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### May-June 2019

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Cass County Electric Cooperative and Minnkota are celebrating an innovative state first after supporting West Fargo Public Schools in acquiring an all-electric school bus. It's the only bus of its kind in North Dakota - for now.

On the cover: Meat tycoon Mychal Stittsworth shows off just one of the dozens of meat choices at his Stittsworth Meats shop in uptown Bemidji, Minn. Stittsworth recently opened a new processing facility north of town and unveiled a mobile slaughter unit that is carving a new path for the family business.

Minnkota Messenger is published six times a year by Minnkota Power Cooperative. Its mission is to communicate Minnkota's perspectives and concerns to its members, elected officials, employees and other business audiences. For editorial inquiries, call (701) 795-4282 or email bfladhammer@minnkota.com.

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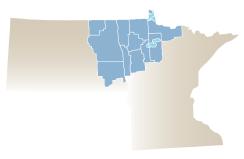






### In this issue ...

In this issue of the Messenger, we follow the forward thinkers in our service area who are finding new ways to do business. Some are making process improvements to stay competitive in changing industries. Others are pivoting to provide more value to their communities. Electricity helps power this innovation - from a high-tech meat processing facility to a plant that is shifting its focus toward recycling. Minnkota is doing its part by installing new technology in the field to provide more information to crews who are operating and maintaining the power delivery system. That means our system is smarter and more efficient to meet the needs of today, while still preparing to adapt to the evolving needs of the future.



Minnkota Power Cooperative is a generation and transmission cooperative headquartered in Grand Forks, N.D. It supplies wholesale electricity to 11 member-owner distribution cooperatives, three in eastern North Dakota and eight in northwestern Minnesota. Minnkota also serves as operating agent for the Northern Municipal Power Agency, an association of 12 municipal utilities in the same service region. Together, the Joint System serves more than 150,000 customers.







# King of the cuts

BEMIDJI NATIVE BLAZES NEW PATH FOR PROCESSING AND PROMOTION TO BOOST FAMILY MEAT BUSINESS







formulated to make a beef-based butcher business boom. The owner and operator of Bemidji's Stittsworth Meats is packing generations of industry knowledge, the

ychal Stittsworth is perfectly

design and efficiency know-how of two engineering degrees (civil and industrial), the discipline of the U.S. Air Force and a network of lifelong community supporters.

Remove any sense of self-doubt and you have the Six Million Dollar Man of the Minnesota meat trade.

"He's just fearless," said Corey Stittsworth, who sold Stittsworth Meats to his son Mychal in 2010 after 35 years in the business. "He's very smart and so ambitious. He's just willing to take that leap."

"It's been kind of a whirlwind, that's for sure," Mychal said inside his brand new Stittsworth Smokehouse, ten miles north of Bemidji. The new processing facility, in combination with Mychal's innovative Mobile Slaughter Unit (MSU), is the product of his desire to take the family business to the next level of quality and reach.

Stittsworth Meats has long been

known for its local smokehouse sales. Mychal wanted a larger facility to ramp up production and enter into the wholesale market. He used his design training to draft the most efficient layout from meat drop-off to delivery. He also incorporated state-of-the-art equipment to maximize processing, including a bratwurst cutter that saves 20 work hours per day.

During the building's planning stages, Mychal found the Holy Grail of industry efficiency. He discovered the idea of a trailer that could travel directly to farms to process livestock on-site. By cutting out the stressful journey to a slaughterhouse hours away, the quality of the product remains at its peak.

"The animal starts burning calories. You lose marbling, and the farmer loses money because the cows are losing weight all the way to the plant," Mychal said. He further explained that livestock lose up to 10% of their overall body weight on the ride, meaning farmers lose 10% of their profit and another 10% on shipping.

"That's something I'm always searching for - how to be better and how to be

# "It's kind of cliché, but you just can't quit. If you're stumped, you don't quit – you just find an answer."

Mychal Stittsworth, owner/operator
 Stittsworth Meats

different," Mychal said. "This seemed like a slam dunk."

