Statistics and forecast

This is quarterly edition of statistics and forecasts for the Wind Power Market, covering data from turbine manufacturers and wind power developers acting on the Swedish market (estimated coverage is 100 percent respectively 95 percent of the total Swedish market)

Q4 2018

Svensk Vindenergi – Swedish Wind Energy Association, SWEA

Svensk Vindenergi

2019-02-12

The statistics and forecast

- ***The statistics*** are based on the order books of the turbine manufacturers and project portfolios of the wind power developers presented at aggregated level
- ***The forecast*** consists of three future scenarios (low, base, high). They are based on assumptions regarding which projects will be realized - considering today's market situation and the future's.
- **Low case:** Only projects where turbine contracts (firm and unconditional) have been signed will be realized. In this scenario no further investment decisions are made, hence this scenario defines the lower limit of wind power growth in Sweden.
- **Base case:** Projects with signed turbine contracts, approximately 20 percent of permitted projects and 10 percent of projects under permission process will be realized. This is the most realistic scenario and is the official forecast.
- **High case:** Projects with signed turbine contracts, around 30 percent of permitted projects and 15 percent of projects under permission process will be realized. This scenario may be relevant in circumstances leading to higher power prices and sets the ceiling for growth of wind power in Sweden.

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Last year

Total by the end of 2017

Turbines: 3 437
Capacity: 6 691 MW
Actual production: 17,6 TWh *
Annual production (estimated): 17,2 TWh **

Added capacity in 2018

1st quarter:	8,4 MW
2nd quarter:	79,4 MW
3rd quarter:	338,8 MW
4th quarter:	290 MW
Total:	**716,5 MW**

Decommissioned capacity during 2018

- 1,2 MW

Total by the end of 2018

Turbines: 3 659
Capacity: 7 406 MW
Actual production: 16,4 TWh *
Annual production (estimated): 19,5 TWh **

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

****** *Estimated annual production is the annual production the turbines are expected to produce when in operation during a whole year with normal windconditions.*

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Installations in 2019

Total by the end of 2018

Turbines: 3 659
Capacity: 7 406 MW
Actual production: 16,4 TWh *
Annual production (estimated): 19,5 TWh **

Added capacity in 2019 (forecast)

1st quarter:	192,8 MW
2nd quarter:	436,0 MW
3rd quarter:	626,5 MW
4th quarter:	987,0 MW
Total:	**2242,3 MW**

Total by the end of 2019 (forecast)

Turbines: 4 248
Capacity: 9 648 MW
Actual production: 21,9 TWh *
Annual production (estimated): 26,9 TWh **

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

****** *Estimated annual production is the annual production the turbines are expected to produce when in operation during a whole year with normal conditions.*

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Project portfolio, status by 2018-12-31

		Onshore	Offshore	Total	*Change Q3*
	In operation	**Onshore**	**Offshore**	**Total**	
	Windturbines	3 573	86	3 659	*(+122)*
	Capacity (MW)	7 205	200	7 406	*(+389)*
*	**Under construction**	**Onshore**	**Offshore**	**Total**	
	Windturbines	883		883	*(+58)*
	Capacity (MW)	3 395		3 395	*(+285)*
**	**Permitted**	**Onshore**	**Offshore**	**Total**	
	Windturbines	2 458	503	2 961	
	Capacity (MW)	8 382	2 267	10 649	
**	**In permission process**	**Onshore**	**Offshore**	**Total**	
	Windturbines	2 048	275	2 323	
	Capacity (MW)	7 111	925	8 036	

