

BUSINESS POWERUP



Incorporating Beneficial Electrification into Your Operation

In our third issue of Sioux Valley Energy's *Business PowerUP* monthly newsletter, we look at the concept of beneficial electrification (BE). Beneficial electrification will become an important part of the future for electric utilities and that includes Sioux Valley Energy. Over the last several years, we have expanded our programs and services meant to encourage BE. As demand for these and other programs increase, we have recognized a need for a dedicated BE department. That department is the go-to for all things related to BE, such as renewable energy, new technology, load management, rebates, consumer advice, energy storage, and much more. In this month's Inside the Grid podcast episode, we talk with Beneficial Electrification Manager Ben Pierson and Energy Services Specialist Sheila Gross about trends in BE.

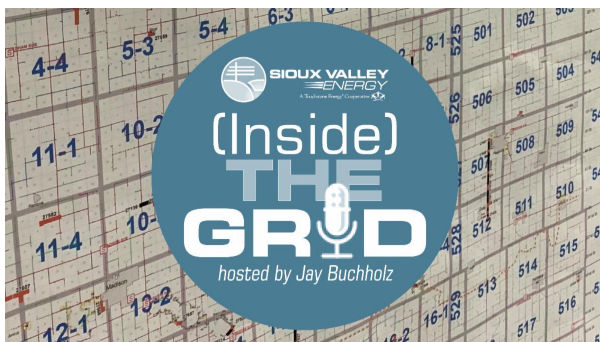
Next month, we'll look at building a culture of safety.

If you have suggestions for future issues or wish to discuss your operation's current and future energy needs, please contact me at jay.buchholz@siouxvalleyenergy.com or call my cell phone at 605-940-2053.

You can find previous issues of *Business PowerUP* at www.siouxvalleyenergy.com/my-programs/commercial-and-industrial-member-resources.

[Visit our Website](#)

Inside The Grid Podcast



In this month's episode of Inside The Grid podcast, Jay Buchholz talks with two experts: Ben Pierson, Sioux Valley Energy Manager of Beneficial Electrification, and Sheila Gross, Energy Services Specialist. They discuss the concepts of beneficial electrification as well as programs and incentives Sioux Valley Energy offers that can benefit your business operation.

[Inside The Grid: Beneficial Electrification Episode](#)



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Available Rebates and Incentives for Commercial Members:

Electric Heat: Electric heat rebates are available for agricultural, commercial and multi-family facilities. Heat pumps are rebated at \$50/ton up to 150 tons. Electric resistance heating equipment is rebated at \$10/kW up to 600 kW.

- A sub-meter can be installed on electric heat equipment to receive a reduced rate for the billing cycles of October - April.
- The sub-meter is free for heat pumps two ton or larger and electric resistance heat over 5 kW, or a \$200 installation fee is charged. (**Former Alliant Energy customers are not eligible for the heat rate.*)
- Fees apply for sub-metering three-phase equipment.
- The electric heat rate is not available for large power accounts. Apartments up to eight units can be sub-metered for the reduced rate. Tenants in all-electric heated apartments larger than eight units can receive a reduced rate program in lieu of sub-metering.

Lighting: Rebates are available for retrofit LED lighting projects in existing agricultural and commercial facilities. A rebate of \$0.10 per watt saved up to 50% of the project costs or a maximum rebate of \$1,000 per account is available (lifetime member maximum of \$5,000).

Irrigation: A one-time rebate of \$750 per device is available for a third-party remote managed irrigation system that allows SVE to control usage during peak times. Members participating in the load management program receive a reduced rate per metered kW for the billing cycles of June through September. (**Former Alliant Energy customers are not eligible.*)

Energy Audits: Sioux Valley Energy will reimburse commercial power customers, up to \$1,000, for a third-party commercial energy audit.

Commercial Public EV Charger: Businesses that promote the charging infrastructure for electric vehicles by installing a level II or larger charging station for public/employee use are eligible for up to a \$500 rebate. In addition, they can receive a rebate for one year's worth of Renewable Energy Credits to offset 100% of their energy usage with renewable energy.

- The business must be a Sioux Valley Energy member.
- Proof of purchase/installation is required.

Click [HERE](#) to download the Commercial Public EV Charger Rebate Form

Batteries and Beyond

Battery storage is an option for commercial and industrial businesses, take a look at the fact sheet below to learn more. You can download a .PDF of the article [here](#).



