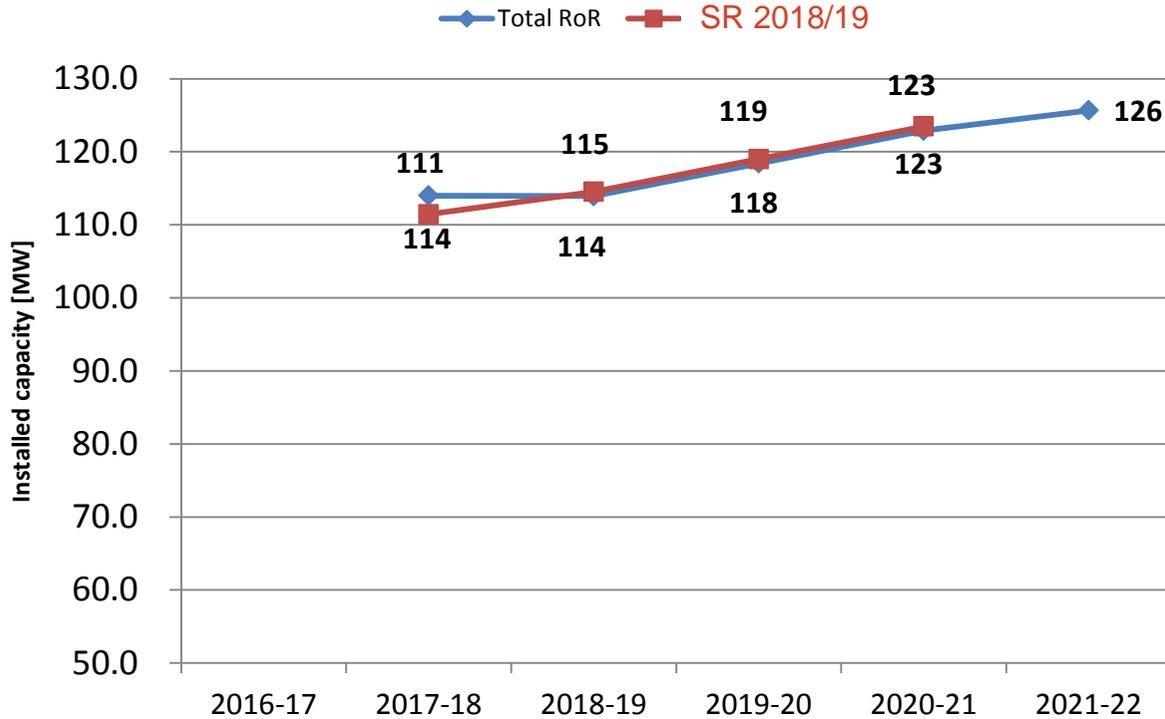
Non-CIPU (excl. Bio & Waste)
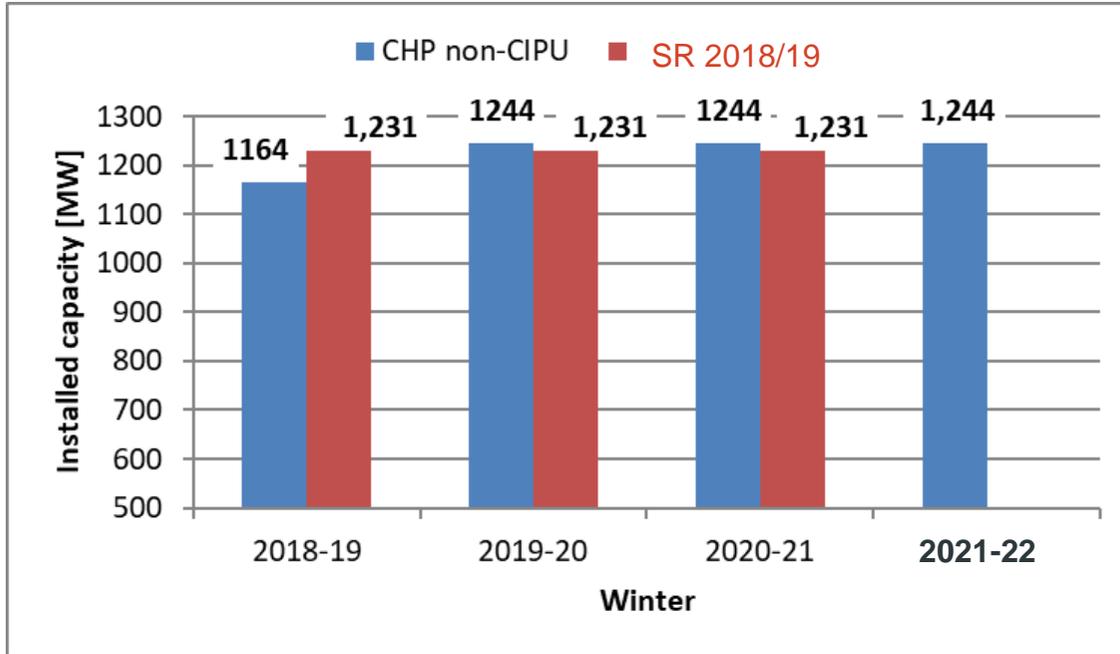
2018-19 retains only 'in service' units

