Texas Wind Power During Extreme Weather Events

When reviewing the performance of any generation resource, it is critical that real-time performance be compared to ERCOT’s forecast expectations because all resources – renewable and thermal – can struggle to perform during extreme weather events. Below are highlights of the performance of the Texas wind fleet during several extreme weather events compared to ERCOT expectations. As is shown, the Texas wind power fleet does show up during extreme weather events, often beating expectations.

### Winter Storm Landon (February 2022)
- Average hourly output: **14,700 MW**
- Versus ERCOT SARA Normal: **170%**
- Versus ERCOT SARA Low: **477%**
- Versus ERCOT SARA Extreme Low: **2,479%**

### February 22-24, 2022 Cold Snap
- Average hourly output: **12,200 MW**
- Versus ERCOT SARA Normal: **142%**
- Versus ERCOT SARA Low: **397%**
- Versus ERCOT SARA Extreme Low: **2,063%**

### Winter Storm Elliott (December 2022)
- Average hourly output: **11,149 MW**
- Versus ERCOT SARA Normal: **127%**
- Versus ERCOT SARA Low: **219%**
- Versus ERCOT SARA Extreme Low: **1,737%**

### Winter Storm Mara (February 2023)
- Average hourly output: **4,903 MW**
- Versus ERCOT SARA Normal: **56%**
- Versus ERCOT SARA Low: **96%**
- Versus ERCOT SARA Extreme Low: **766%**

### June 14-18, 2021 Hot Spell
- Average hourly output: **6,102 MW**
- Versus ERCOT SARA Normal: **91%**
- Versus ERCOT SARA Low: **307%**
- Versus ERCOT SARA Extreme Low: **3,791%**

### May 9-21, 2022 Hot Spell
- Average hourly output: **17,576 MW**
- Versus ERCOT SARA Normal: **195%**
- Versus ERCOT SARA Low: **634%**
- Versus ERCOT SARA Extreme Low: **7,032%**

### July 11-13, 2022 Hot Spell
- Average hourly output: **6,759 MW**
- Versus ERCOT SARA Normal: **72%**
- Versus ERCOT SARA Low: **235%**
- Versus ERCOT SARA Extreme Low: **2,600%**

### August 2022
- Average hourly output: **8,514 MW**
- Versus ERCOT SARA Normal: **91%**
- Versus ERCOT SARA Low: **296%**
- Versus ERCOT SARA Extreme Low: **3,288%**

ERCOT plans its operations around what it expects from resources based on years of data analysis, as well as robust short-term, day-of, and hour-ahead forecasting. For this reason, using ERCOT’s forecasted expectations to determine how a resource performs is most appropriate. Simply comparing real-time generation output of wind power to its installed capacity is inappropriate and misleading. It is also important to remember that these weather events are extreme in nature, meaning “normal” wind power output is not expected by ERCOT.

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1. Data source for all analysis is from ERCOT public reports.
2. Seasonal Assessment of Resource Adequacy (SARA)
3. Due to the nature of this storm, there was extreme icing on the ERCOT wind fleet.
4. Event included because of ERCOT-issued conservation notice.
5. Summertime SARA data used due to extremely high temperatures during event.
6. Month considered because it was second hottest Texas summer on record.