

Statistics and forecast Q2 2020

This is SWEA:s quarterly statistics and forecast for the Swedish wind power market, covering data from turbine manufacturers and wind power developers acting on the market.

SWEA, Swedish Wind Energy Association - Svensk Vindenergi

2020-07-03

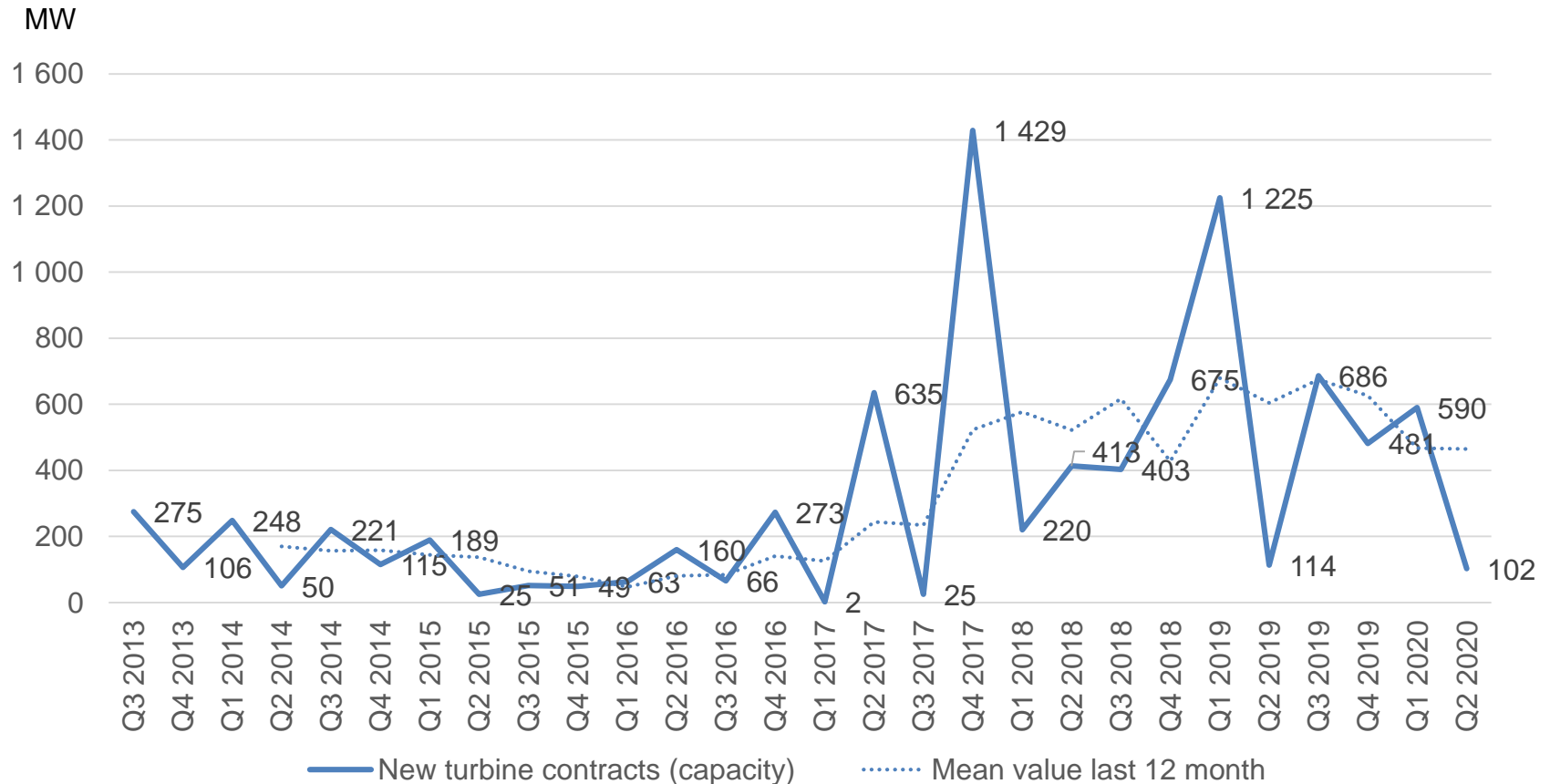
The statistics and forecast

- **The statistics** are based on sales figures reported by the turbine manufacturers and project figures from project developers combined with official sources.
- **The forecasts** are based on the above figures combined with estimates regarding future market conditions.
 - **Base case:** Refer to the short term forecast. It is based on the estimation that all firm and binding turbine contracts yet reported are realised together with some new projects. That is our assessment of the most realistic scenario and is the official forecast.
 - **Low case:** Assumes only projects where turbine contracts (firm and binding) have been signed will be realized. In this scenario no further investment decisions are made. Thus, this scenario defines the lower limit of wind power growth in Sweden.
 - **High case:** Projects with turbine contracts (firm and binding) are realized and on top of that an estimation that most projects considered favorable are realized.

