

THE RESOURCE

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Minnesota Municipal Utilities Association



Hometown services.
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Hometown solutions.

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MMUA
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ALP Utilities goes underground

ALP Utilities recently authorized a call for bids for their newest electric underground project: a brand-new circuit in the southwest part of town and a circuit tie in the northeast part of town.

ALP's new undergrounding project is part of a larger initiative. "We've been undergrounding since I started here 27 years ago, and we began strategically undergrounding about 10 years ago," said Josh Waldorf, ALP Utilities Electric Distribution Manager. "We still have 8-10 years until our distribution system is completely undergrounded."

How does ALP do their undergrounding strategically? By working with DGR Engineering of Rock Rapids, Iowa, the utility is able to model their distribution system and identify which areas would most benefit from undergrounding.

"At first it was easy," said Josh. "We looked where we were seeing a lot of aging infrastructure, along with identifying where tree trimming was needed to

prevent outages tied to tree damage and squirrels getting in transformers. As our project has proceeded, the decision making has become a little more nuanced."

Supply chain issues are not part of the model but must be taken into account during this time. ALP is focusing on projects that don't require as many transformers, because prices for this equipment have gone up 400% and currently require a one-year lead time. The cost of cable is up 85-100% with a 6-month lead-time.

Growth patterns and future reliability are also taken into account. The model can look at different parts of the city where growth is projected and tracks whether low voltage could be a future problem. In this way, the ALP team can proactively plan their electrical system instead of being reactive.

In the past, ALP has utilized bonding for some of the undergrounding projects, and over the last few years has moved to a "pay as you go" strategy.



"Even with ALP self-funding the cost of the undergrounding projects, ALP has some of the lowest electric rates among municipal utilities and in the state; that is something we are proud of," says Josh.

Alexandria is definitely growing. The city population jumped almost 30% from 2010 to 2020 and will continue to grow.

"We have a pretty broad base of growth: (single family) residential, apartments, industrial, manufacturing and warehousing," says Josh. "We have a nice mix. The lakes

area in Alexandria is a real draw for tourists and for people who want to live here year-round."

As for undergrounding, ALP still has a decade of work in front of them. Projects in the downtown business district are among the plans in the future.

"Our customers like to hear when their power lines are being undergrounded," said Josh. "They get very excited and appreciate the work we consistently do to bring modernization and increased reliability to their power infrastructure, giving our customers what they want and expect."

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Energy and utility issues to be a focus in the 2023 legislative session

by Kent Sulem

MMUA Board has approved priorities for the Association's government relations efforts.

By the time you read this, the 2023 state legislative session will be nearly four weeks old, having convened by statutory mandate at noon on Tuesday, January 3. Unfortunately, but unavoidably, utilities may already be front and center of much of the early activity. This is because legislative leaders and the governor made it clear shortly after the November 2022 elections that major climate legislation was to be expected, making up for what the DFL sees as lost chances the past few years when the then Republican-led senate would block legislation they saw as too aggressive. In fact, a major climate bill will be one of, if not the earliest, bills introduced, and quick action on

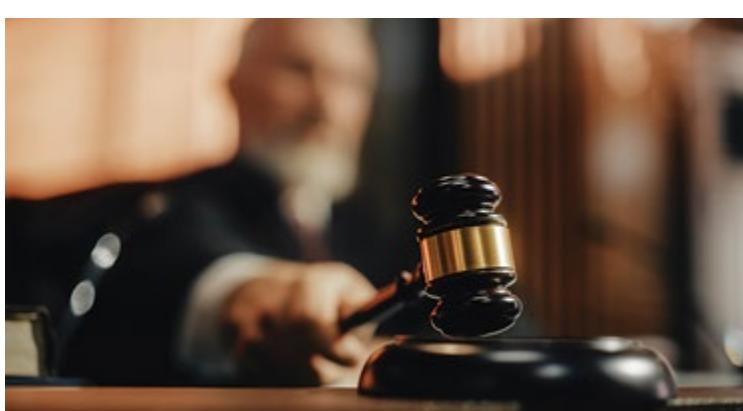
such a bill should be expected.

