



European Electricity Summary

February 2020

Wind speeds were consistently high in February 2020 across Europe and this led to exceptionally high levels of wind generation and wind generation increased by 68% from February 2019.

The average wind generation in February 2020 increased by 61% compared to February 2019. The maximum output only increased by 40%. This means, February 2020 was likely windier than last year, but a higher wind capacity also contributed to the increasing wind generation output.

Hydro generation also rose over the period supported by the extreme weather noted over this period (up by 26%).

Generation from gas-fired power stations remained relatively steady year-to-year, but the increases meant that coal/lignite generation dropped 26% year-on-year.

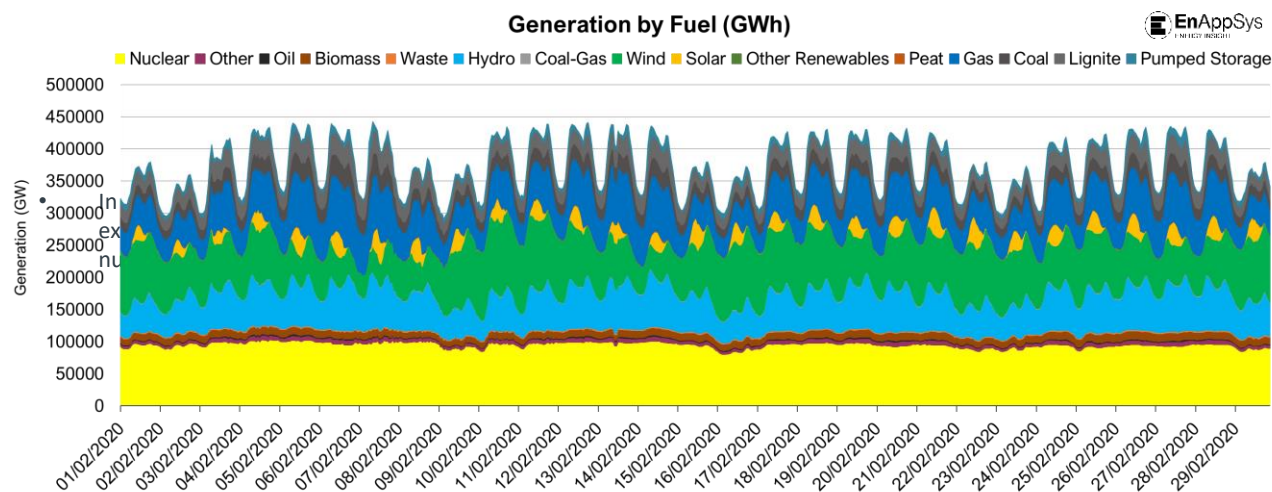
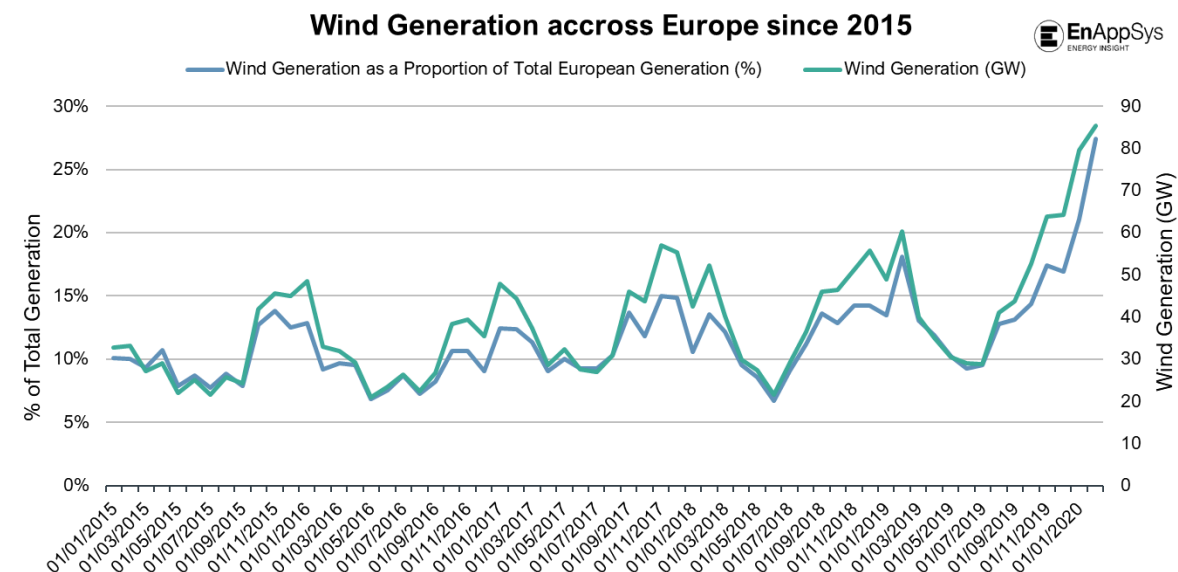
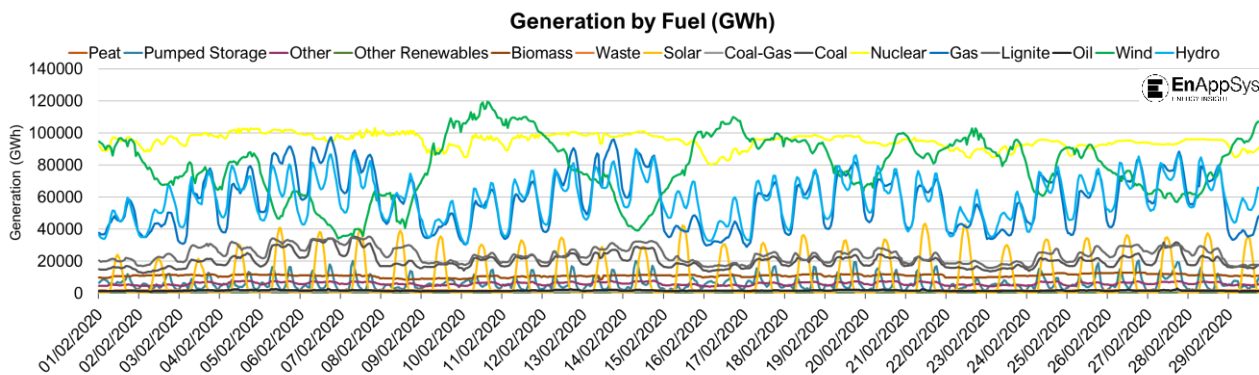
This came despite increasing overall requirements for electricity generation (up 27%).