New turbine contracts* (firm and binding)

Few new turbine-contracts were reported during Q2 2020.

Scheduled deliveries and commissioning for the coming 3-y period exceed 4000 MW



* Figures from all turbine manufacturers acting on the Swedish market

Order books

Time plan according to turbine manufacturers for wind power installations during year (MW) *

2019	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2020 (Tot)	2021	2022	2023
1667	132	257	422	951	1763	2549	484	0

* Figures from all turbine manufacturers acting on the Swedish market

Installations in 2020

Total by the end of 2019

Turbines: 4 120 st

Capacity: 9 061 MW

Actual production: 19,5 TWh*

Annual normal production (estimate): 25 TWh**

Added capacity in 2020

1st quarter: 132 MW (actual)

2nd quarter: 257 MW (actual)

3rd quarter: 423 MW (forecast)

4th quarter: 951 MW (forecast)

Total: 1 763 MW

Total by the end of 2020 - forecast

Turbines: 4 540 st

Capacity: 10 826 MW

Actual production: 29 TWh***

Annual normal production (estimate): 31 TWh**

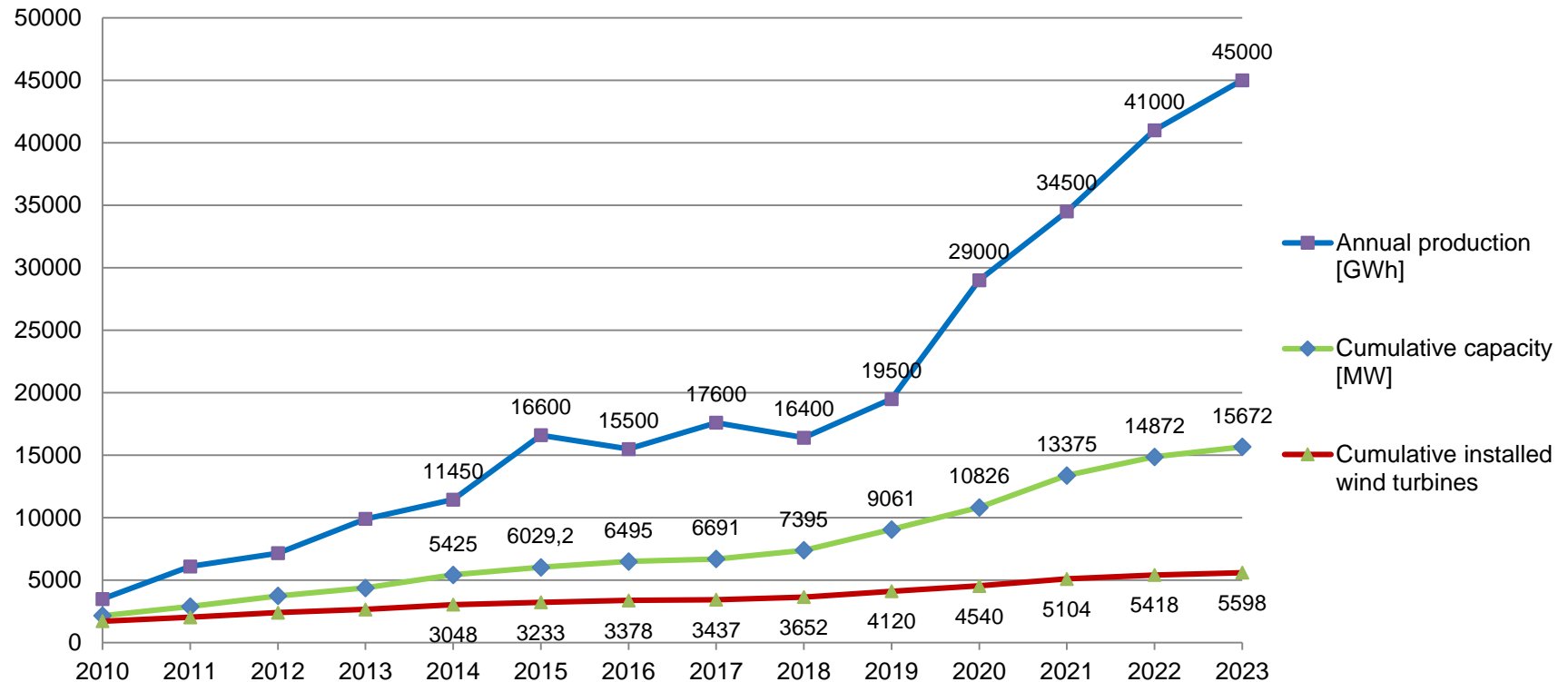
** Actual production is the real production and depends on wind conditions and when installations are made during the year.*