Following winters also take reserved & acquired capacity nominations into account
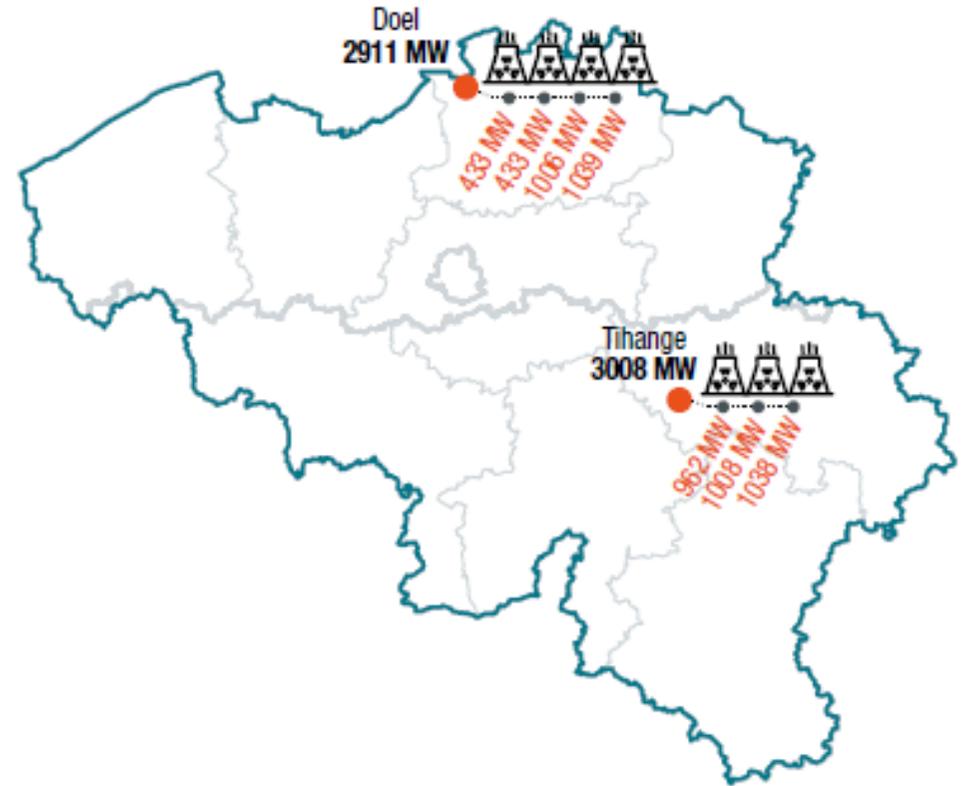
For this year the installed capacity is still under last year's forecast, but we are showing a July Elia Database snapshot
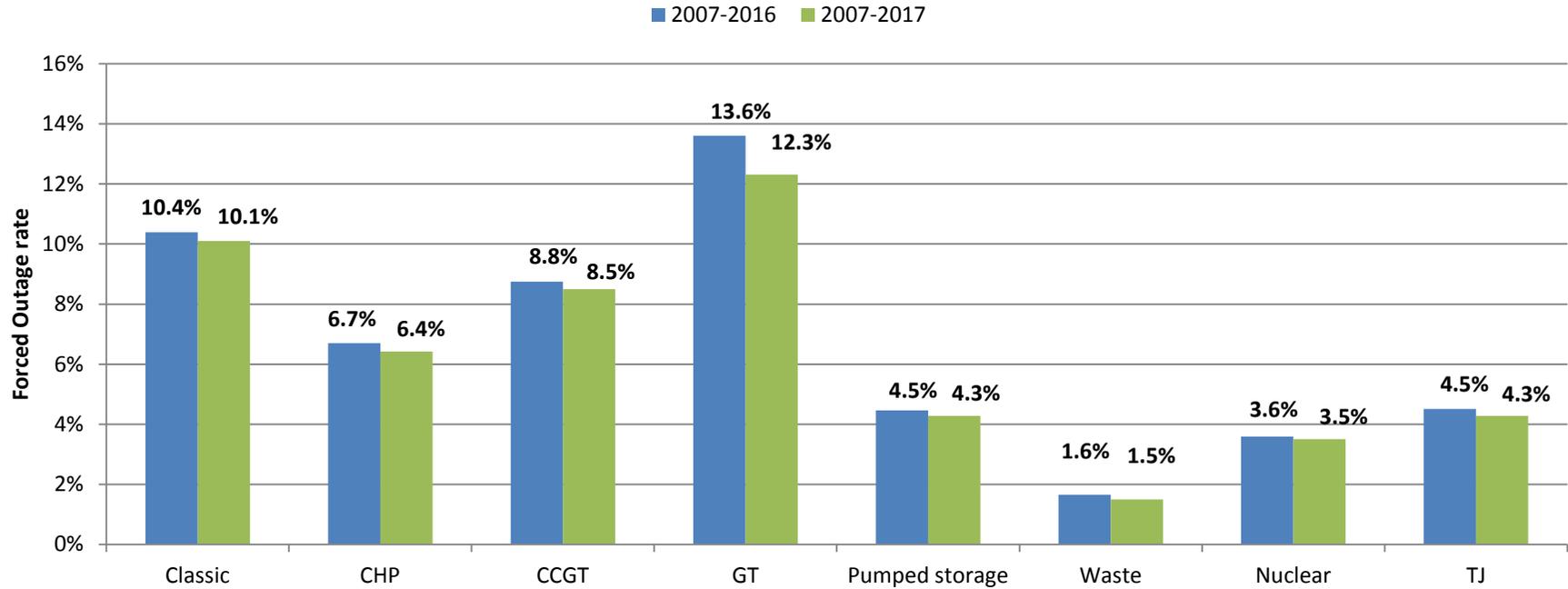
Hydro RoR