** Firm and unconditional turbine order based on investment decisions*

*** Estimations*

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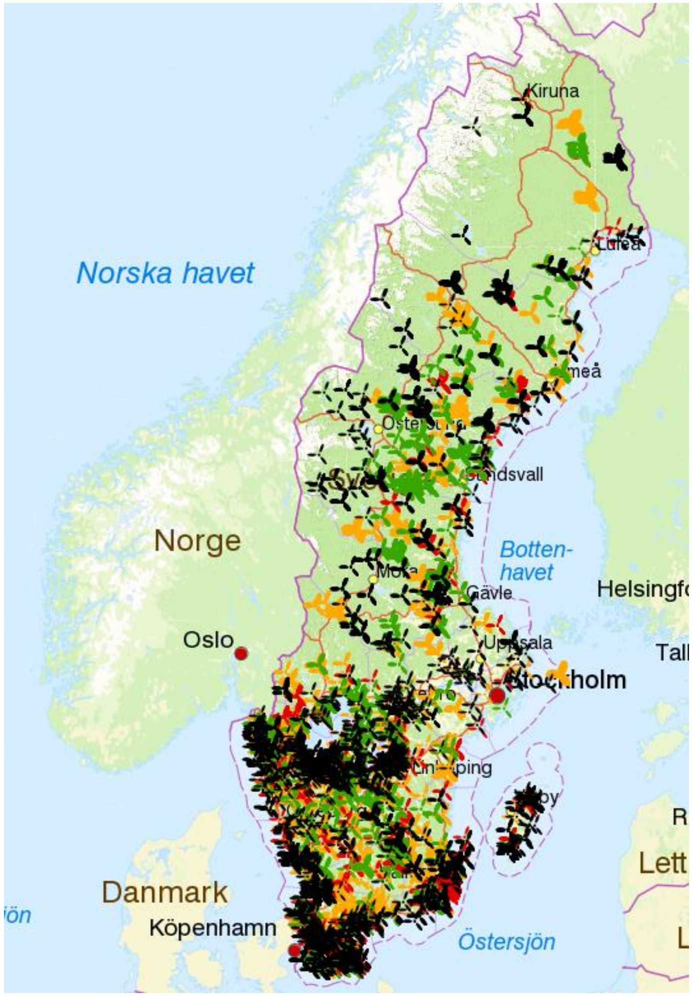
Geographical spread



Project status

- In operation
- Permitted
- Rejected
- In permitting process

Source: Vindbrukskollen.se

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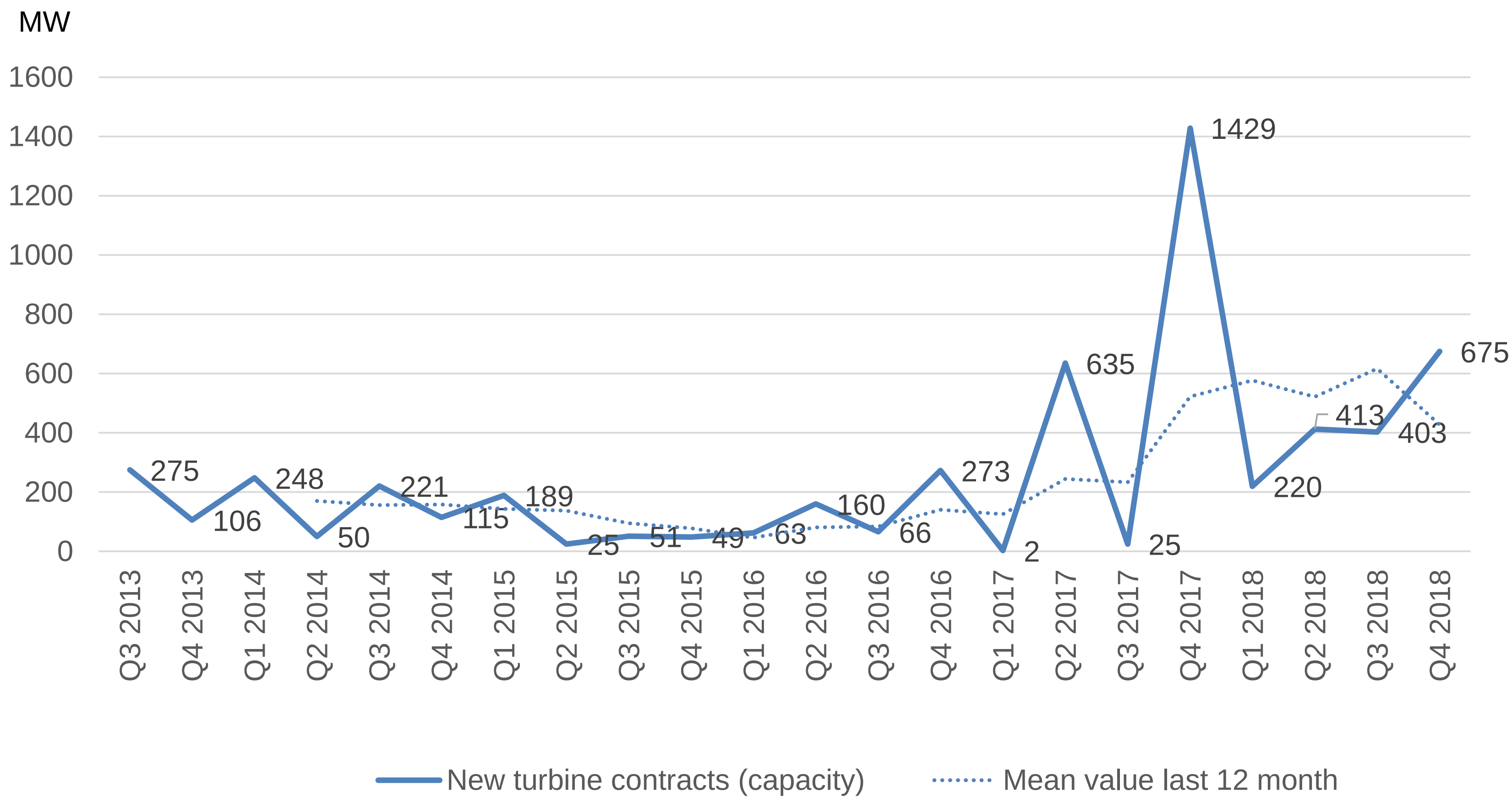
New turbine contracts (firm and binding)