### **Tested system**

He felt he had worked out a solid system, but Mychal wanted to make sure he wasn't missing anything. In 2017, he entered his business plan into the IDEA Competition (sponsored in part by Minnkota), a process that connects entrepreneurs in northwest Minnesota with coaching and capital.

Stittsworth Meats won. Mychal had his proof.

A little over a year later, the MSU was traveling to farms within 50 miles. Stittsworth works with six to eight local farmers

> on rotation, timing trips to when the herds are just the right size and weight.

The MSU has visited the Bemidji-area farm of brothers Karl and Eric Gustafson twice, processing 18 head of cattle. Karl says he appreciates knowing their

pay weight as soon as the Stittsworth team leaves and he doesn't have to worry about transport or shrinkage of the livestock.

He also understands the economic benefits.



Stitturanti:

St

Mychal worked with a builder out of Vancouver to craft the MSU, which is designed to meet all USDA requirements.

Sides of beef can slide right from the mobile slaughter unit into the Smokehouse, where they move onto further processing.

"If Mychal can take our animals, put a name to it, put the locally grown label to it and make a premium because of it, then maybe that trickles down to us," he said. "He needs to establish markets, we need to be paid for our product and we think we will be taken care of."

"If people had never heard of us as a brand, for our homemade smoked products, this was something to fall back on – how we got our meat and the economic impact," Mychal explained. "It's 8-to-1. If you spend \$10 million with the farms, that's an \$80 million impact."

The success of the Smokehouse and MSU pairing won Stittsworth Meats the Chamber of Commerce's New Business of the Year Award, which now sits nestled between several other awards in the shop.

### **Connected carnivores**

Mychal's connection with the community goes beyond economics. In the Smokehouse, Bemidji Brewery kegs stand ready for collaborative beer brats. In the Stittsworth shop on Paul Bunyan Drive, you'll find sauces and sides from other local businesses. But it's Mychal's relationships with his customers and crew – discussing fishing with patrons and catching up with the meat cutters between slices – that truly show his lakes-area link.

His network of friends grew substantially when he decided to change the way he promoted his business, moving his budget from print ads to something more digitally engaging: Facebook.

"Instead of just saving the money, I gave it all away," he said, describing mega meat giveaways that summoned an onslaught of likes. "I would watch our followers grow and grow and I would see if I was doing things a certain way. I would just watch the trend."

Now, Stittsworth Meats connects with more than 76,000 Facebook fans, unheard of for a small business that has no marketing arm.

"It's all just right here," Mychal said as he picked up his smartphone. The selftaught promotion master is now chatting with Facebook representatives about how he can shift from marketing as a store to marketing as a brand - an essential step to nationwide distribution.

### **Electric bond**

Mychal worked with Beltrami Electric Cooperative to route three-phase power from the nearest substation to the new Smokehouse, making the rural location a possibility. The partnership is more than power supply. The cooperative started an incentive program that offers meaty rewards to contractors for installing more kilowatts of electric heat and off-peak load.

"We bought Stittsworth gift cards for them for the value of what they had installed for the year," said Beltrami Electric's Angela Lyseng.

For Beltrami Electric's 75th anniversary, Stittsworth was on-site to grill brats, and the co-op hopes to have them out again for a future celebration. The entities have formed a bond.

"For someone who has personally grown up in the community, it's really exciting to see that wherever I go and stop in convenience stores, I can always find Stittsworth Meats," Lyseng beamed.

With products already in nearly 600 stores, Mychal has set a goal of reaching a couple thousand by summer's end. The Bemidji meat shop alone is producing 500% over the record sales set before he took the reins and, between the new facility and the storefront, Stittsworth has grown a team of three into a workforce of 28.

The king of the cuts is not slowing down. "It's kind of cliché, but you just can't quit," he said. "If you're stumped, you don't quit - you just find an answer."