The primary goal of such legislation under the now DFL-led legislature and their DFL governor is an effort to have all electric utilities produce 100% carbon-free power by 2040. While this effort is not surprising, it does raise numerous questions, the answers to which will determine the impact a 100% requirement might have on a municipal utility. These questions include:

1. What qualifies as "carbon free"?
A widely used definition is any fuel source that does not emit carbon dioxide, including renewable energy sources such as wind and solar. Under Minnesota's current Renewable Energy Standards (RES) Act, renewable sources also include small hydro and biomass, including mixed solid waste burning. However, there are

MMUA seeks to prevent muni sales without referenda

by Bill Black



The Minnesota Public Utilities Commission (PUC) on December 15 approved a change to the state's electric service areas map showing the turnover of the remaining service territory of North Branch Water & Light (NBW&L) to East Central Energy (ECE) rural electric cooperative following a joint request by the two utilities.

MMUA filed comments in the proceeding to inform the commission that North Branch had not held a referendum as state law requires before a municipal utility can cease operation. Unfortunately, the Commission approved the utilities' petition despite MMUA's efforts. Given two minutes to speak on the filing she submitted on the Association's behalf, MMUA

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Transformer school meets in Marshall

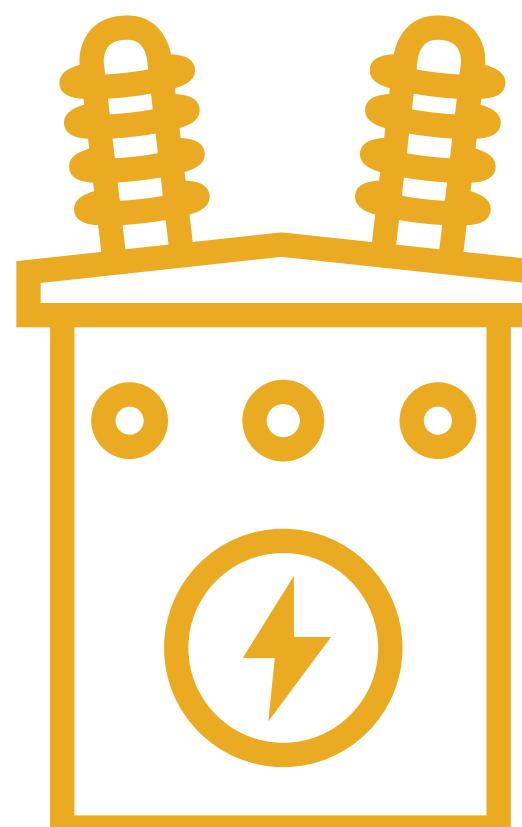
MMUA's transformer school met in Marshall from December 13-16 and taught students important information about transformers. The pre-conference session featured a refresher course on transformers, why we need them, troubleshooting, and other basics.

The main school covered topics including building different types of three-phase transformer banks, the dangers of transformers and appropriate personal protective equipment (PPE), accident scenarios, and transformer troubleshooting.

Thank you to all who presented and attended!



Scott Meinecke with the Iowa Association of Electric Cooperatives instructs the class.



MMUA welcomes Michael Siebenaler as Government Relations Liaison



Mike Siebenaler has joined the MMUA staff as its Government Relations Liaison. He brings more than two decades of legislative experience and outreach to urban and rural communities. Mike has been on the staff of multiple members of Minnesota's congressional delegation and has also been involved with activities at the Minnesota Legislature. He is eager to work with MMUA members troubleshooting legislative and regulatory issues, and he will also be serving as a resource related to grant funding.

Mike is a lifelong Minnesotan, originally from Shakopee. He enjoys cheering for the Minnesota Twins, biking state trails, and being in the outdoors.

Tips for coping with cranky customers

Utilities are pretty much taken for granted here in our neck of the woods... until something goes wrong.

Whether that "something" is an outage that lasts too long, a truck that blocks someone's driveway, a bill that seems too high, or an unpleasant odor from the nearby treatment plant, dealing with unhappy ratepayers is part of running a utility.

Generally speaking, Minnesota hometown utilities do an excellent job of navigating the perils of the unhappy customer.

These folks are our neighbors; we care about them and their concerns. We also know that a misstep can be all over town faster than the news that John Olson is finally going to sell his mint-condition 1971 Chevy Chevelle. It's better to deal with whatever is wrong quickly and compassionately. This keeps things rolling along at the utility, and it reduces the chances that disgruntled ratepayers kick up enough dust to distract from delivering reliable, affordable, and sustainable municipal services.

Grumpiness can be toxic.