** Figures from all turbine manufacturers acting on the Swedish market*

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Order books

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

2018	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2019 (Tot)	2020	2021
716	193	436	626	987	2242	713	438

** Figures from all turbine manufacturers acting on the Swedish market*

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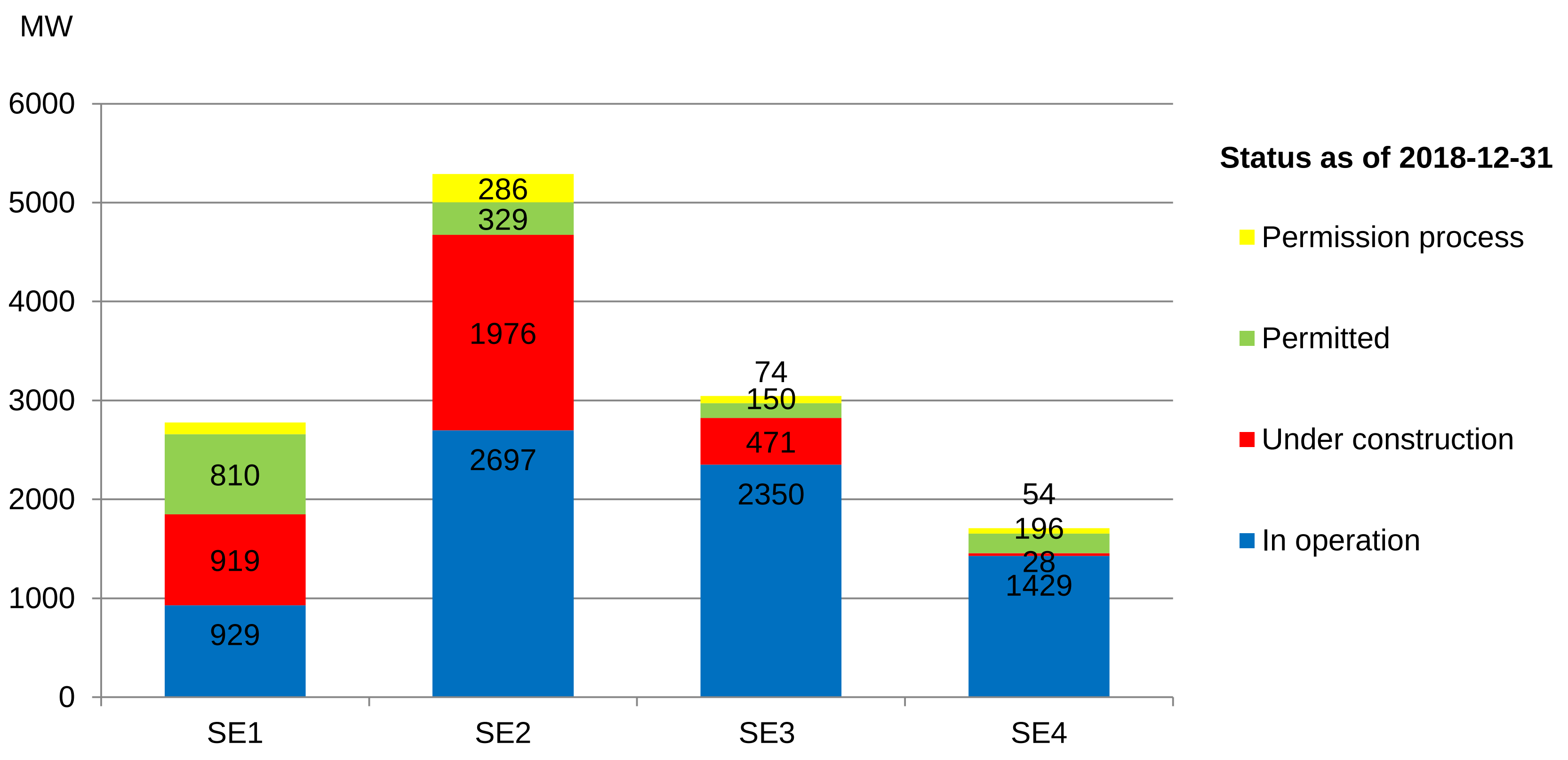
Installed capacity by price area 2022-12-31 (forecast)