Stable values compared to last year

Nuclear availability:
Full availability is assumed
in the base case

Doel
2911 MW
433 MW · 433 MW · 1006 MW · 1039 MW

Tihange
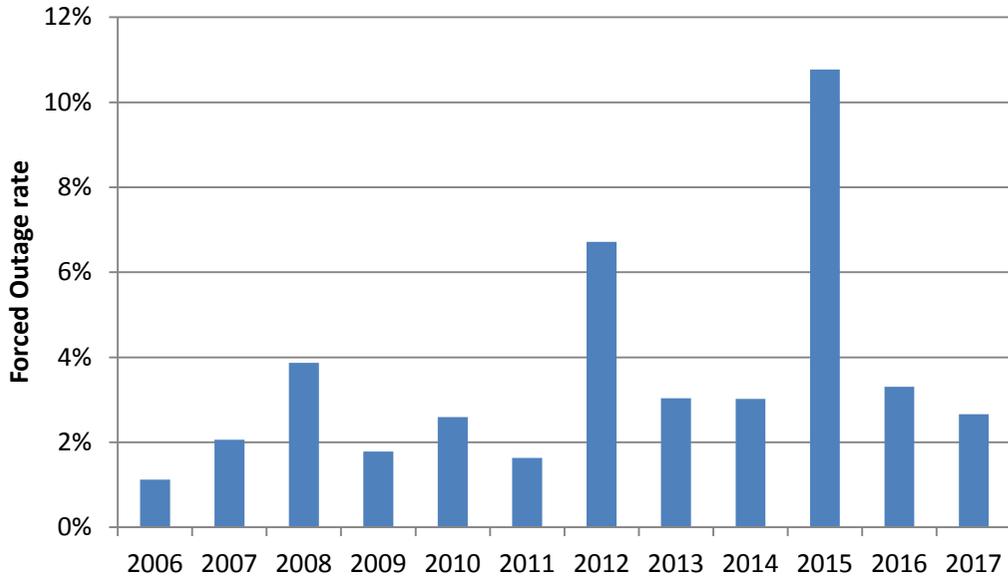**3008 MW**
962 MW · 1008 MW · 1038 MW

