

## BSC Insight: Weather Dependant Generation podcast transcript

Hi, I'm Emma Tribe and I am the Analysis and Insight Delivery Lead at Elexon. This means that I lead a team of Data Analysts and we monitor and interpret BMRS data and make it accessible and understandable for our BSC Parties. In my latest insight, I look at how the British weather and all of its quirks is fuelling our day-to-day lives.

So before I start talking about the data, I need to explain what weather dependent generation is. There are three types that I talk about in my insight, they are Wind Balancing Mechanism Units, embedded wind turbines and embedded solar panels.

A Balancing Mechanism Unit is a collection of electricity meters aggregated together for the purposes of Balancing and Settlement. The Balancing Mechanism Units that are registered as wind contain only electricity meters for wind turbines, an example of this would be an offshore wind farm. Some solar panels and wind turbines are not part of large generation farms, instead they are aggregated with homes or businesses to form part of a larger Balancing Mechanism Unit. The volumes of electricity from Wind Balancing Mechanism Units are provided by operational electricity metering. The volumes of electricity from embedded wind and solar are estimates provided by National Grid ESO.

It's also worth mentioning at this point why we're not counting hydropower as weather dependant generation. The reason it's been excluded from our data consideration is that because we already have a way to store and regulate the volume of electricity that is generated by rain in our lakes and rivers. Whereas the energy from wind and solar need to be converted to electricity immediately. This means that we can use electricity created by hydropower at anytime, but if the wind isn't blowing or the sun isn't shining GB is currently unable to be powered by solar or wind energy.

So, on to the data. In the Insight, I look at the last 10 years of data, and during these ten years the amount of weather dependant generation in the fuel mix increases from almost 3% in 2010 to almost 30% in 2020. The data in the Insight also shows that the gap between the amount of fossil fuel generation, and weather dependant generation is getting smaller. In 2020, there was only 16TWh difference between fossil fuel and weather dependant generation. This is compared to the 250TWh difference in 2010. Our interactive graphs allow you to explore the ten years of data in more detail.

The article also looks at the maximum and minimum outputs of weather dependant generation in a Settlement Period in 2020. The maximum happened in March, and was over 12,000MWh between 11:30 and 12:00. The minimum output was 212MWh between 1:30 and 2 in the morning. This shows that weather dependant generation has real highs and lows. What this means for other types of generation is that they need to be flexible to work around the unpredictability of the British weather. To allow for future consistency, pumped storage and battery storage will also need to become more readily available.

The analysis of the data shows that the fuel mix is becoming more weather dependant, which means more renewable! This is great news, and shows that how we generating or electricity is transitioning to Net Zero in line with the Government's 2050 Net Zero target. This podcast has been a brief overview of what I discuss in my latest insight article, 'Reliant on the weather? A review of weather dependant generation in GB'. If you'd like to hear more, please read the full article. You'll also be able to view the data in our interactive graphs.

I hope you've found this useful, and I look forward to talking to you about more of Elexon's analysis and data in the future. Have a great day.