



Balancing electricity supply and demand

by Jared Echternach, president and CEO

Electricity is essential for nearly every aspect of daily life – so essential that we rarely think about how it’s produced and delivered to our homes. You might be surprised to learn that behind the scenes, a network of experts is working daily (and even by the minute) to anticipate how much electricity you need before you even use it.

We’re all connected to the electric grid, so ensuring the right amount of electricity for all involves a complex process of forecasting energy demand, planning for capacity and securing enough supply to meet Americans’ needs.

Powerful sources

First, electricity must be generated at a power plant using either traditional sources, such as coal, natural gas or nuclear energy, or from renewable sources, such as solar, wind or hydropower.

At Beltrami Electric Cooperative, we work closely with Minnkota Power Cooperative, our local wholesale power provider, to secure enough electricity for our communities, using a diverse mix of energy sources to generate the power we deliver to your home or business. By maintaining a diverse energy mix – coal, wind and hydropower – Beltrami Electric has options to ensure reliable power at a competitive cost.

On a larger scale, across the country, electricity supply and demand are managed through a market that includes long-term planning agreements, where electricity is bought and sold just like other common goods and services. Because Beltrami Electric works with our wholesale power partner, which is also a cooperative, we are able to pool resources and expertise to deliver affordable power to our local communities.

Electricity supply changes throughout the day because demand fluctuates based on

consumers’ needs. For example, Beltrami Electric knows that we need to ensure more electricity in the mornings when you’re starting your day, and in the evenings when you’re cooking dinner, running appliances and watching TV. Demand also increases when weather patterns change, such as extremely warm or cold temperatures.

Managing supply and demand across the grid

Across the country, other electric utilities are managing the same task of balancing supply and demand, which is why we have a larger network of key players in place to ensure enough power is delivered across the grid.

A Balancing Act: ELECTRICITY SUPPLY AND DEMAND

Behind the scenes, a network of people and facilities work together to ensure you have electricity when you flip the switch.

Electricity is generated at a power plant, then sent across the grid to homes, schools and businesses.

The amount of electricity generated and how much is sent to where it's needed are typically coordinated and monitored by regional grid operators that essentially act as energy traffic managers.

Regional Grid Operators

Regional Transmission Organizations (RTOs) | Independent System Operators (ISOs) | Electric Utilities

As electricity demand varies throughout the day, grid operators, power plant operators and electric utilities work to forecast, plan and purchase enough electricity for everyone.

Ensuring communities have the exact amount of electricity they need is a challenging task, but behind the scenes, a network of industry experts make it happen every day.

Factors that Impact Electricity Supply and Demand

- Demand Surges
- Supply Chain Challenges
- Extreme Temperatures
- Fuel Costs
- Infrastructure Costs and Availability
- Federal and State Regulations