Forced outage rates – update for period 2007-2017

Small reduction in FO rates when 2017 data is considered
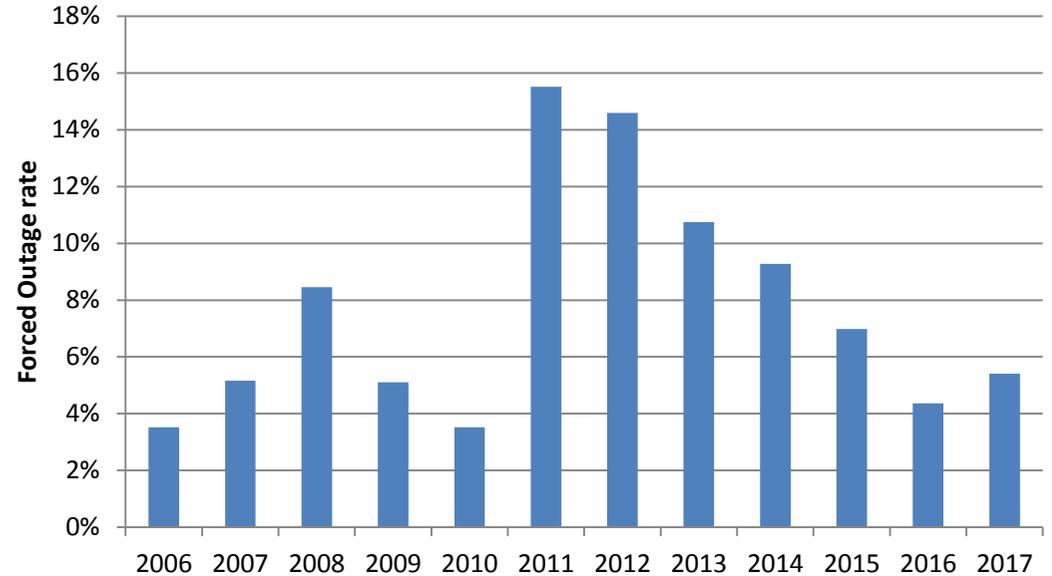
Forced outage rate evolution – Nuclear & CCGT

Nuclear forced outage rate

CCGT forced outage rate
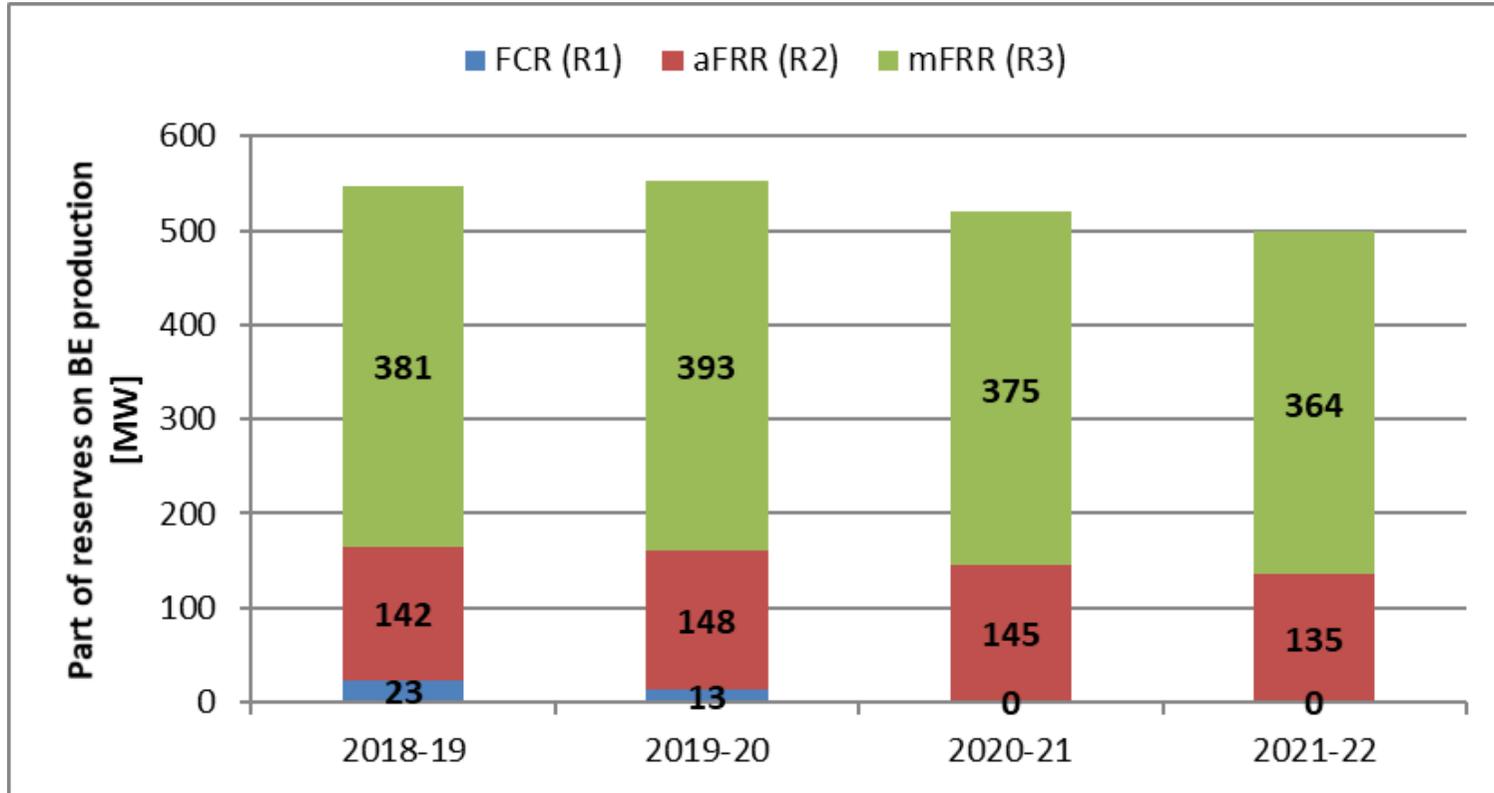
CIPU conventional units