When one or more customers are unhappy, we usually assume the utility can weather the storm. Maybe the person is unreasonable and the whole town knows it. Maybe your team made some mistakes, but you are sure people will forget it or get over the incident, considering all the good the utility brings to the town. Besides, what else are they going to do? Buy their utility services somewhere else?

Unfortunately, if the concerns are of a number or magnitude

that they foster a sense that utility is not competent, not responsive to customers, or not otherwise up to the task, it can be extremely harmful. When a blunder affects or is amplified by someone who is an opinion leader, negative community perceptions can swell.

In the short run, a situation like this can just make your job difficult. In the longer run, negative public perception can sway opinion in the wrong direction if you need the community's support for a project, or if a small but vocal minority wants to sell the utility. These situations have to be actively managed, or they can be lethal.

Facing the headwinds.

Utility-related issues never happen in a vacuum. This may be the first time you've had a four-hour outage in 20 years, but people don't react to logic or data points. They react emotionally. How people feel about whatever has them irked is going to be informed by a few things in addition to their own temperaments:

- *In general, do they think the utility is well run and rates are fair?*

- *What is their income level?*

According to the 2022 Edelman Trust Barometer, an annual survey measuring societal indicators of trust, lower-income people are less likely to believe institutions will do what is right for them.

- *What are their politics?* In general, the Edelman survey found that Republicans (35%) are less trusting of institutions than Democrats (55%),

but neither group is giving institutions a rousing endorsement. Utilities are institutions, so the deck is not stacked in your favor.

- *What do they think about the utility's politics?* This is yet another good reason to make sure your utility is perceived as politically neutral. People of both parties tend to be considerably less trusting that "the other team" will make decisions in their best interest. Even in Minnesota's most lopsided districts, between 25% and 33% of the people support the non-dominant party. By staying neutral, you are not giving every third or fourth customer an even bigger reason to assume the worst about your operation.

- *Distrust as the default.* Edelman finds that 59% of people say, "My tendency is to distrust until I see evidence that something is trustworthy." So, assume you must earn trust in every interaction. Getting the benefit of the doubt from your customer is not a foregone conclusion, no matter how awesome your utility is.

Handling public criticism.

A lot of folks will work with you to resolve an issue and go away feeling respected. That's the win. Others will go away angry, but they'll keep it to themselves for the most part. That's not desirable, but if it is a very isolated incident or the person is particularly cantankerous, it may be the best you can do.

Sooner or later, though, someone is going to be unhappy in a public way. What can you

From My Desk to Yours

**Karleen Kos
MMUA CEO**



do about this? A recent article in *Harvard Business Review (HBR)* entitled, "How Leaders Should Handle Public Criticism," offered some tips, and I'll suggest a couple of my own gleaned from unfortunate experience in this arena.

- *Accept that it's part of the job.* No matter how hard you and your staff work, sometimes you'll get it wrong. Having to deal with public responses is part of the territory in utility leadership. You have to address it—appropriately, of course—but don't get stuck on it or spend a lot of time trying to be perfect. Excessive caution and personalizing criticism can make things worse in the long run.

- *Don't use fairness as a gauge to respond.* The HBR article observes, "Remember, the farther people are from the problem, the less context and understanding they have. They will fill in the blanks... with perceived motives for why you did what you did." Perception is reality, but it isn't fact-based.

I started this article by pointing out that people tend to take utilities for granted. It

doesn't matter how long it has been since you had a four-hour outage, or that you fixed it faster than the neighboring IOU or co-op. The customer just cares that that their elderly family member suffered because oxygen was not flowing while the power was out.

Feelings are not fair, but you must respond to them in an empathetic way. As Teddy Roosevelt said, "People don't care how much you know, until they know how much you care."

- *Set the record straight with facts, not emotion.* It is important to show people that you empathize, but getting defensive won't improve the situation. Once you have shown the customer(s) that you, too, would be concerned if something similar happened to you, give them the facts they need to see the circumstances through your eyes. "We are so sorry your dad had to go through that, and we do everything we can to avoid outages. Sometimes, Mother Nature is not in our corner. Our team works as fast as safety allows to get the power back on. In fact, we were the first utility to restore service in the area after the storm. Are you aware of [grant/program/resource] to help your dad get a backup generator for his oxygen? That might make it easier to cope if there is a next time."

- *Be prepared with key messages so you don't over-explain.* Genuineness, humility, and transparency help a lot in difficult situations. Over-talking doesn't. It can complicate understandings, be misinterpreted by the press, and come off as another form of defensiveness.

