

Power Generation Q&A

Power generation is not as simple as building a few power plants, turning on the switch, and sending electricity through the grid to power homes and businesses. Power suppliers must plan years (sometimes decades) in advance to successfully add generating resources to their fleet. They also need to factor in federal, state, and local regulations and policies to construct new facilities. In addition, public acceptance is also a consideration as it becomes more and more challenging to site and build infrastructure needed to provide reliable electricity to all members.

To help answer common member questions, we developed the following information. Power generation is a complex issue – we hope this document helps paint a picture of the intricacies of the electrical system, how it impacts your rates and what it takes to ensure reliability into the future.

Why can't Sioux Valley Energy just build more affordable coal/natural gas/renewable energy generating resources?

Sioux Valley Energy does not generate electricity and does not decide which types of generation to build. However, its power supplier is building natural gas-fired generation and adding new transmission assets to the electric system.

To explain, the electric co-op system in this area is divided into three tiers – generation, transmission, and distribution. Sioux Valley Energy serves as the distributor, delivering electricity directly to its end members. Its power suppliers, East River Electric and L&O Power Cooperative, manage the transmission tier, while Basin Electric Power Cooperative (Basin Electric) generates electricity from a diverse energy mix. Additionally, the Western Area Power Administration contributes hydropower generated from dams on the Missouri River.

Sioux Valley Energy has what is called an “all requirements” contract with its power suppliers, which means the Cooperative must purchase all its power from its power suppliers. The only caveat to the “all requirements contract” is Sioux Valley Energy’s solar demonstration projects and individual members who produce their own power at their home or business through small-scale renewable energy systems. There are limitations on the size of those systems, however.

Sioux Valley Energy owns two solar arrays that produce a small amount of electricity – a community solar array near its Colman headquarters and a demonstration solar array at its Brandon facility. Both solar arrays are small-scale demonstration projects that are not meant to produce a significant amount of electricity.

Isn't coal the best resource we have for electricity generation?

Sioux Valley Energy supports an “all of the above” energy generation strategy as the most prudent and effective approach. This strategy ensures a diversified energy mix, avoiding reliance on a single source or “putting all our eggs in one basket.”

It is essential to have baseload generation (24/7 power) as the powerhouse of the generating fleet. Traditionally, this role has been filled by coal. But as the political and regulatory landscape has shifted, so has the approach to the construction of new generation.

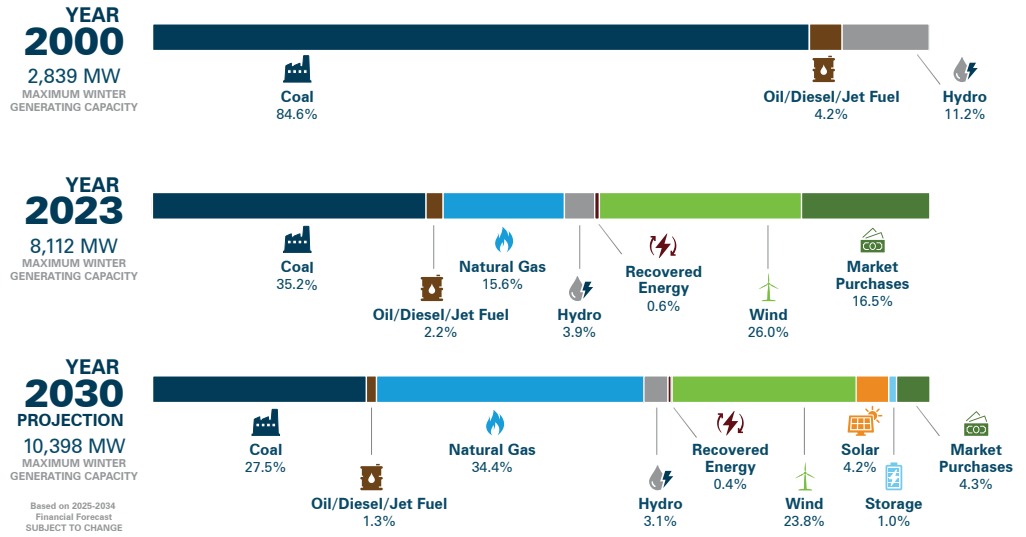
Coal still makes up just over 35% of Sioux Valley Energy’s wholesale power supplier’s (Basin Electric Power Cooperative) power-generating fleet. Coal remains an important part of the equation and provides a reliable source of power through a fuel source that can be stored