See detailed list in XLS file → Sheet "1.2 Ind. mod. thermal prod"

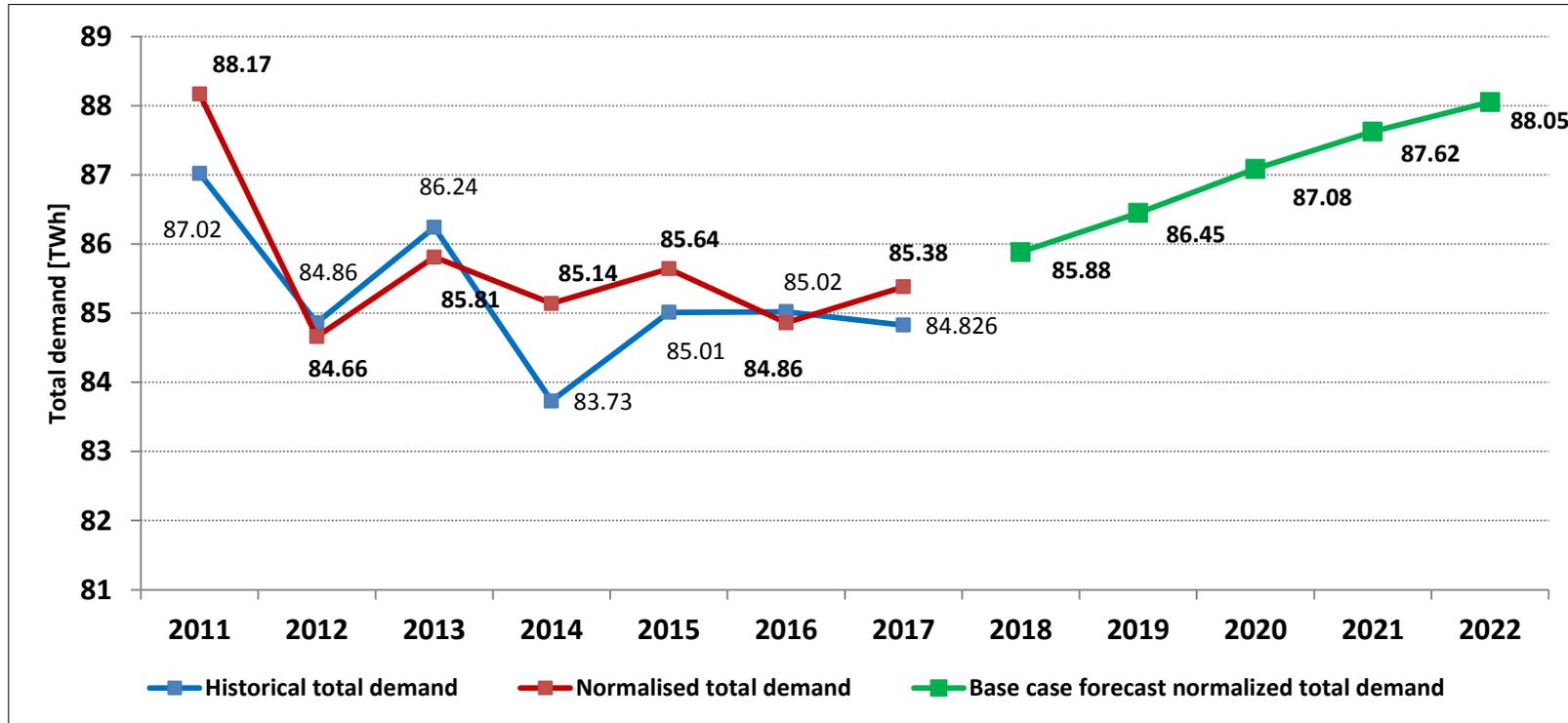# BE Demand, Market Response & Balancing Reserves & FB