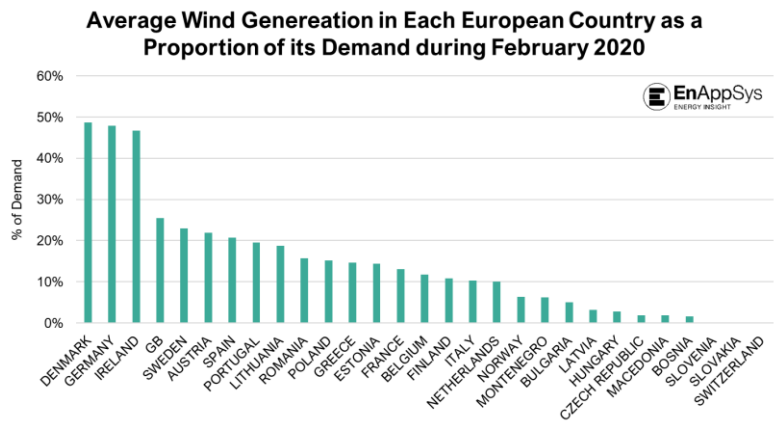
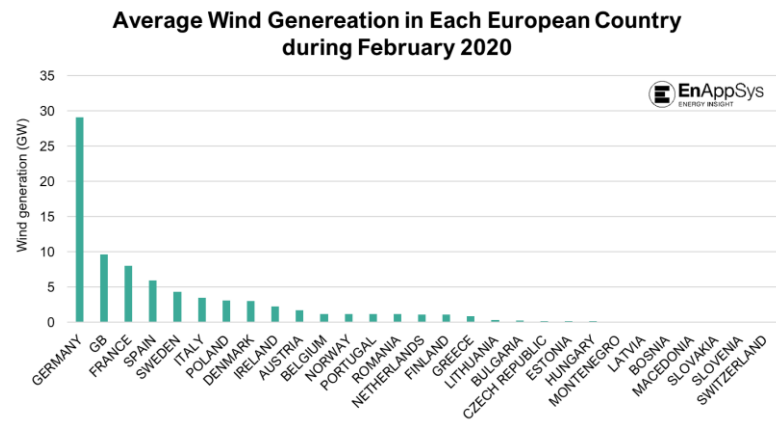
Total Generation by Fuel	February 2019		February 2020	
	GWh	%	GWh	%
Biomass	7481	3.1%	7623.1	2.9%
Coal	19065.9	7.8%	14033.6	5.4%
Coal – Gas	953.5	0.4%	830.1	0.3%
Gas	40312.5	16.5%	40246.4	16.0%
Hydro	32620	13.4%	41015.2	15.7%
Lignite	22407.2	9.2%	16674.2	6.4%
Nuclear	70283.6	28.8%	65939.1	25.2%
Oil	1107.4	0.5%	1140.6	0.4%
Other	4758.3	2.0%	4161	1.6%
Other Renewable	255.1	0.1%	246.1	0.1%
Peat	577.8	0.2%	470	0.2%
Pumped Storage	3139.2	1.3%	4374.5	1.7%
Solar	6750.4	2.8%	6265.8	2.4%
Waste	1187.1	0.5%	1216.7	0.5%
Wind	32904	13.5%	55271.9	21.2%

The average wind generation in February 2020 increased by 61% compared to February 2019.