*** Annual normal production is the estimated annual production of electricity, as if all capacity in operation at the end of the year produced during the whole year with normal wind conditions.*

**** Estimations for the remainder of 2020 based on the assumption of new projects coming on line as shown above and normal wind conditions*

Short term forecast 2020-06-30

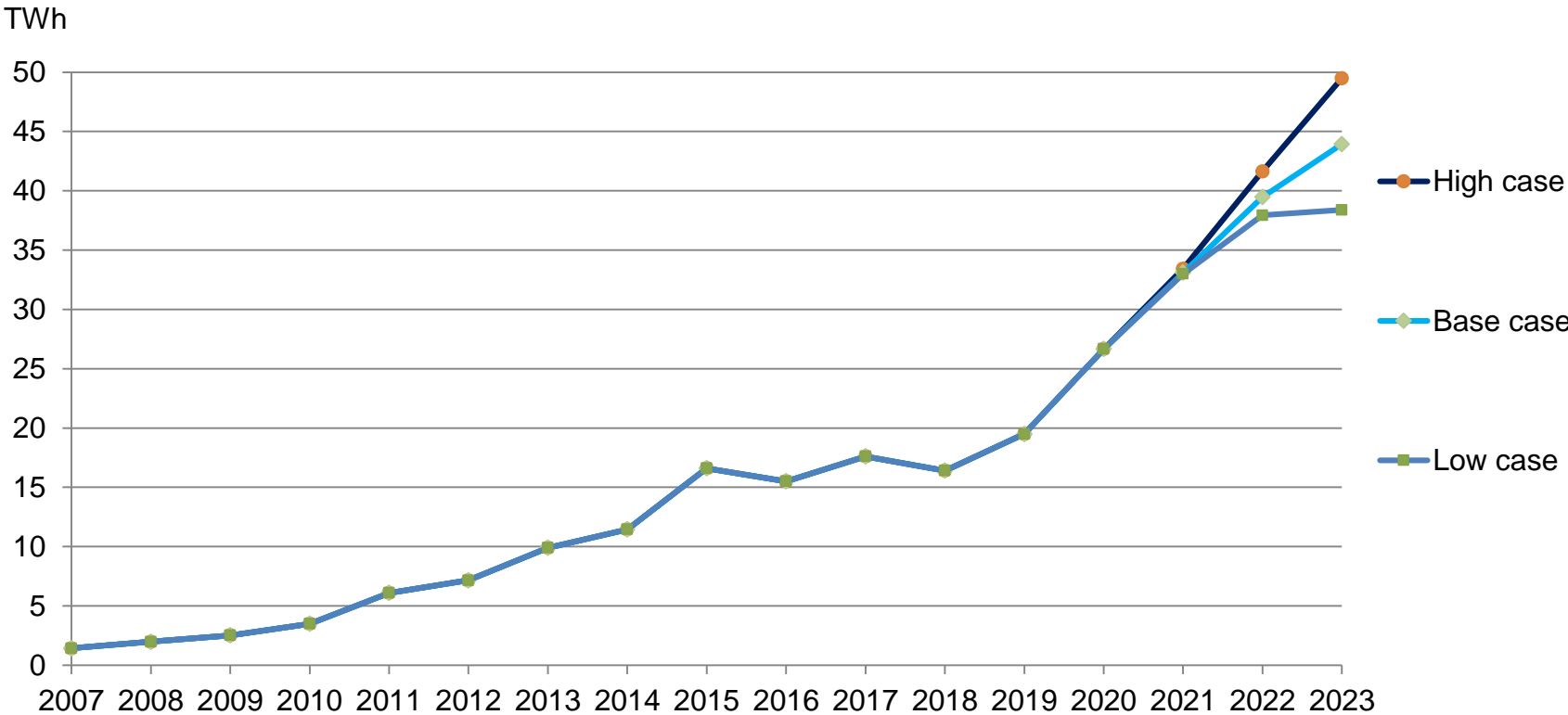
Turbines are getting taller and increasing the swept area. While production (GWh) and installed capacity (MW) is to double in the coming years, the number of installed turbines will remain around 5000.