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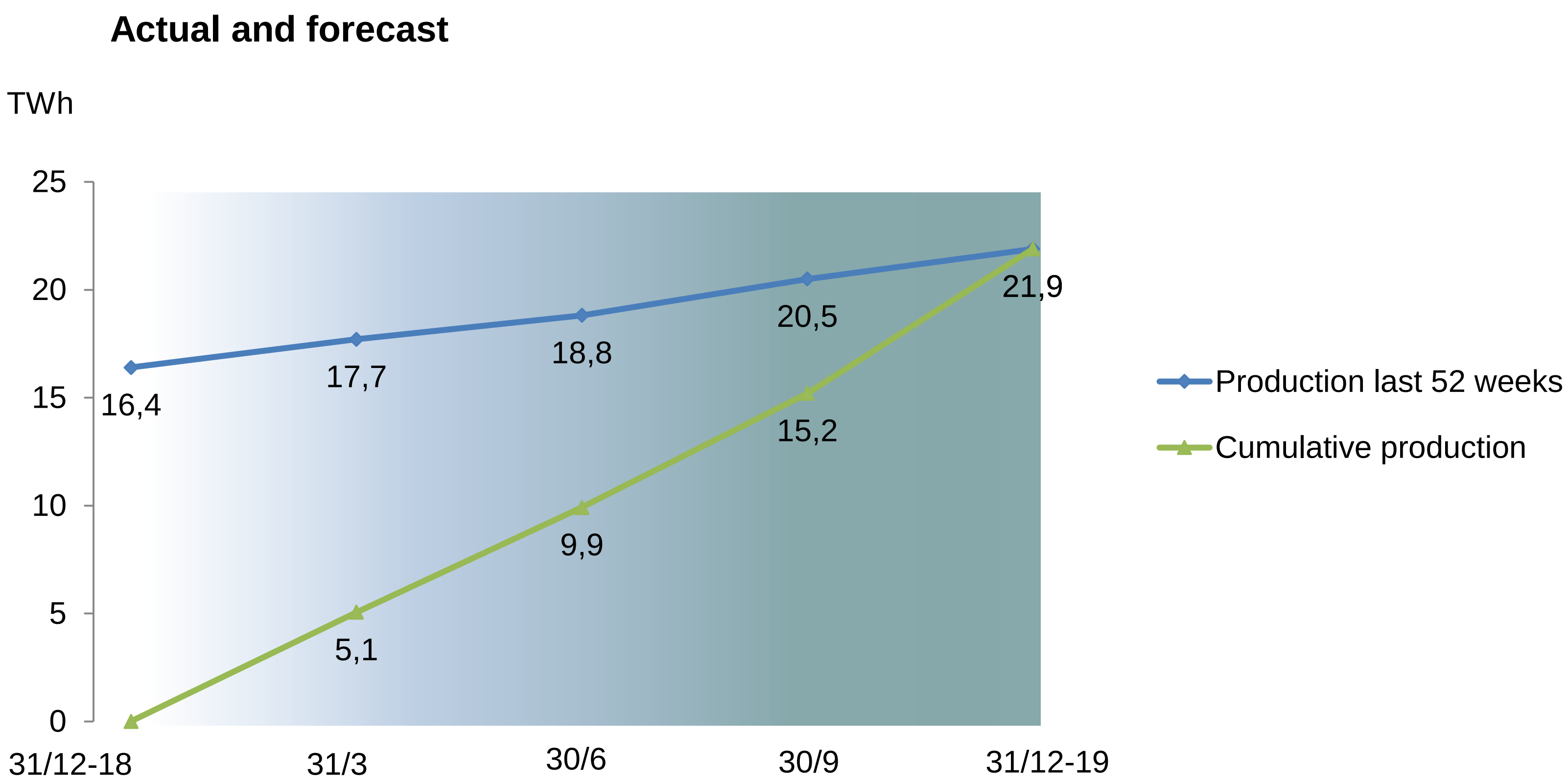
