

## MISO's RIIA Study is a Great Start to Prepare for the Generation Shift to More Renewables

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On March 3, the Midcontinent Independent System Operator (MISO) presented a final report and key findings from its Renewable Integration Impact Assessment (RIIA), a years-long study of the impact of increasing renewable energy in the MISO footprint. The study evaluated the addition of renewable energy at various penetration levels - up to 50% - to identify challenges that may emerge in transmission, markets and operations, and offered potential solutions to remedy them.

MISO has done an excellent job with this comprehensive study and we appreciate the foresight they have had in getting ahead of the issues before they become problems. Renewable energy is here to stay, so putting forward a report that includes a number of next steps and suggestions for additional research will help chart a course for further development of renewable energy in the Midwest and is just what we need.

Wind and solar developers are being asked to develop projects for utilities as well as corporate and industrial customers who are anxious to deliver low-cost clean energy to their customers and reduce their carbon footprint at the same time. So it was particularly gratifying to read in the report that achieving 50 percent renewable energy on the MISO system is not insurmountable, although the study indicated a significant amount of transmission in the north and western portions of the MISO footprint is needed along with coordinated action on improvement to markets and operations.

Among the important conclusions identified in the study are:

- More flexible resources will be needed, as well as market products and incentives for existing and future gas and storage and even renewables to offer their flexibility;
- More transmission and other emerging technologies will be needed to provide a stable grid capable of delivering power where it is needed; and
- The region needs to move forward expeditiously to address these issues in a timely manner.

Clean Grid Alliance is excited to be a partner in figuring out these really tough challenges. We look to MISO to be a leader because incremental change alone in transmission, markets and operations will not get us to the net-zero goals announced by many utilities. We need bold action, and call on MISO and its members to provide a grid that can reliably add the new resources needed to significantly reduce carbon intensity in the Midcontinent.

The Midwest has excellent wind and solar resources, but is lacking adequate transmission to deliver them. On the heels of the massive power outages in Texas, questions about how much renewable energy the system can handle has prompted even more questions. Whether the system 'breaks' at 30 percent renewables is not the right question. MISO's RIIA study has done a great job identifying what needs to be done to prepare for the generation shift that is already underway, and we urge them to implement the solutions as quickly as possible.

It's wonderful to see MISO has already started this work through the Long-Range Transmission Planning effort, the Resource Availability and Need effort, and the recent Reliability Imperative report.

Clean Grid Alliance encourages MISO to further study how storage and hybrid resources can help provide solutions to ramping, grid stability issues, and to reduce the overall need for transmission. This is a one-step-at-a-time process, but time is of the essence. More work and coordination with all stakeholders will be needed so the region can hone in on and implement solutions to prepare for the generation shift.