* Figures based on reported firm and binding contracts from all turbine manufacturers acting on the Swedish market. This scenario is the official short term forecast of SWEA and updated quarterly. The long term forecast (2040) is found on the [homepage of SWEA](#)

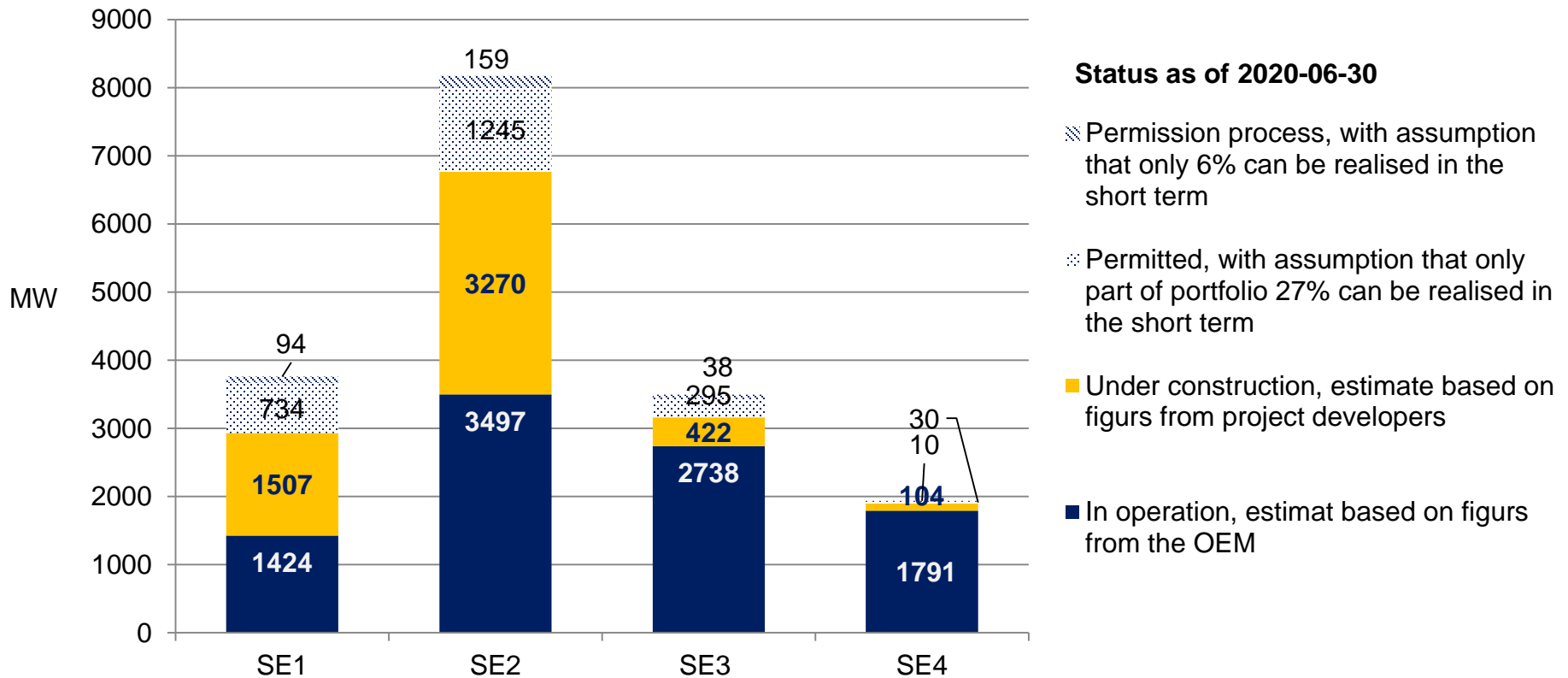
Wind power production – all cases

Production is now close to 30 TWh yearly and set to increase towards 37-50 TWh in 2023.