Gary Bodien, one of the Smokehouse's 21 employees, says he loves working on Mychal's team because every day is different. "You see it from the beginning to the end," he said. "You get to have your hands in every part of the process, and I like that."





# Making our grid smarter

DISTRIBUTION AUTOMATION PROJECT TO IMPROVE OUTAGE RESPONSE, COMMUNICATION WITH MEMBERS

hen a power delivery system issue occurs in a rural part of Minnkota's service area, information can be scarce.

Power system operators in the cooperative's Grand Forks control center are sometimes left to make an educated guess on the right crew and equipment to send out to the scene.

"It usually requires an explor-

atory trip either by the outpostman (line worker in the area) or one of our crews to say, oh, this is actually broken. Now let's go get what we need," said Jim Brower, technical maintenance superintendent.

Brower's crews are in the second year of a major effort to bring greater visibility to all corners of the cooperative's service area. As a part of the distribution automation program, technologies are being installed at distribution substations that will bring real-time data into Minnkota's control center. Accurate information will help crews respond to outages and other issues more safely and efficiently.

"By receiving real-time data from the substations, we hope to more quickly respond to outages and other power quality issues," Brower said.

Advanced communication to

## "By receiving real-time data from the substations, we hope to more quickly respond to outages and other power quality issues."

- Jim Brower technical maintenance superintendent

Minnkota's substation sites is made possible by adding a computer system, known in the industry as SCA-DA. This system will help gather and analyze data while also monitoring and controlling equipment processes remotely. All new substations have the technology in place.

### **Building connections**

The long-term focus of the distribution automation program is to have advanced communication equipment installed at all 212 of Minnkota's distribution substations in eastern North Dakota and northwestern Minnesota. These substations are used to lower voltage so electricity can be safely delivered into local communities by the member cooperatives and associated municipals.

Communication is changing immensely with the installation of the new distribution automation equipment. Before the new technology, the cooperatives and municipals would receive notice of an outage and investigate potential issues at the substation.

With the new technology, Minnkota knows when a substation is offline and is able to provide additional information to the member.

"We can actually tell our member cooperatives and municipals what's going on," Brower said. "At least they know the problem when their



Jason Johnson, senior technician, completes telecommunications wiring work as part of the distribution automation project.

member-consumers start calling about what's going on."

With new distribution automation meters and regulators at several substations, Minnkota employees can now communicate with the regulator panels. If employees cannot connect to the regulator panel, they know to send technical maintenance personnel out to the site. If they can connect with the panel, they know it's an electrical problem and construction and maintenance crews will then be sent out.

"If we have an issue, the alarm will come into the control center so we know right away, but we can

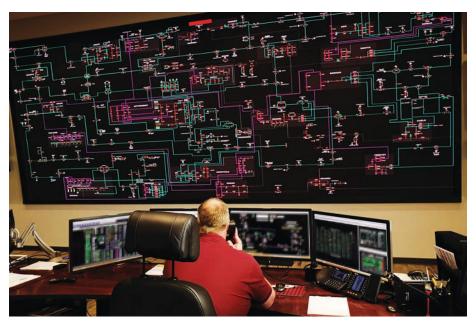
also make a maintenance connection on the devices and

interrogate them from here in Grand Forks," Brower said.

About 15 to 18 distribution substations are scheduled to receive the new equipment each year. Minnkota estimates investing about \$1 million annually into the program.

"The biggest part of it is getting SCADA visibility to all these loadserving substations," Brower said. "The substations, the voltages, the current on each phase - all that data is available to them."

By Kevin Fee / Photography Michael Hoeft and Kevin Jeffrey



The distribution automation project will help provide power system operations personnel like Mike Bedney with more information from the substations across Minnkota's system.



on Steiner likes to tell the story about a county commissioner from outside their partnership group who came to see the Polk County Solid Waste Management facility in Fosston, Minn. Steiner manages the facility as Polk County's environmental services administrator.