You know more about what it takes to get the power on than 99% of your customers. They don't care about all the realities you face. With the general public, it is usually best to stick to simple messages like, "We care about our customers," "We are prepared for outages," and "We work according to a prioritized plan that ensures x, y, and z occur here in Metropolis." As the old saying goes, your customers

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University of Minnesota Medical School to begin monitoring RSV and flu in statewide wastewater systems

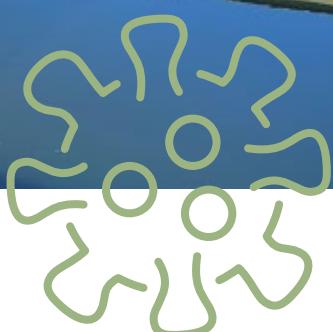


The University of Minnesota Medical School is working to use its statewide network of 44 wastewater plants to not only track COVID but work on tracking levels of RSV and influenza as well.

According to doctors at the school, the testing will be done

from the same sample that is currently used to track COVID levels. Of the three diseases, influenza is the most difficult to detect, so the testing will have to be more sensitive to accurately read flu levels.

As with COVID, tracking all three diseases will allow doctors and public health officials to



detect when disease rates are rising and use that information to inform the public, prepare medical facilities, or make other important public health decisions.

Tom Tylutki retires from Austin Utilities



Tom Tylutki, Austin Utilities' Electric Operations Director, retired on December 30.

He has worked for Austin Utilities (AU) since 1996, when he joined the organization as a Professional Engineer.

Tom has volunteered at MMUA training sessions over the years and has always been an exemplar in making his community, through the utility, a nicer place to live. He helped AU earn the American Public Power Association's (APPA) RP3 Diamond-Level Award, and he worked with summer education programs for children. He has even taught children about pollinators by installing a monarch waystation on AU property. The waystation was installed in 2016 and provides milkweed and wildflowers that help monarchs on their migration.

Tom truly represents the best of what public power can be. MMUA wishes him the very best in retirement.

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Cranky Customers

Continued from page 3

don't need to know how a watch works to tell the time. Save nitty gritty details for audiences that are equipped to understand and interpret them.

- Make sure everyone at the utility knows what to say and who is authorized to say it.

When things are tough, everyone wants to help, and everyone wants answers. Even so, it can get pretty hairy if the press starts quoting Sue the billing clerk on matters of organizational policy—or even if the hot topic at the First Lutheran Church coffee hour is what Sue the billing clerk said in the grocery store yesterday. In fairness to Sue, she needs to know what the key messages are and to whom she can communicate them. Utility leaders need to make clear when, where, and how they will be speaking on behalf of the utility as well. Don't put Sue in an untenable position. Have a communication plan.



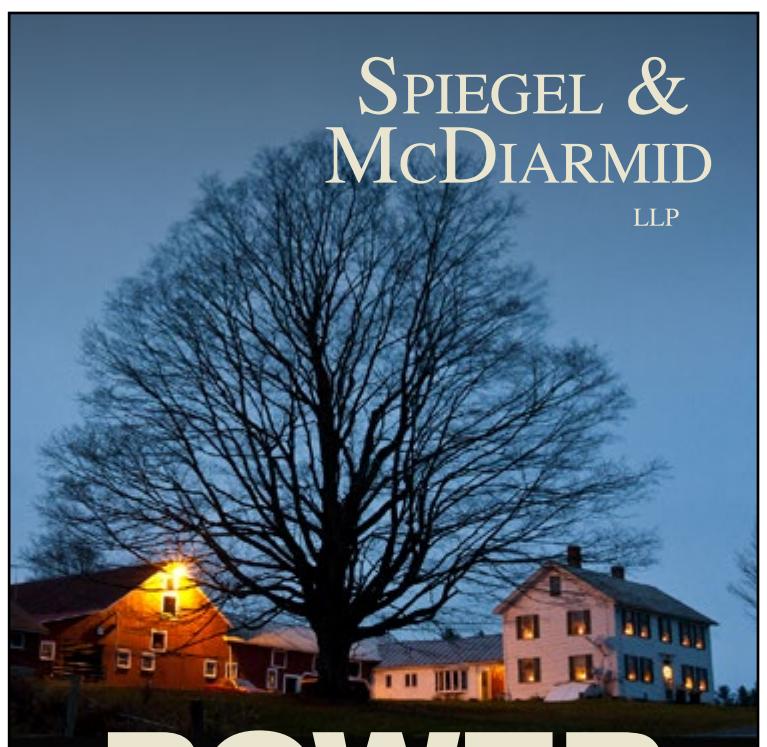
the utility isn't up to snuff, some ratepayers inevitably start thinking someone else should run things. So, it is essential to actively manage your utility's reputation and guard it carefully.

