

THE 3 **T**S OF THE ENERGY TRANSITION

The energy industry is in the midst of a major transition and Cass County Electric Cooperative is working to ensure its members maintain access to reliable, affordable and sustainable electricity. As changes are made to the power grid, it's important that reliability is prioritized and baseload resources – like coal, natural gas and nuclear power plants – are preserved to provide 24/7 production. While renewable resources are a growing part of our nation's energy mix, they are currently not positioned to meet the continuous demand for electricity.

As we look to move to a lower-carbon future without sacrificing reliability or affordability, we must consider the three Ts of the energy transition – technology, transmission and time.

TECHNOLOGY



Major breakthroughs in technology will be needed to significantly reduce carbon emissions while ensuring power grid dependability. With coal and natural gas still required to maintain reliability for the foreseeable future, efforts to advance carbon capture technology should be supported. Cass County Electric Cooperative and its wholesale power provider, Minnkota Power Cooperative, are evaluating Project Tundra, which would capture carbon emissions from a large coal-based power plant in North Dakota.

For renewable resources, there will need to be substantial advancements in battery capabilities, which would allow electricity to be stored and released when the wind isn't blowing or the sun isn't shining. This technology currently has operational limitations and is only able to discharge power for 2-4 hours at a time, when multiple days of storage/discharge are needed.

TRANSMISSION

Transmission lines also play a key role in ensuring reliability during the energy transition process. Energy often needs to be carried long distances to reach its users. Renewable generation facilities are typically located in remote areas that are far away from demand centers. Adding more high-voltage transmission infrastructure would allow more energy to be generated at those sites. Adding and updating existing lines can also eliminate any congestion on the lines that may cause energy generation to be reduced or be disrupted. Stronger transmission connections across the United States will help bolster reliability now and in the future.



TIME



Perhaps the most important component of a successful energy transition is time. Developing new technology that is sustainable and reliable takes time. Building and updating transmission lines to transport energy takes time. Transitioning to new energy generation resources without jeopardizing the reliability of the grid will take time.

Sudden, extreme changes to our energy systems without proper planning has the potential for severe consequences. Recognizing that the energy transition will take decades helps ensure reliability and affordability can be maintained for the benefits of our local communities.