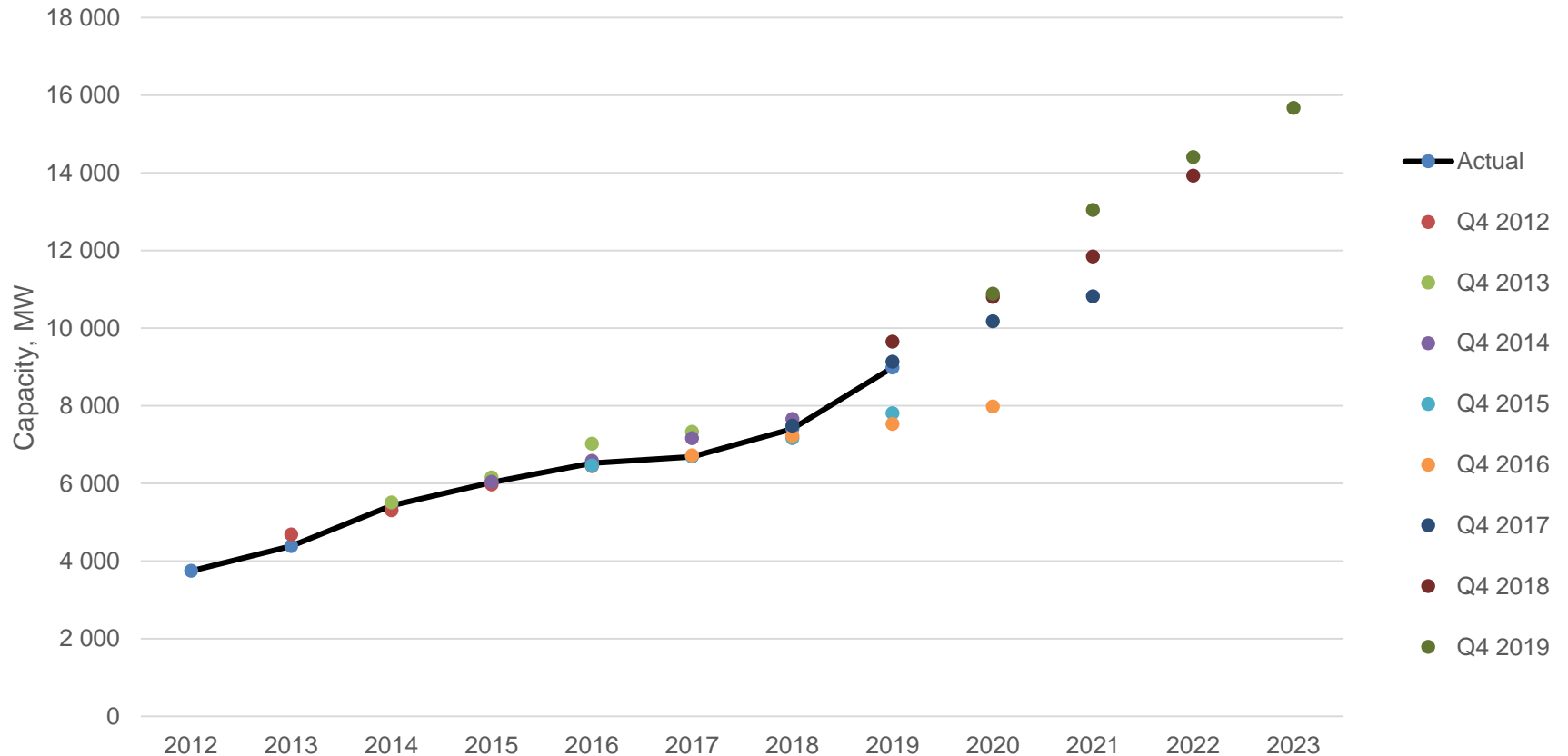
Installed capacity by price area

The strong development in price area SE2 continues. Most projects [by MW] “In operation” and “Under construction” are located in SE1 and SE2. Same for projects with status “Permitted” and “In permission process”, although only a small part of the portfolio is shown in the figure.