At MMUA, one of our goals is strategic preservation of local control. That goal really has two aspects to it. One, of course, is helping to grow the capacity, competency, and positive reputation needed to ensure your utility is a treasured local asset. The other is to help hometown utility leaders navigate the negative situations—and relationships—that could be a drag on its name.

Don't go it alone. If you face a tough situation, MMUA and its members are here to help. Reach out. We bring hometown services, hometown strengths, and hometown solutions to one another. We have all coped with a cranky customer or two. We are better together.

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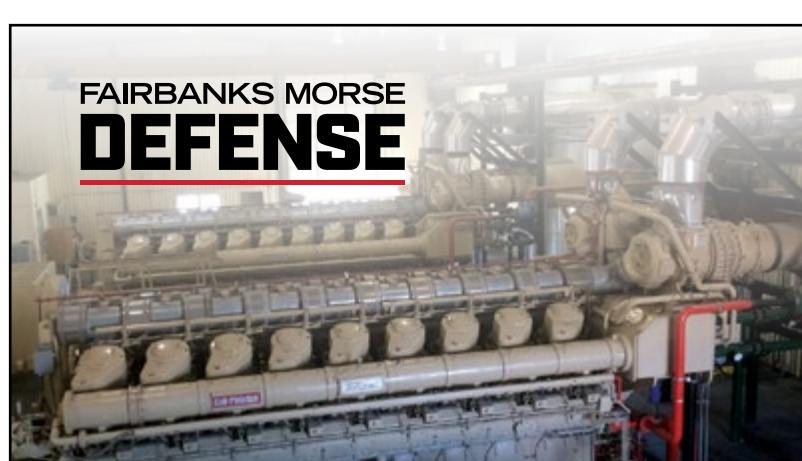
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\$100 million in broadband grants awarded by Border-to-Border Broadband program

From the Minnesota Department of Employment and Economic Development (DEED):

A nearly \$100 million investment will bring better broadband access to 33,000 Minnesotans in 48 counties. DEED Commissioner Steve Grove says, "We estimate that this year between 240,000 and 291,000 households in Minnesota lack access to high-speed broadband internet. That's a lot of people. And for every percentage we get closer to full coverage, it gets a little bit harder because it is tough to get broadband internet access to some of the more rural parts of our state."

Grove says, "Broadband is the plumbing of the 21st century—without it, businesses and households can't participate in today's economy."

The grants are from the Border-to-Border Broadband program administered by the DEED Office of Broadband Development.

Below is a list of grantees by county.

Aitkin, \$1,231,818

- Mille Lacs Energy Cooperative, \$1,231,818

Aitkin, Itasca, St. Louis,

\$3,052,120

- Paul Bunyan Communications, \$3,052,120

Anoka, \$219,727

- Tekstar Communications, Inc. dba Arvig, \$219,727

Beltrami, Kittson, Lake of the Woods, Marshall, \$665,699

- Wikstrom Telephone Co. Inc, \$665,699

Benton, \$1,512,951

- Benton Cooperative Telephone Company, \$1,512,951

Brown, \$3,839,000

- Nuvera Communications, Inc., \$3,839,000

Carlton, \$801,834

- Mediacom Minnesota LLC, \$801,834

Chippewa, \$4,728,186

- Farmers Mutual Telephone Company, \$4,728,186

Chisago, \$465,814

- Qwest Corporation dba CenturyLink QC, \$465,814

Crow Wing, \$343,552

- Tri-Co Technologies, LLC dba Crosslake Communications, \$343,552

Dakota, \$211,826

- JTN Communications, \$113,076
- Spectrum Mid-America, LLC managed by Charter Communications Inc., \$98,750

Douglas, \$1,212,338

- Gardonville Cooperative Telephone Association, \$1,212,338

Faribault, Martin, \$1,444,030

- Blue Earth Valley Telephone Co., dba Bevcomm and Cannon Valley Telecom, Inc., dba Bevcomm, \$1,444,030

