



A portion of Sustainable FERC Project's [interactive map](#) showing renewable energy projects withdrawn from the MISO Generator Interconnection Queue.

# New Interactive Map Shows Clean Energy Projects Withdrawn from MISO Queue

## *Grid Constraints Are Holding Back Renewables Development*

A new [interactive map](#) created by NRDC's Sustainable FERC Project displays **county-level data on both active and withdrawn** wind, solar, energy-storage and hybrid (renewables + storage) projects in MISO's Generator Interconnection Queue from January 1, 2016 through July 15, 2020. The map depicts both the potential for clean energy development in the Midwest and South, as well as the headwinds to growth as projects drop from the pipeline, in part due to lack of grid capacity that results in high interconnection costs.

### Key Findings

- **245** clean energy projects that had reached advanced stages of the generator interconnection process were *withdrawn* from the MISO Queue – more than **40 percent** of all projects included in the analysis.<sup>1</sup> These withdrawn projects could have powered about 7.6 million homes.<sup>2</sup>
- **Michigan and Minnesota** topped the list of MISO states with the most withdrawn clean energy projects and megawatts (42 projects totaling 5,058 MW were withdrawn in Michigan; 36 projects totaling 4,957 MW were withdrawn in Minnesota). See the [Summary Table](#).

The **Midcontinent Independent System Operator (MISO)** is the Regional Transmission Organization that manages the electric grid and energy markets for a 15-state region stretching from the Dakotas to Indiana to Louisiana. Developers of energy generators – like wind or solar – submit their projects to the [MISO Generator Interconnection Queue](#) for study to determine cost to reliably connect to the grid.

<sup>1</sup> Analysis included *all* active projects but only a *subset* of withdrawn projects – those that were furthest along in the generator interconnection process, in Phase II or III or with a generator interconnection agreement (GIA).

<sup>2</sup> National average homes per megawatt multiplier for solar from [SEIA](#) and for wind from [AWEA](#).

- Clean energy projects predominate in the MISO Queue, with **356 active solar, wind, storage and hybrid projects** as of July 15 – nearly 50,000 megawatts, enough to power nearly 10 million homes. There were 11 active gas plant projects in the Queue as of July 15 (4,452 MW).
- **Indiana** (7,895 MW), **Iowa** (6,082 MW), **Illinois** (5,920) and **Michigan** (5,630 MW) topped the list of MISO states with the most megawatts of active clean energy projects.

MISO Interconnection Queue Summary Data Table by State (2016-2020)							
Updated as of July 15, 2020							
State	Project Type	# Active projects*	Total MW Active	# Withdrawn projects**	Total MW Withdrawn	# Projects Active + Withdrawn	Total MW Active + Withdrawn
Michigan	Solar	37	4,641.35	17	1,516.33	54	6,157.68
	Wind	5	928.30	22	3,452.15	27	4,380.45
	Hybrid	-	-	-	-	-	-
	Storage	3	60.00	3	90.00	6	150.00
	<b>TOTAL</b>		<b>45</b>	<b>5,629.65</b>	<b>42</b>	<b>5,058.48</b>	<b>87</b>
Minnesota	Solar	25	2,942.50	15	1,930.48	40	4,872.98
	Wind	7	1,344.00	17	2,912.00	24	4,256.00
	Hybrid	1	335.00	-	-	1	335.00
	Storage	2	60.00	4	115.00	6	175.00
	<b>TOTAL</b>		<b>35</b>	<b>4,681.50</b>	<b>36</b>	<b>4,957.48</b>	<b>71</b>
Mississippi	Solar	7	934.00	12	1,905.00	19	2,839.00
	Wind	1	167.00	-	-	1	167.00
	Hybrid	-	-	-	-	-	-
	Storage	2	90.00	-	-	2	90.00
	<b>TOTAL</b>		<b>10</b>	<b>1,191.00</b>	<b>12</b>	<b>1,905.00</b>	<b>22</b>

Excerpt from Sustainable FERC Project's [Summary Data Table](#) for all MISO states.

## Grid Constraints Stymie New Projects

With more utilities and states in the Midwest and South ([Louisiana](#) most recently) aiming for 80 or 100 percent clean energy goals, the extent of active renewable energy projects in the MISO Queue holds promise. However, that potential is diminished by the high rate of renewable energy projects being withdrawn after reaching advanced stages in the interconnection process. While projects may be pulled for a range of reasons, one clear contributor is the lack of grid capacity across large swaths of the MISO region. For developers with proposed projects in these areas, the grid constraints can result in high interconnection costs, forcing them to shelve otherwise economic solar and wind projects.

In a recent example this year, developer EDP Renewables **withdrew a 100 MW wind farm** in southwestern Minnesota after MISO assigned the company \$80 million in network cost upgrades – **eight times higher than expected**. “Our project could not absorb the additional cost burden,” explains EDPR Origination Manager Vipul Devluk. “Ultimately, we had to cancel our power-purchase agreement discussions with the customer and we had to relay to the local community that the benefits they were expecting from this project would not be forthcoming.”

According to [AWEA, SEIA and Clean Grid Alliance](#), high voltage grid upgrade costs assigned to developers in MISO West have been **raising the total costs of projects more than 60 percent on average**, resulting in many withdrawn projects – a challenge that is now also beginning to impact MISO South.

For more information on the MISO Queue data or [interactive map](#), or to arrange interviews with experts on the analysis or grid solutions needed, please contact Rachele Huennekens at [rachele@resource-media.org](mailto:rachele@resource-media.org).