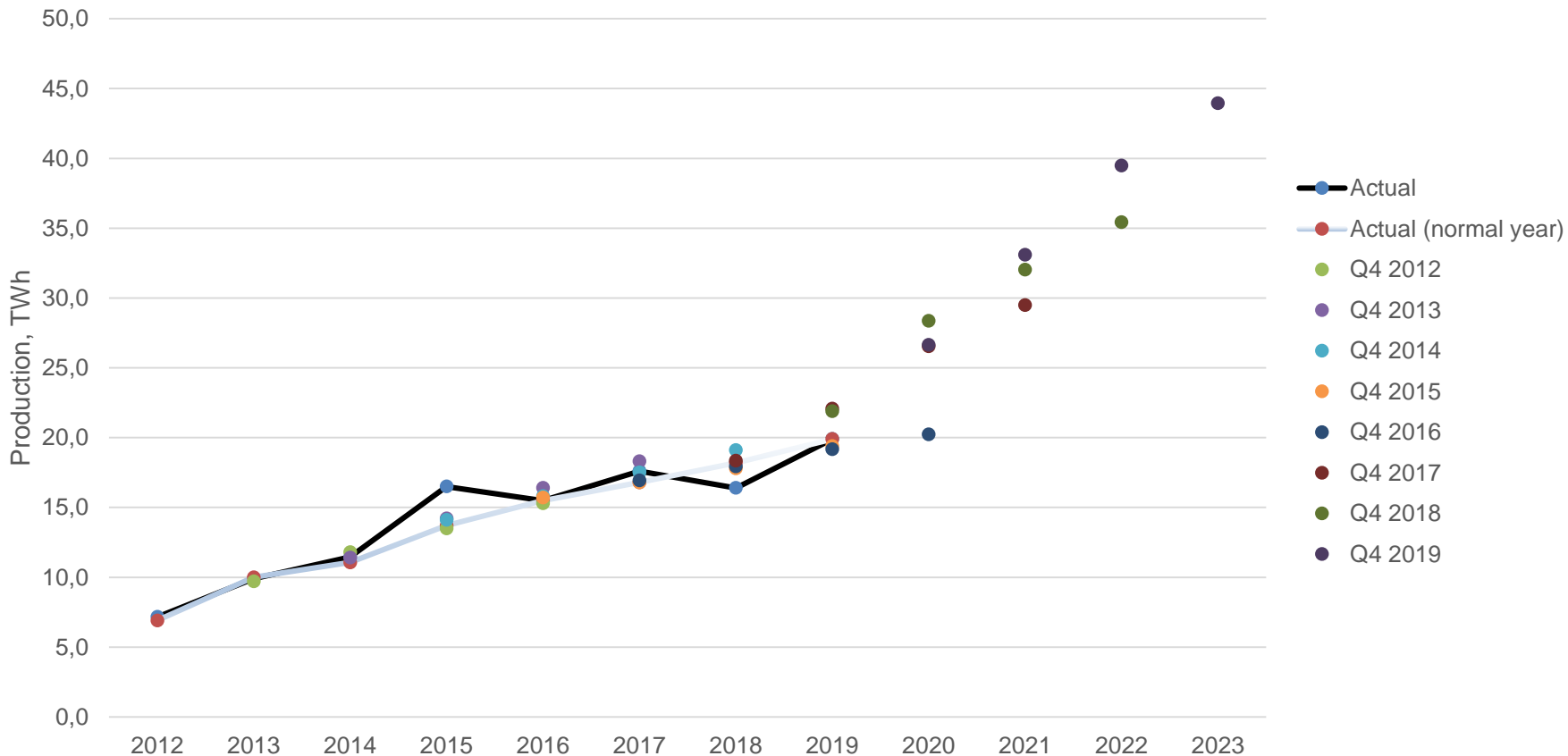
Follow up – installed capacity [MW]

Graph shows previous forecasts (dots) and actual installed wind power capacity (line). Earlier forecasts have proven to be very close to the real development.