The wind generation across Europe during February 2020 saw the highest levels ever recorded, both onshore and offshore, with average power output of 85.4 GW across the month (equivalent to the power output of 213.5 coal units each sized at 400MW). This came as monthly records for wind generation have been broken each month since November 2019.

Wind generation as a proportion of total generation has been at record levels since January 2020, reaching 27% of total European generation in February 2020, significantly higher than the previous high of 18% in February 2019.





The highest wind generation for February occurred in Germany, at an average of 29.1GWh generation over the course of the month, with Denmark, Germany and Ireland producing 50% of power from wind farms in the month.

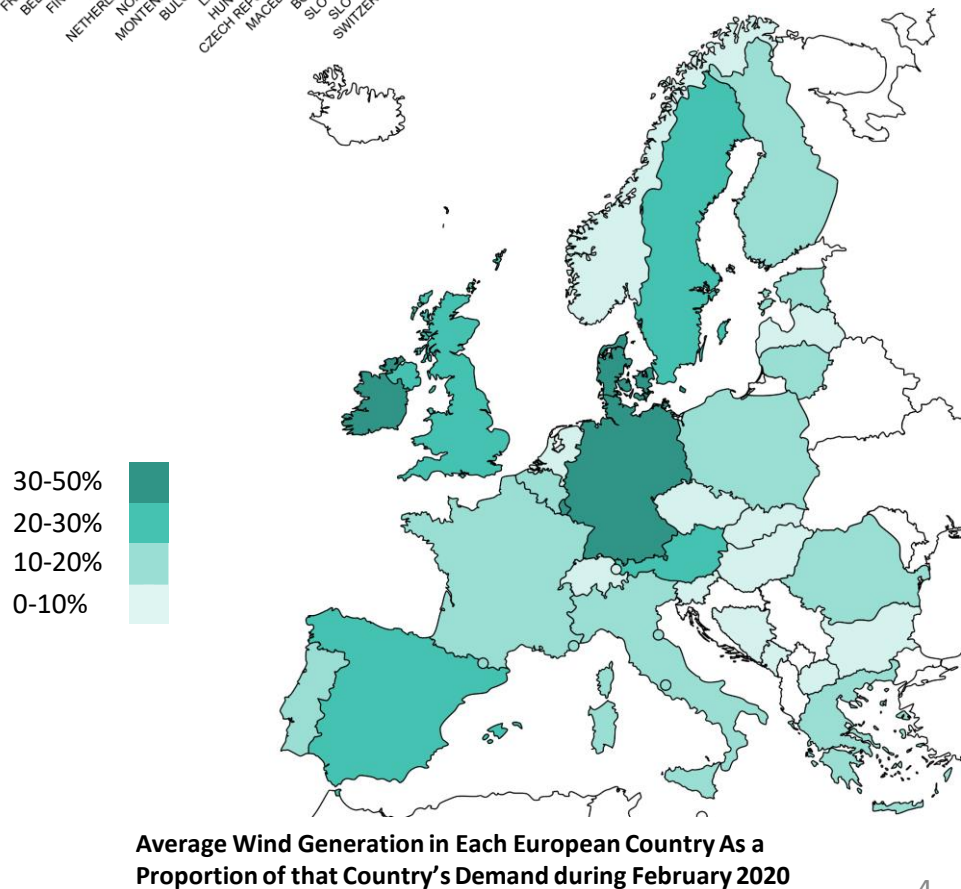
With Ireland only able to source 70% of demand from wind farms during a single half-hour and with other markets in Europe typically seeing a maximum at around 55-65%, these values are close to the limits of how wind generation can currently be easily integrated into power markets. This is particularly difficult for ‘islands’ e.g. GB and Ireland where interconnection with neighbouring markets is not frequency coupled. This means they have to manage grid frequency on an individual grid basis.

Mainland European countries can utilise stability and grid services across the whole European grid to provide frequency control. As non-synchronous renewable generation increases across Europe, the requirement for the systems being implemented by GB and Ireland – to allow high renewable fuel mix – will increase.

Continental Europe covered 19% wind generation as a proportion of its demand in February 2020, giving it a high available margin to increase renewable generation before additional grid stability measures are required. This means that countries such as Germany can have renewable generation greater than 100% as it can export the power generated by large thermal units which are providing grid frequency control.

Beyond a 20% share of demand from wind farms, the integration of peak wind output can become challenging (particularly overnight), but with Denmark, Ireland and Germany showing that a higher share is possible.