Fillmore, \$1,129,740

- Harmony Telephone Company, \$1,129,740

Grant, Stevens, Traverse,

\$2,493,637

- Runestone Telephone Association, \$2,493,637

Hennepin, \$1,941,841

- Comcast Cable Communications LLC, \$1,941,841

Isanti, \$1,647,321

- Midcontinent Communications, \$1,647,321

Kanabec, \$9,403,000

- East Central Energy, \$9,403,000

Kandiyohi, \$4,913,506

- Federated Telephone Cooperative, \$4,913,506

Le Sueur, \$941,576

- Bevcomm, Inc. dba Bevcomm, \$941,576

Marshall, Polk, \$1,462,569

- Garden Valley Technologies, \$1,462,569

McCleod, Meeker, \$1,840,250

- Nuvera Communications, Inc., \$1,840,250

McLeod, \$99,156

- Mediacom Minnesota LLC, \$99,156

Meeker, \$327,516

- Meeker Cooperative Light & Power Assoc. – DBA Vibrant Broadband, \$327,516

Mille Lacs, \$1,594,397

- Benton Cooperative Telephone Company, \$1,118,289
- Savage Communications Inc., \$476,108

Murray, \$1,333,199

- Woodstock Telephone Company, \$1,333,199

Nicollet, \$479,011

- Nuvera Communications, Inc., \$479,011

Olmsted, \$1,620,007

- Kasson & Mantorville

Telephone Company, \$1,620,007

Olmsted, Dodge, \$1,498,115

- Kasson & Mantorville Telephone Company, \$1,498,115

Otter Tail, \$4,522,366

- East Otter Tail Telephone Co. dba Arvig, \$1,140,705
- Otter Tail Telcom, LLC, \$3,381,661

Pine, Kanabec, \$4,750,000

- East Central Energy, \$4,750,000

Pope, \$4,248,796

- Hanson Communications, Inc., \$4,248,796

Redwood, \$2,259,955

- Hanson Communications, Inc., \$923,918
- Redwood County Telephone Co. dba Arvig, \$1,336,037

Saint Louis, \$7,925,723

- Mediacom Minnesota LLC, \$7,363,625
- Savage Communications Inc., \$562,098

Saint Louis, Cass, \$4,857,030

- Consolidated Telephone Company, \$4,857,030

Scott, \$2,436,427

- Nuvera Communications, Inc., \$2,436,427

Sherburne, \$1,075,944

- Tekstar Communications, Inc. dba Arvig, \$1,075,944

Stearns, \$5,721,534

- Albany Mutual Telephone, \$746,964
- Melrose Telephone Co. dba Arvig, \$4,974,570

Steele, \$158,052

- Spectrum Mid-America, LLC managed by Charter



Communications Inc., \$158,052

Washington, \$975,131

- Midcontinent Communications, \$975,131

Wilkin, \$2,157,663

- Red River Rural Telephone Association, \$2,157,663

Winona, \$3,218,201

- Ace Telephone Association, Inc., \$3,218,201

Wright, \$2,832,155

- Spectrum Mid-America, LLC managed by Charter Communications Inc., \$2,832,155

APPA, NRECA submit comments to DOE on continuing supply chain issues

On November 30, the American Public Power Association (APPA), the National Rural Electric Cooperative Association (NRECA), and the Edison Electric Institute (EEI) submitted joint comments to the Department of Energy (DOE) on the continued supply chain issues that have plagued the industry.

The group proposed that DOE focus on using the Defense Production Act (DPA) to produce or procure desperately needed distribution and large power transformers.

The comments came in response to a DOE request for information that asked how the DOE should use its authority under the DPA to begin mitigating continued supply chain issues.

A larger coalition of industry partners requested that \$1 billion be allocated by Congress to fund the DPA so the issues around the transformer supply chain could be addressed. The shortage of transformers has affected industries, including the building and electrical trades, which are also seeking assistance from the federal government.

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EPA proposes rule to phase down the production and consumption of hydrofluorocarbons



The Environmental Protection Agency (EPA) announced on December 9 that it would propose a new rule that would limit and phase down the use of hydrofluorocarbons (HFCs) in the use of air conditioning and refrigeration.

This move is expected to bring about lower carbon emissions, more efficient electrical devices, and consumer cost savings. HFCs are considered negative in two ways: they are a greenhouse gas that is hundreds to thousands of times more potent than carbon

dioxide (CO₂), and they also are used in aging technologies that are not as efficient in their electricity use as modern replacements.