Fosston is home to six counties' regional waste and recyclable material processing facility that was just recently expanded and

SIX COUNTIES BRING GARBAGE TO UNIQUE FOSSTON FACILITY upgraded. The commissioner wanted to check out how the new optical sorters worked. The optical sorters are a series of machines that use light beams to scan materials which pass under them to detect what kind of plastic they are made from.

If it detects the type of plastic it's programmed to eject, it triggers a burst of air to blow the item onto a specific conveyor belt. Each conveyor belt carries a different type

of plastic to individual bins to be baled and marketed.

It takes the optical scanner a millisecond to make each decision.

Because the new equipment wasn't up and running, Steiner asked one of the equipment installers to turn the first optical sorter on to test it for the commissioner. He grabbed a few nearby plastic soda bottles and threw them on the conveyor belt to show the commissioner how the system works.

"We fired up the machine for him," Steiner said. "It was dead quiet in here. We put the pop bottles on the belt and watched them going zipping down the line. It sounded like a .22 going off, a loud crack and all you could see was dust off the bottle."

The commissioner watched each plastic bottle go down the conveyor and disappear in a cloud of dust.

"He kept insisting they were being disintegrated. We had to show him, walk him

around to the back side where you could see the bottles coming out on that quality control line. He thought for sure we were destroying them."

Not a lot is destroyed at the Polk County Materials Recovery Facility, which handles recycling and garbage for Polk County and five other counties - Beltrami, Clearwater, Hubbard, Mahnomen and Norman. Large items such as couches and beds are sent to the landfill down the road.

Polk County's operation is an innovative way to deal with garbage. In addition to sorting waste that residents have recycled, it pulls recyclables out of waste and turns leftover garbage into energy. The management and disposal of waste has changed over the years. Small community dumps and burn pits have given way to high-tech regional material recovery facilities and waste-to-energy incineration plants like the Polk County facility, which is the second-largest customer for Fosston Municipal Utilities.

Steiner said 20% to 25% of the material that comes in the door at the Polk County site gets used again or recycled. Recycled materials are sold; what's left is incinerated. The resulting ash is hauled to the Polk County Sanitary Landfill in Gentilly, where it is stockpiled, screened and reused in road construction projects.

The incinerator part of the process isn't new. It's been burning trash for decades. The steam from waste combustion is sold to businesses in the Fosston industrial park. Similar waste processing and combustion operations are also located in Minnesota, with the idea that it will be less expensive in the long term to recycle more materials from the trash and then burn the remaining waste for energy.

The nearly \$11 million facility expansion and upgrade has allowed it to speed up its process and pull clean cardboard, aluminum and ferrous metals and multiple types of plastic containers out of garbage. The same equipment also is used to process recyclable materials, and another optical sorter is used

to clean paper to be recycled. Steiner said it's the only facility in the state that uses the same equipment to sort recycling and garbage.

"We chose equipment that worked for the garbage and then adapted it back for the recyclables," Steiner said. "It does the same thing."

To upgrade the equipment and process additional materials Polk County added an 18,000-square-foot building addition, which included space for incoming materials and the new equipment.

"The one unique thing with our project is we kept operating all through construction, so it slowed the construction process down when we were trying to work around things and trying to replace equipment while we were backing trucks up and pulling trucks out," Steiner said. "It's a lot easier to have a blank canvas."

Steiner said Polk County waste has added six to seven employees over the last several years in anticipation of the new equipment and processes, and needs to add a few more. After about a year and a half of construction, the new equipment went live on Dec. 5, 2018.

The Polk County facility can now process more material, process it faster and deliver a cleaner recyclable material, which is important when the waste and markets are continually changing.

By Kevin Fee / Photography Kevin Jeffrey



Employees sort garbage at

the Polk County facility.



The optical scanner moves plastic one direction or another.