Battery storage systems in commercial and industrial facilities share many of the benefits of those in residential settings. They allow a business to save money by navigating demand charges and time-of-use rates, maintain operations during an outage and capture energy generated by a solar photovoltaic (PV) array.

COMMERCIAL AND INDUSTRIAL MEMBER BENEFITS

Demand Charges - Commercial and industrial members must often pay demand charges, which are fees incurred when businesses draw large quantities of power in short periods of time. These charges can represent a large portion of a facility's energy bill. Installing a battery storage system can help lower these expensive surges in power demand and save businesses money.

Load Shifting - Controllers for your battery storage system are available that can learn your business's power usage patterns and automatically shift consumption from the grid to lower demand and lower cost times when using time-of-use and related rate structures.

Reduced Downtime - Outages can cause commercial and industrial companies to lose a large amount of money due to production delays. A battery storage system can ensure that your shop, factory or service center remains open, and this added resilience can make you more attractive to customers.

Power Quality Management - For manufacturing and services that require high quality power, a battery storage system can help reduce or eliminate frequency changes, voltage sag and power factor issues.

Solar Integration - One of the biggest issues for solar power is that its production peaks at midday, while demand for electricity peaks in the morning and evening. Battery storage can help mitigate this mismatch by storing the power generated by solar for later use.

HOW BATTERY STORAGE WORKS

Charge Controller, Inverter, Batteries - The three essential components of any battery storage system are the batteries that store energy as direct current electricity, an inverter that converts the direct current to alternating current that can be used by electronics and appliances in your business, and a charge controller to direct the system.

Lithium-ion vs. Lead Acid - The most common chemistries used in battery storage are lithium-ion and lead acid. Lithium-ion batteries can accommodate varying daily charge levels, while lead acid should be brought back to 100% every day. Though generally more expensive, lithium-ion batteries are also available in simpler and more attractive all-in-one wall-mountable packages. Lead acid batteries require more maintenance, safety and venting considerations.

Controller Functionality - Controllers for your battery storage system are available with different features and capabilities, but most can operate in some form of these three modes:

- **Emergency Backup Only** - The system will always keep the batteries charged, for use during an outage.
- **Self-Powered** - The system will focus on using as little grid power as possible by balancing the power generated from a solar array, the charging/discharging of the batteries and the power used in your business.
- **Time-of-Use Load Shifting** - In markets where time-of-use pricing is available, the system can charge the batteries when power is cheaper and discharge them when it is more expensive.

HOW BATTERY STORAGE IS INSTALLED

Assessment by Contractor - Many solar installation companies have the expertise and experience to properly assess your business's needs and design an appropriate battery storage system. A key factor in deciding your system size will be whether you want battery storage primarily to save money, back up your business during an outage, mitigate power quality problems or some combination. Your contractor should also be familiar with your co-op's permitting and interconnection requirements for battery storage installations as well as any tax incentives or rebates available in your area.

AC vs. DC Coupling - One of the first decisions you and your contractor will have to make is whether to install an AC or DC coupled system. An AC coupled system uses an inverter to convert the DC from your solar array to AC, and a separate inverter to charge and discharge your batteries. A DC coupled system uses a charge controller to directly charge the batteries from the solar array and only one inverter to connect to your business and the grid. DC coupled systems are generally more efficient but also more complicated to install, especially when integrating with an existing PV installation.

Retrofitting an Existing PV System - While it is easier and more cost-effective to install a battery storage system while installing solar PV, it is never too late to add storage. Your contractor will likely recommend an AC coupled system, which will require less retrofitting. A new subpanel and other equipment will also need to be installed to enable your solar PV to power your business and charge the batteries while the grid is down.

Equipment Size, Shape, Location - Depending on the size and features that you and your contractor choose, the system could range from something small that can hang on the wall in a utility room to a larger outdoor unit similar to an air conditioning compressor.

*This article was provided by Advanced Energy, a nonprofit energy consulting firm.
For more information, visit www.advancedenergy.org.*

**FOR MORE INFORMATION, VISIT
TOUCHSTONEENERGY.COM**

Check out the Commercial Energy Savings Guide for More Tips for Your Business Operation

Energy efficiency measures can help your operation save money. Here are the top ten tips to saving energy in a commercial setting:

[Download the Commercial Energy Savings Guide](#)



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