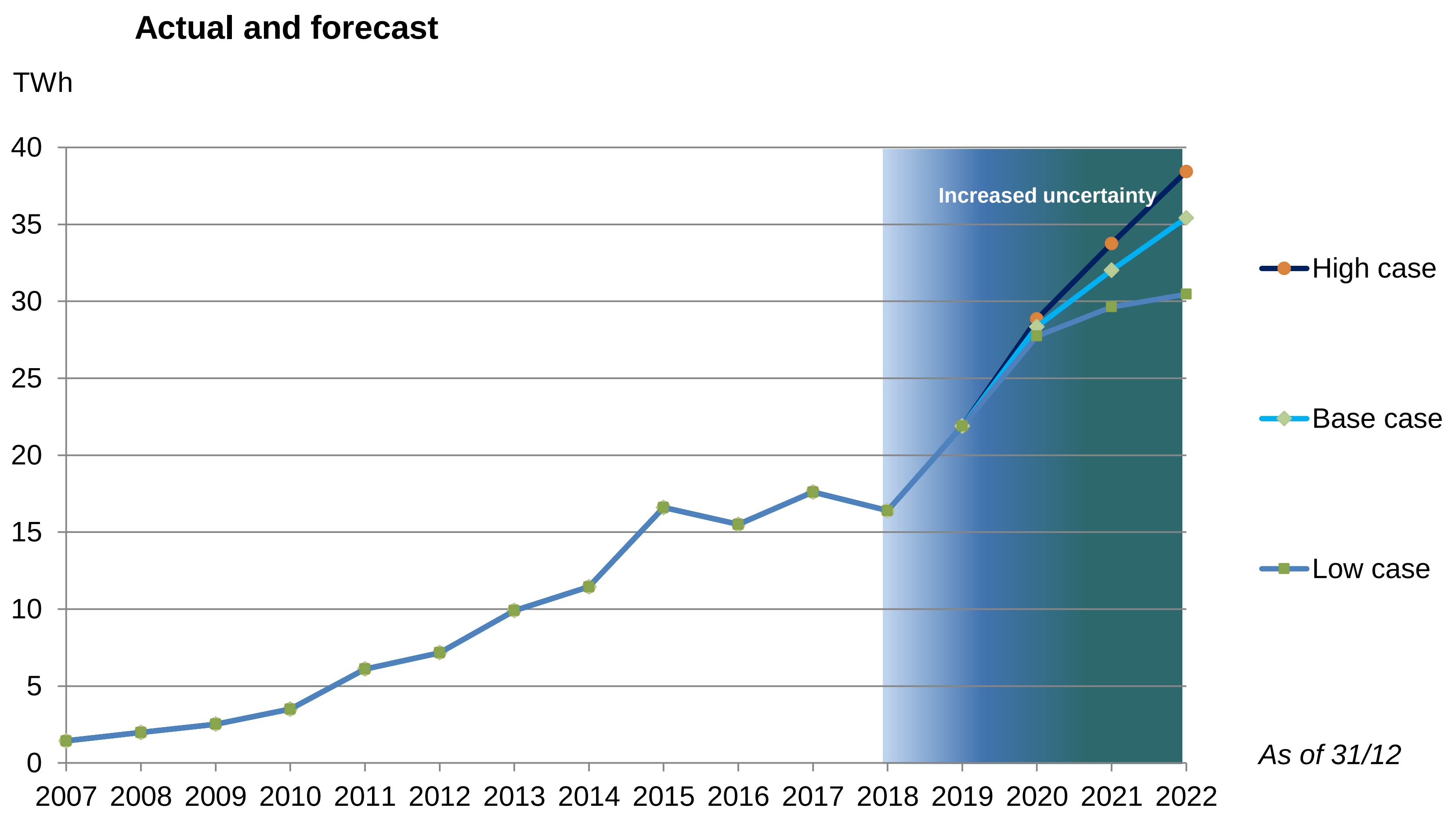
Wind power production 2019 (forecast)