# Plugged-in pioneers for education transportation

MINNKOTA JOINS WEST FARGO PUBLIC SCHOOLS AND PARTNERS TO UNVEIL STATE'S FIRST ALL-ELECTRIC SCHOOL BUS

s nearly 50 adults settled into the classic blue school bus seats of West Fargo Public Schools' (WFPS) newest addition to the fleet, transportation director Brad Redmond's voice sounded through the bus speaker system.

"The bus is now on," he said.

"What?" answered a handful of riders, looking at each other with an edge of awe and skepticism. The disbelief came from the fact that although the school bus had been powered up, there was no loud diesel rumble, no vibrating seats, no indication of automotive life at all.

"Isn't that quiet?" Redmond replied with a smile.



"Brad and West Fargo are pioneers for the Midwest. This is the first electric bus that Blue Bird has delivered outside the state of California. West Fargo said, 'Let's bring it to one of the coldest places in the country – we're going to make it work here."

- Blue Bird's Jim Johnson



WFPS transportation director Brad Redmond answers electric bus questions from the crowd during the inaugural route around West Fargo.

This was the inaugural ride of the school district's Blue Bird Vision Electric, an allelectric bus that will begin delivering students to and from class this fall. The electric bus is the first in the state, made possible for WFPS through a partnership with Cass County Electric Cooperative in conjunction with Minnkota Power Cooperative, the Coalition for a Secure Energy Future and the North Dakota Department of Commerce.

The bus – uniquely numbered e16 in a fleet of 54 – boasts up to 120 miles of range, can recharge on-site in under eight hours and releases zero emissions.

At a ribbon-cutting event on June 3, Redmond joined his project partners in describing the road to bus electrification to a crowd of local leaders, educators, cooperatives, and other interested organizations and community members.

"Each year, our district fleet averages 750,000 miles transporting our students," Redmond said. He explained that the district's \$4 million transportation budget covers purchasing, maintenance and staffing of 62 routes.

Last fall, in an effort to address costs and energy concerns, the school board considered a bid for an electric school bus and ultimately awarded the bid to Hartley's School Buses. "I hope that West Fargo Public Schools Bus e16 will prove to be a beneficial

investment for our North Dakotans," Redmond said.

Cass County Electric president and CEO Marshal Albright thanked WFPS for sharing their vision to bring this project to fruition. "One of the reasons we look at electric vehicles to move forward is really to provide a healthy and safe environment for the students who ride the bus, to increase the awareness of electric vehicles and to look at the performance of large electric utility vehicles like the bus," he said.

"Even a few years ago, the idea of having an all-electric school bus seemed pretty futuristic, but we see today that this isn't the bus of the future. It's the bus of now," said



The difference is in what you won't find under the hood - no transmission, no belts and no standard combustion engine. Fewer moving parts mean fewer dollars spent on tune-ups.

Ben Fladhammer. Minnkota communications manager. "While this is the state's first electric school bus, we're confident it won't be the last."

Luke Hellier of the Coalition for a Secure

Energy Future noted that 14,000 people in North Dakota work in the lignite coal industry and that this kind of technology will help drive demand in the next generation.

"Each time it's plugged in, the electricity that's being consumed is going to help our region's economy," he said.



After cutting the bus's ceremonial ribbon and loading up for a ride around West Fargo, Redmond explained to passengers that WFPS estimates it will spend only 9 cents per mile traveled using electricity. The diesel counterpart costs 40-44 cents per mile to power. The bus can run in temperatures as low as 20 degrees below zero. However, overall costs may shift during the frigid months.

"The heating system in here will draw electricity," Redmond said. "The batteries are heated in the winter and cooled in the summer. That could cause around a 40% reduction in mileage."

The school district anticipates it will save around 70% in energy costs and 70%-80% in maintenance costs, as electric transportation doesn't need regular oil changes, filter replacements or transmission tune-ups.