Follow up – electricity production [TWh]

Graph shows previously forecasted yearly production (dots) and actual production (line). Earlier forecasts have proven to be very close to the real development.



Capacity in the national electricity transmission system

Due to greater production of electricity in the northern parts of Sweden (price area SE1 and SE2) and greater consumption in the south (price area SE3 and SE4), the capacity in the national transmission grid is of great importance for a well functioning electricity transmission system and markets.

The transmission capacity is also key to make electrification of transport and industries possible and reduce use of fossil fuels. Furthermore, geographic flexibility is key to compensate variability in power demand and production.

In 2017 the SWEA published the report: [Flaskhalsar i stamnätet](#)

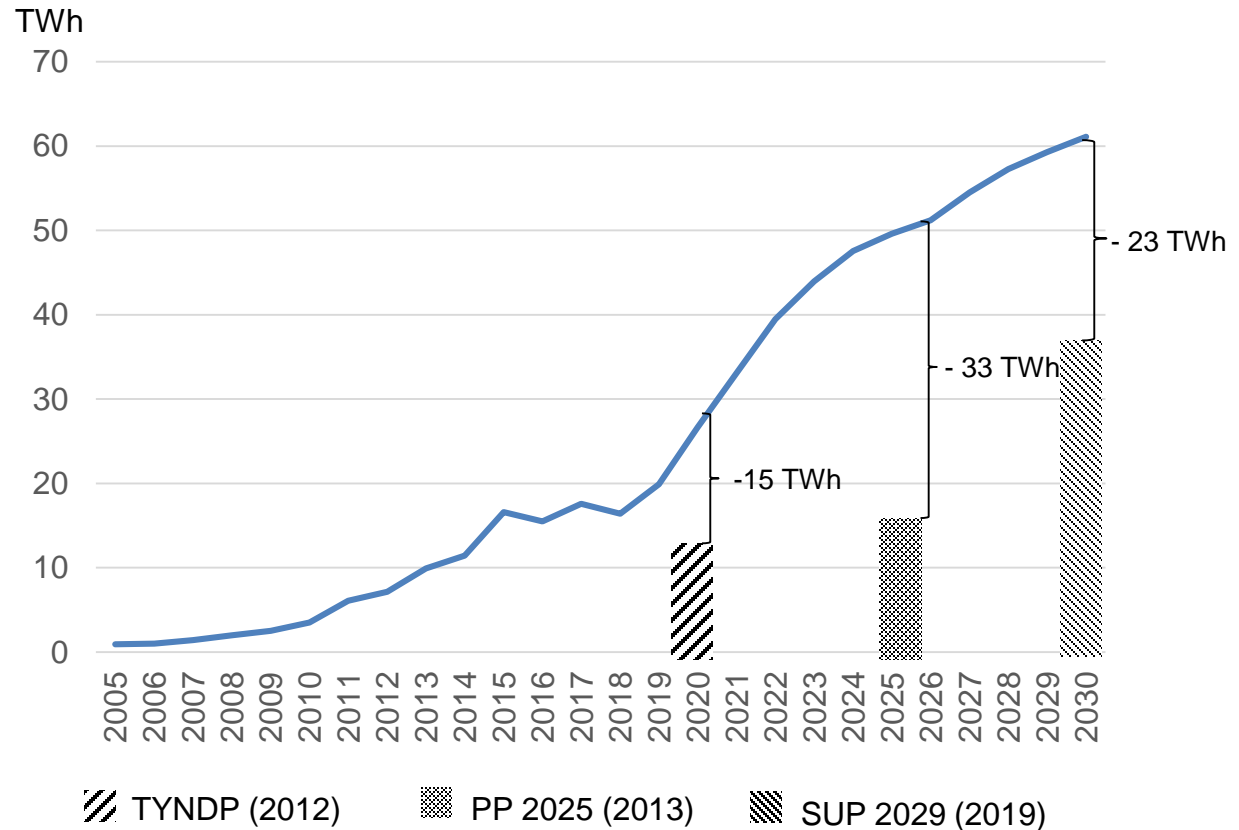
- Expected price differences between SE2 and SE3 will increase if the capacity remains the same.
- Planned reinforcements in the transfer capacity from SE2 to SE3 is socially and economically profitable and should be prioritized.
- If all planned reinforcements up to 2030 are carried out (+1500 MW), the price difference will be reaching approx. 1,3 EUR/MWh between SE2 and SE3, and 3,2 EUR/MWh between SE1 and SE3.