Wind power production – different scenarios



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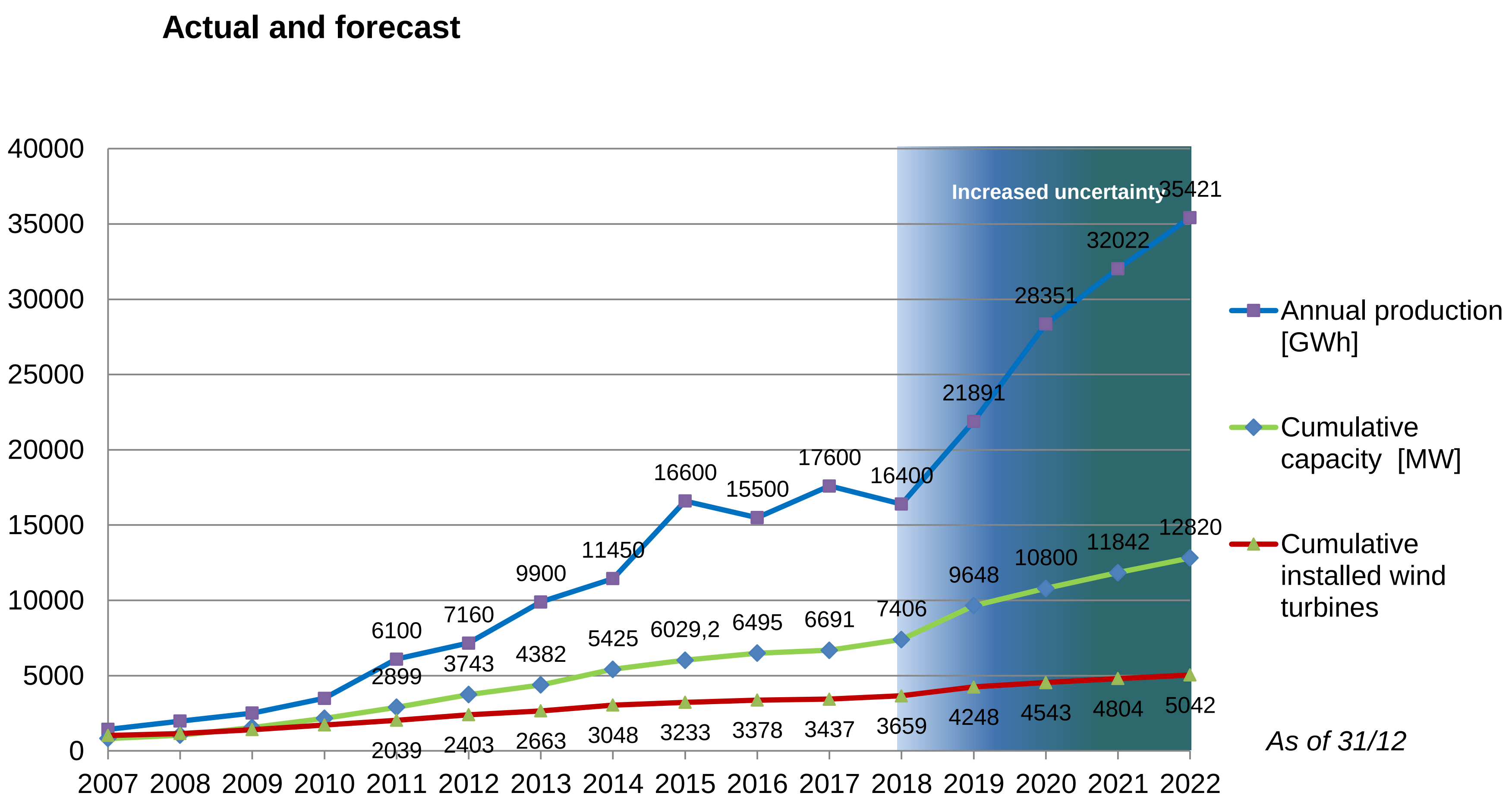
Base case