Cass County Electric member John Bagu and his nine-year-old daughter Mira - who may be an electric bus passenger when she begins third grade this fall - came along for the inaugural cruise. They were wowed by how quiet, powerful and clean the ride was.

"It was very much like our electric car, which is an incredible statement, because our car is so small and this is so big," John said. "The fact that you can take the same technology and put it on a 70-seat bus is incredible."

The WFPS transportation department plans to collect data during the bus's first year on the route and compare costs and efficiency to diesel buses purchased at the same time. If funding allows, the district hopes to add more electric vehicles to the fleet.

"Brad and West Fargo are pioneers for the Midwest," said Blue Bird's Jim Johnson. "This is the first electric bus that Blue Bird has delivered outside the state of California. West Fargo said, 'Let's bring it to one of the coldest places in the country - we're going to make it work here."

By Kaylee Cusack / Photography Kevin Jeffrey



From left to right first row, John Dobie; Kalea Hoff; Alicia Keeling, Frank Bowman, chair of chemical engineering; Briana Bednarek; second row, Ryan Adams, director of the School of EECS; College of Engineering and Mines Dean Hesham El-Rewini; Brendan Kennelly, Minnkota Power Cooperative; Jon DeBeltz; and Abby Aymond.

## Freeman winners named

ardioPost is the winner of the 2019 Andrew Freeman Design Innovation Competition, sponsored by Minnkota as a way to recognize UND's next generation of idea generators.

The winning entry is an innovative solution to improve the cardiovascular assessment process. These cardio-postural impairments can arise from Parkinson's disease, concussions, old age and other diseases.

Team members are Abby Aymond, Jon DeBeltz, Briana Bednarek and Stian Henriksen. They shared the first-place prize of \$2,000.

Placing second was the team of John Dobie, Jake Geritz, Kalea Hoff and Alicia Keeling. They investigated the opportunity of producing glacial-grade acrylic acid (GAA) from a sustainable feedstock instead of propylene, which is a nonrenewable petroleum derivative.

The team shared \$1,000. There

were four teams in the competition.

The Freeman awards were established through a 1996 endowment honoring Andrew "Andy" Freeman, a UND engineering alumnus and former 42-year Minnkota general manager. Although many may not know Freeman by name, Midwest drivers depend on the North Dakota native's most commercially celebrated invention – the electric block heater. Freeman's namesake competition identifies students who embody the visionary's core values of teamwork, innovation and communication.

"Thank you to Minnkota for being very supportive of our program and also for helping us remember one of the innovative people, Andy Freeman," said College of Engineering and Mines Dean Hesham El-Rewini.

By Kevin Fee / Photography Kevin Jeffrey

### Young Station sets mark

n April, the Milton R. Young Station celebrated perhaps the most significant safety milestone in its 48-year history.

On April 18, Minnkota employees at the coal-based facility surpassed one million work hours without a lost-time injury. The streak began in June 2016 and has spanned more than 1,000 days. It is believed to be the first time the facility has ever reached the milestone.

"Thanks to each of you for your contributions to this achievement," Craig Bleth, senior manager of power production, told his team. "I'd also like to commend our employees and safety team for their constant efforts, innovation and sound advice on all things safety."

Young Station employees are taking their opportunity to recognize the accomplishment but, with safety, the job is never done. Bleth said the

plant now sets its sights on another million



work hours with no lost time.

"We need to stay focused, evaluate each job for the risks and continue to be deliberate and intentional in our decision making, whether at work or at home," Bleth said.

Minnkota president and CEO Mac McLennan added, "Congratulations to all the Young Station employees. It is no small feat to reach one million hours without a lost-time injury. It takes everyone at the plant working together, communicating with each other and putting safety first."



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When the cows are looking for extra feed, Mike and Linda's robots get rolling. When the milking process needs to be safe and reliable, they have the technology. When the

They have the passion. They have the purpose. They have the power.

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