or mined near the generator. Natural gas is the most economical dispatchable power generation to finance, permit, and operate. Renewables such as wind and solar do fill a need in power generation even though they are intermittent (do not run 24/7). Depending on the weather conditions across our region, wind can meet as much as 80% or more of our total power supply needs on a given day. But if the wind isn’t blowing across a large portion of our region, it could provide 1% or less of our power supply needs. Wind and solar work very well when matched with natural gas. This is because natural gas plants can quickly change the output to match the variability or intermittency of wind and solar. At the end of 2023, renewable generation made up over 30% of Basin Electric’s energy portfolio, which

includes wind and hydro.

As new baseload generation is built, the focus has shifted to natural gas due to its ability to provide reliable and affordable energy. Sioux Valley Energy's wholesale power supplier is planning to construct two additional natural gas resources in the next five years to meet future energy needs. Because of regulatory and political pressures on coal, they are leaning towards natural gas as the most viable source for reliable generation. Factors such as public education and the complexities of the siting and approval process are being carefully navigated to advance these projects successfully. New baseload generation HAS to be built because the demand for electricity is increasing and there is a need for both baseload generation and renewable generation to fill that void. This presents an opportunity to invest in modern, highly efficient power plants that will provide reliable energy for years to come, ensuring continued service to our members.

BASIN ELECTRIC'S ALL-OF-THE-ABOVE ENERGY STRATEGY IS DEPICTED BELOW.



Note: Megawatts based on winter season net generating capacity as of Dec. 31, 2023, across the entire service territory.

The chart above shows how its power generation portfolio has changed over the years and what is being planned for the future. You can find some great information in Basin Electric's Sustainability Report found here: https://www.basinelectric.com/_files/pdf/financials/Sustainability-Report-November-2024.pdf

Are rates going up because renewable generation resources like wind and solar are expensive?

Renewable energy, such as wind and solar, are an important part of the "all of the above" power supply strategy mentioned earlier. These resources are intermittent, which means they do not run 24/7. Baseload-generating resources such as natural gas and coal run 24/7 and are the backbone of reliability for electric co-ops.

Costs for wholesale power are increasing. Sioux Valley Energy's wholesale power suppliers, Basin Electric and the Western Area Power Administration (WAPA), have increased their rates in 2025. For Basin Electric, factors for the increase include inflation, higher equipment and maintenance costs, and additional

investments in generation and transmission to meet a growing demand for electricity. For WAPA, increased operations and maintenance costs, along with drought, were the impacting factors for the power supply cost increase.

Basin Electric currently owns or purchases power from more than 20 various wind facilities in North Dakota, South Dakota, and Minnesota. None of those wind facilities are located within Sioux Valley Energy's service territory. Basin Electric purchases power from one solar facility located in Pennington County, South Dakota, as well as some recovered energy generation along the Northern Border Pipeline.

Why is SVE "pushing" electrification, and is that causing our rates to go up?

Sioux Valley Energy does not push members to convert to electric technologies. However, we are increasingly fielding inquiries and requests for beneficial electrification programs from our membership, and we are responding to those needs. Electric technologies provide consumers with desirable attributes such as quiet operation, zero emissions, minimal maintenance,

and ease of use, which are driving the interest in those technologies. Our role is to educate members by providing factual information on electrification and develop programs that incentivize off-peak electric use and charging. This is beneficial to all members by helping to control demand costs for the Cooperative.