A S S O C I A T I O N

CASE STUDY: Utility Decision Management

With the help of SmartWorks Compass, Dakota Electric is able to automate repetitive processes, resolve outages faster, reduce load on peak days and minimize energy losses while maximizing the use of assets to better serve its members.

Designed for automation, the SmartWorks Compass platform offers a suite of modules with analytics and reporting capabilities to automate utility processes and gain insights to make data-driven decisions.



SMARTWORKS Make the Complex Simple



Your Touchstone Energy® Cooperative 🔨

Dakota Electric Association[®] is regulated by the Minnesota Public Utilities Commission, and currently reaches 112,748 members. This makes Dakota Electric the second largest electric cooperative in Minnesota and ranked among the 25 largest electric distribution cooperatives in the nation.

Dakota Electric purchases wholesale electricity from Great River Energy, a generation and transmission cooperative in Maple Grove, MN. Dakota Electric delivers electricity to homes, businesses and farms in parts of Dakota, Goodhue, Scott and Rice counties.

Renewable Energy

Great River Energy, on behalf of Dakota Electric and other distribution cooperatives, has a goal to achieve 50% renewable production by 2030 or earlier. They purchase output of approximately 680 megawatts from a variety of wind and solar projects in Minnesota, North Dakota and Iowa, and remains on track to reduce carbon dioxide emissions by more than 80% by 2025. Dakota Electric members voluntarily purchase more than 43 million kWh of renewable energy annually through the Wellspring Renewable Energy[®] program.

Conservation Programs

Dakota Electric delivers more than ^{\$}3.6 million in conservation programs that include: Energy Star[®] rebates, C&I Energy Grants, energy audits and more.

Notable Load Control Statistics

- Ability to shed more than 20% of peak demand
- 100+ MW summer and 70+ MW winter controllable
- Summer controllable load is equal to the energy used by approximately 30,000 homes
- Approximately 47,000 air conditioners on load control.

Giving Back

Community Involvement



\$32,800 From member donations

From member donations to our Helping Neighbors® program.



\$78,000 Donated to charitable organizations from Dakota Electric.

^{\$}26,800

Donated by employees to bettering the communities we serve.



Dakota Electric facts and statistics are based on 2021 year-end data.





Challenges:

The member-owned, notfor-profit electric distribution cooperative determined it was time to improve data reliability and pursue new technological solutions to track solar resources and monitor load control contributions.

As the power provider to homes, businesses and farms in parts of Dakota, Goodhue, Scott and Rice counties, the cooperative decided to update its response capabilities to track and monitor where losses are occurring throughout their Advanced Grid Infrastructure (AGi) network.

Solution:

The Dakota Electric team opted to utilize the SmartWorks Compass platform to automate workflows and streamline processes across multiple utility systems, all using different technologies.

"Being able to quickly get the alarm and replace the failed metering helps reduce estimated billing issues."

Craig Turner,

Sr. Principal & Regulatory Engineer Dakota Electric Association

Dakota Electric uses an extensive range of SmartWorks modules to improve the customer experience and increase operational efficiency. For example, virtual metering calculations are used to aggregate and track distributed energy resources and load control performance. SmartWorks Compass also identifies transformers that need to be replaced, for instance when load has grown too high for the transformer's rating.

One of the items that Dakota Electric has been tracking since before the AGi meters were installed, is the number of meter reading issues. As expected with the clean meter reading data being supplied by the AGi meters, you can see on the following graph, the amount of estimated bills and billing adjustments has dropped considerably.





With SmartWorks Compass, Dakota Electric was able to:

- 01 Use virtual meters to gain better insight into how DER and Load Control is operating and performing.
- 02 Identify transformers that need to be replaced to improve system reliability and reduce asset costs.
- 03 Eliminate the need to install costly two-way metering for DER installations.
- 04 Support new unique rates, such as the virtual meters for EV charging recommended by the PUC.
- 05 Reduce three-year system line loss average loss from 2.3% to around 2.1%.

- 06 Identify member power quality issues before they even know there is an issue.
- 07 Reduce time & cost to restore service after a disconnection due to non-pay.
- 08 Quickly Identify metering failures to provide more accurate billing for members.
- 09 Get on- and off-cycle meter readings remotely, validate reads, and reduce the need to drive to the meter.

Integrated Modules	Key Benefit
Direct Load Control Verification	Reduce the need for field investigations.
Voltage Analysis	Early detection of voltage issues.
• Blink Analysis	Track and analyze momentary outages
• Line Loss Analysis	Identify, quantify and visualize energy losses.
Transformer Loading Analysis	Improve system reliability and reduce asset costs.
Outage Performance	Network visibility to help resolve outages faster.

With these new insights, Dakota Electric is able to automate repetitive processes, resolve outages faster, reduce load on peak days and minimize energy losses while maximizing the use of assets to better serve its customers and members.



Get in touch to schedule a demo or speak to one of our consultants to learn how the SmartWorks Compass platform can achieve these results for you.

FOR MORE INFORMATION

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