This scenario is the most realistic and official forecast of Svensk Vindenergi



Assumptions

Part of wind power project portfolio capacity expected to be realized within given time frame depending on scenario (approximate figures)

Status	**High**	**Base ****	**Low**
Under construction	100 %	100 %	95 %
Permitted *	30 %	20 %	0 %
In permission process *	15 %	10 %	0 %

* *Only onshore wind power are expected to be built.*

** *The base case reflects a possible scenario based on an assessment of current and future market conditions.*

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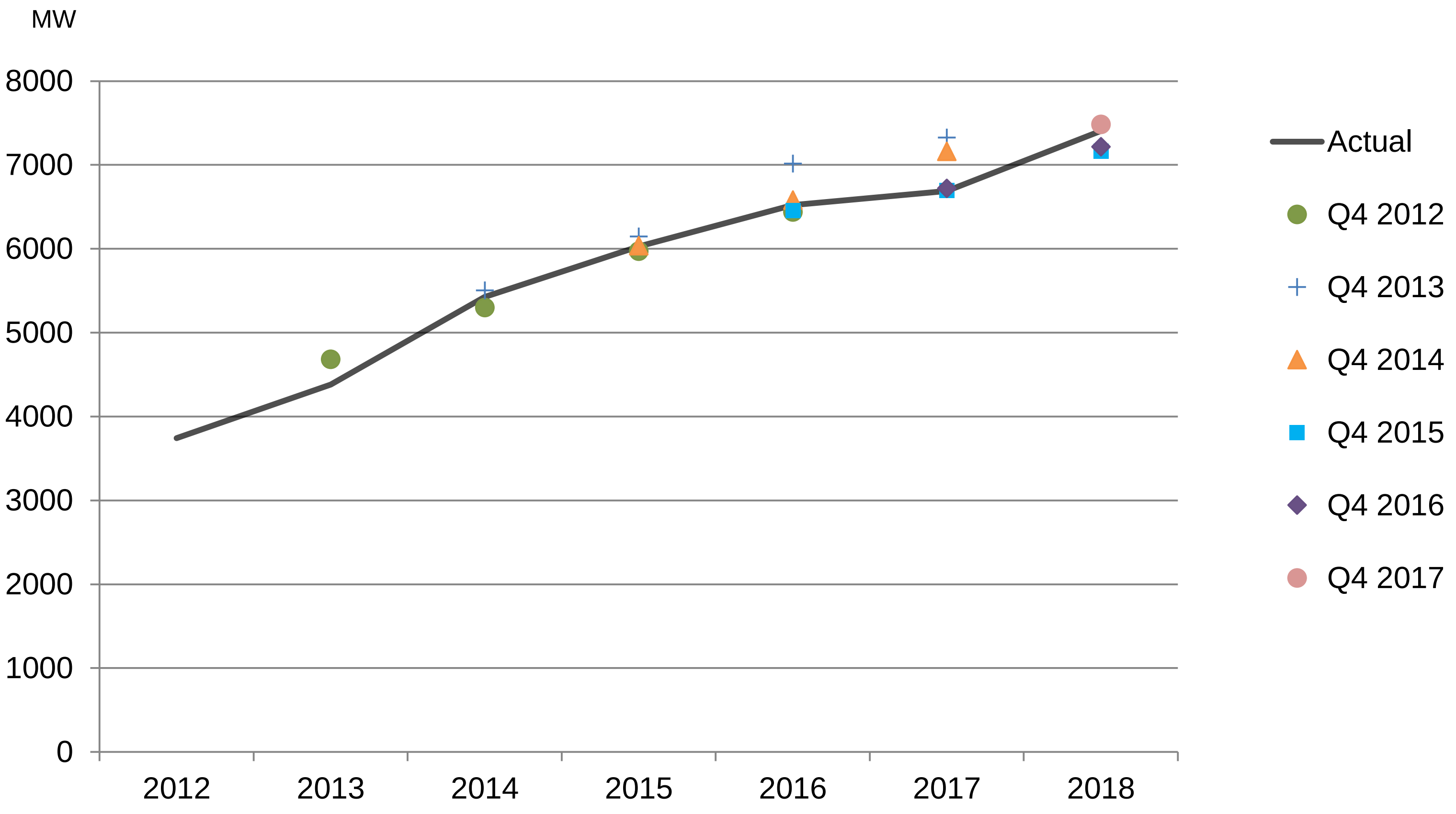
Follow up