An easier increase in renewable generation remains possible in the markets below 20% of generation from wind farms, but of these some markets such as Norway already achieve high levels of renewable generation from other sources such as hydro generation.

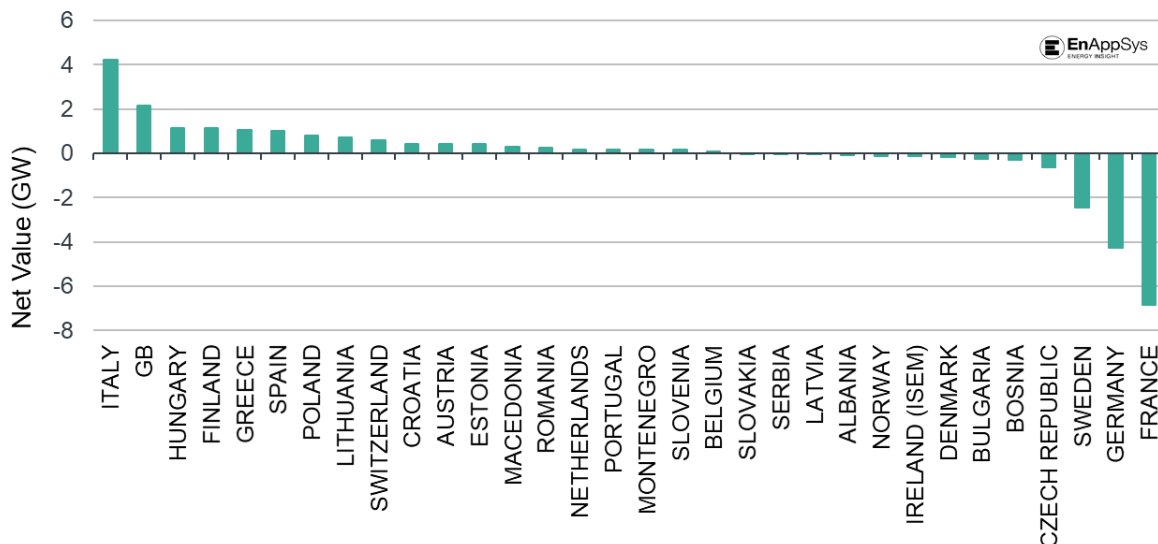


Italy was the largest net importer for this month at 4.2GW, while France was the largest net exporter at -6.8GW.

These figures are consistent with the interconnector review 2019 where Italy has been the largest net importer and France the largest net exporter. France also had the largest net interconnector volume at 6.8GW.

France used this export potential to increase levels of nuclear generation above demand when required and Germany saw high exports as a result of the high levels of wind generation.

Net Imports (Exports)

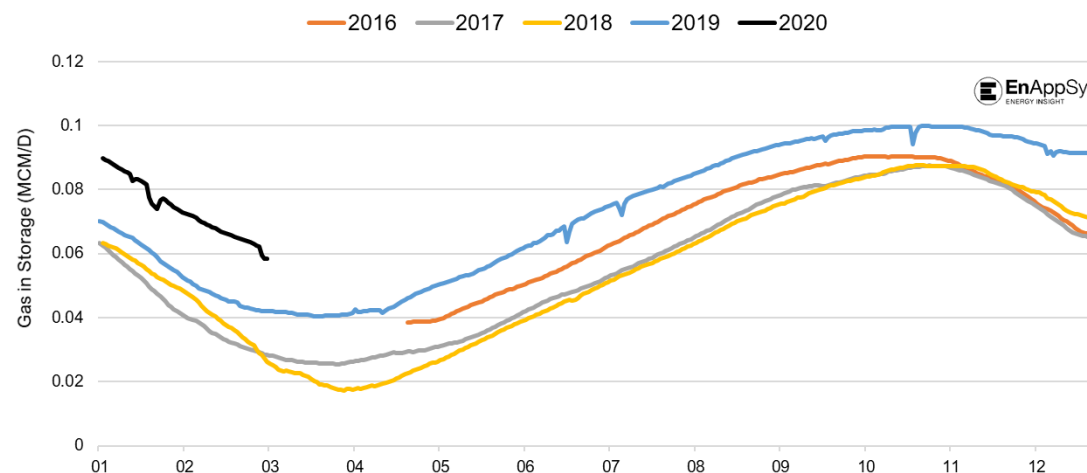


Levels of gas in storage have been climbing since late 2018 despite strong levels of gas-fired generation, as gas prices have dropped globally.

This on-going increase has led to a significant level of gas supply in February 2020 and this oversupply of storage is in turn likely to place further downward pressure on gas prices.

This ensures that there is plentiful supply should any further shifts from coal to gas occur across 2020.

Daily European Gas in Storage by Year for 23/4/16 to 3/3/2020 (MCM/D)





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