The Swedish TSO generally underestimate wind power expansion

The Swedish TSO "Svenska Kraftnät" systematically underestimates the increased wind power development.

In the graph; figures from Svenska kraftnät compared to the forecast of the SWEA.

The "Ten Year Network Development Plan" (TYNDP), "Perspektivplanen" (PP) and the "System-utvecklingsplanen" (SUP) all underestimate the need for capacity.



TSO investments – lagging behind

Events that affect the electrical balance

2012 – Higher ambition in the Green Certificate System. Target: +26,4 TWh by 2020, referred to 2012.

2015 - Vattenfall resp. E.ON decide to close down nuclear reactors: R1 and R2 resp. O1 and O2

2016 - O2 shut down (No restart)

2016 - Higher ambition and extension of the Green Certificate System. Target +46,4 TWh by 2030, referred to 2012.

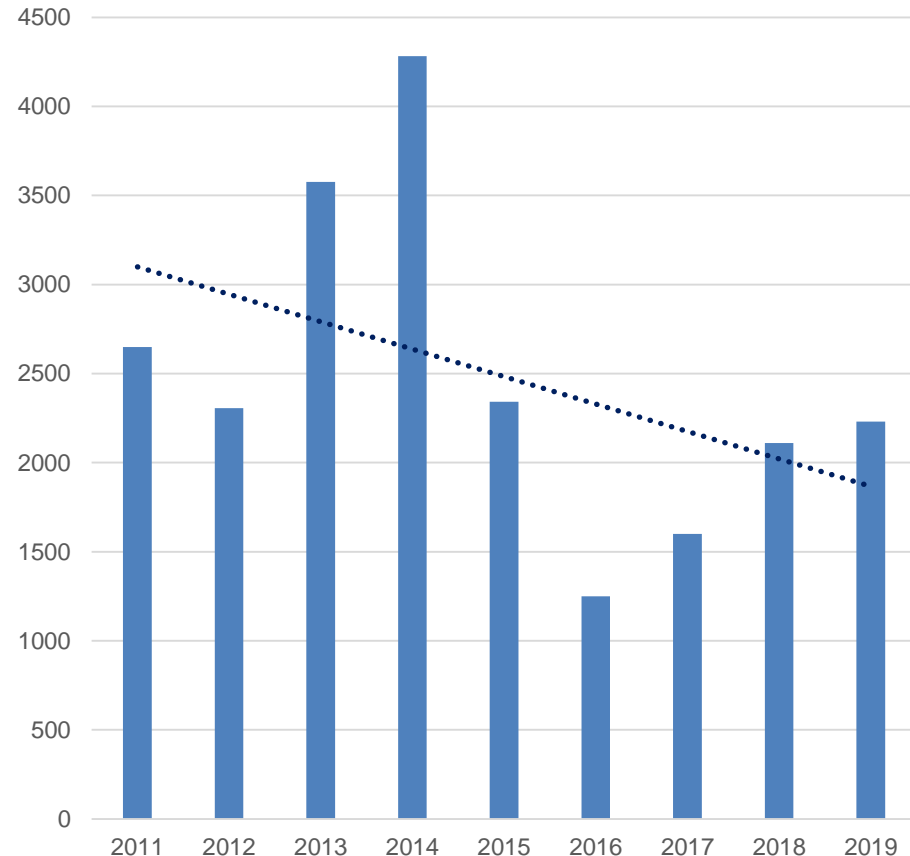
2017 – Sweden's Climate Policy Framework is adopted. Target of net zero emissions of greenhouse gases by 2045

2017 - O1 shut down

2018 – EU's revised Clean Energy Directive is decided. Target 32% renewable energy by 2030 (Sweden 65%)

2019 – R2 shut down

Svk grid investments, million SEK



Sources: Svk Annual report [2011](#) [2012](#) [2013](#) [2014](#) [2015](#) [2016](#) [2017](#) [2018](#) [2019](#)



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