Previous forecasts and actual installed wind power capacity



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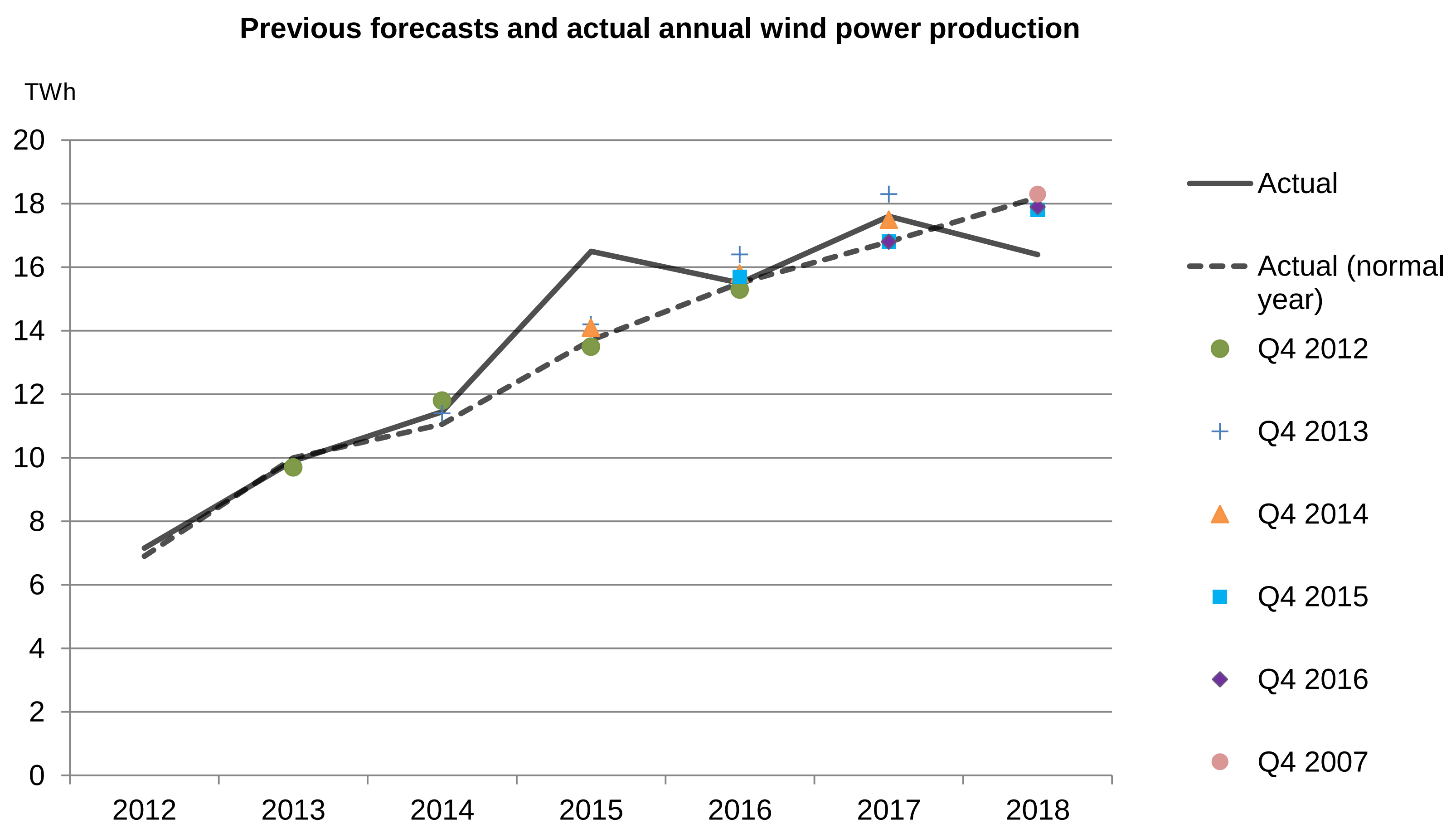
Follow up


Previous forecasts and actual annual wind power production
TWh
20
18
16
14
12
10
8
6
4
2
0
2012
2013
2014
2015
2016
2017
2018
Actual
Actual (normal year)
Q4 2012
Q4 2013
Q4 2014
Q4 2015
Q4 2016
Q4 2007