Proposal for hypotheses

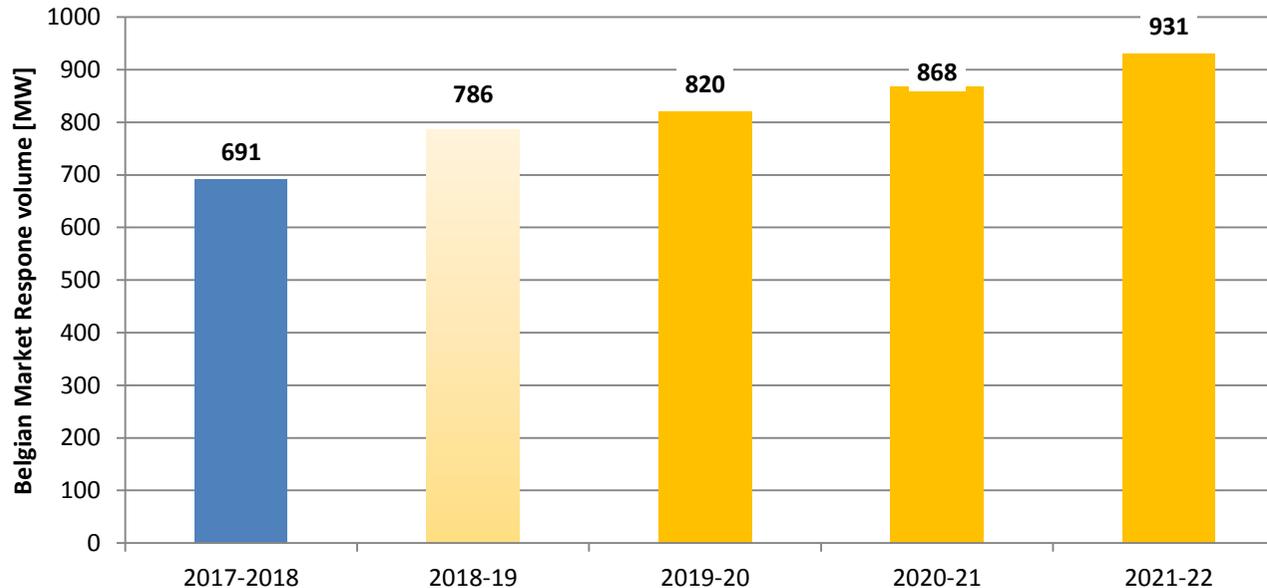# Balancing reserves

Demand evolution

The latest forecasts (Summer 2018) from IHS Markit have been used, incorporating all market insights up until June 2018.

Market response – volumes to be taken into account

Results from the analysis from "*Ecube consultants*", performed during 2018 will be used.

These were discussed with stakeholders during the TF iSR of 09-07-2018.

Major improvement of the FB methodology in cooperation with RTE

2015-16	NTC only modelling
2016-17	1 flow-based domain for all winter
2017-18	Three flow-based domains with DE wind correlation
2018-19	**4 x 24 flow-based domains** with a detailed climate correlation
2019-20	**4 x 24 flow-based domains** with a detailed climate correlation. Update with 2017 SPAIC days.

Rte · elia

Implementation of Minimum Remaining Available Margin of 20% (MinRAM20%)

From now on the effect of MinRAM20% will be taken into account as baseline assumption for the base-case scenario in any further assessment performed by Elia regarding the volume assessment for strategic reserves, since this feature is currently operational in the capacity calculation of the FBMC framework.