To this point, most of the EPA's projected cost savings from the phaseout of HFCs will come from "improved energy efficiency and lower-cost refrigerants." The EPA estimates the rule will save industry and consumers \$8 billion through 2050.

Other impacted sectors include heat pump systems, foam-blowing applications, and aerosol products.

Carbon direct air capture funding guidelines

On December 13, the Department of Energy (DOE) released new funding guidelines for \$3.5 billion that will go toward the creation of four new regional hubs.

These hubs will lead in the development of direct air capture (DAC) systems that will remove carbon dioxide (CO₂) from the atmosphere.

The new guidelines will offer up to \$1.2 billion for plans that will create a DAC hub capable of capturing at least 1 million metric tons (mt) of CO₂ annually. The DOE is also looking towards the energy transition by requiring that two hubs be located in areas that previously engaged in carbon-based fuel activities, like coal mining.

The first round of funding will require a letter of intent to the DOE by January 24, 2023. The next funding round will occur in 2024 or later.

Undersea transmission line planned between U.S., Puerto Rico

A plan from the company Alternative Transmission, Inc. (ATI) would build an electric transmission line between the east coast of the United States and Puerto Rico in order to provide the island with reliable power.

The project, which is titled "Project Equity," would send 2.1 gigawatts of power from up to two points on the east coast to up to two points in Puerto Rico. At least one high-voltage direct-current cable will run from a substation on the U.S. mainland to a substation in Puerto Rico. The project would cost between \$5-6 billion and be 1,500 miles long.

ATI has asked for a fast-track review of the project from the Federal Energy Regulatory Commission.

Years of underinvestment in the Puerto Rican power grid, natural disasters, and continuing energy supply problems have increased the feasibility of unique projects like this proposal.

CDC widens testing of wastewater for polio

On November 30, the Centers for Disease Control and Prevention (CDC) said they would be expanding their surveillance of wastewater for poliovirus to Philadelphia and Detroit after the virus was detected in New York City-area wastewater this summer.



During this period, a man was paralyzed by the virus, which has not spread in the wild in the United States since 1979.

Although 92% of Americans are vaccinated for polio, the CDC is concerned about areas of the country that may have a link to the New York cases and have low vaccination rates for the virus. By monitoring the areas that are at risk, the CDC will get a better sense of whether or not spread is occurring and monitoring should be expanded further.

Fusion net energy gain achieved for the first time

U.S. government scientists announced on December 13 that for the first time, net energy gain had been achieved in a nuclear fusion reaction.

Net energy gain, where a fusion reaction makes more energy than it consumes, has been a goal of fusion research for decades. Until now, it has never been accomplished.

The net energy gain occurred at Lawrence Livermore National Laboratory in California, where scientists used a technique called inertial confinement fusion to hit a pellet of hydrogen with a group of lasers. Two megajoules (MJ) of energy were fired at the pellet, with the reaction producing about three MJ of energy.

Fusion has been a goal of scientists since the dawn of the Atomic Age in the late 1940s because it can generate nearly unlimited energy safely using tiny amounts of fuel. However, even with this breakthrough, most scientists believe feasible fusion power plants are still decades in the future.

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2023 legislative session

Continued from page 1

advocates that would like to see any 100% standard bill expand this definition to include large hydro, while other advocates would like to see hydro removed completely due to its impact on fish. There are also advocates who want to prohibit solid waste burning, saying it is neither renewable nor clean. And of course, the 800-pound gorilla in the debate is what, if any, role should nuclear energy play? Current law prohibits the Minnesota Public Utilities Commission (MPUC) from considering nuclear power in any Integrated Resource Plan (IRP), but Xcel Energy has previously testified that they need to count nuclear power as 20% of their mix just to get to an 80% carbon-free level. Battery storage is also generally accepted as a form of carbon-free energy, although today's technology

limits their benefit.

2. Would a 100% carbon-free standard apply only to baseload generation, or would it also apply to emergency, intermittent, and peak-time types of generation?

Most municipal utilities deal with distribution directly to the consumer and only generate power in very limited circumstances. When they do need to start up their gas- or diesel-powered generators, it is usually in critical situations. And some municipalities do generate, or plan to generate their own power. A bill introduced during the 2021-22 legislative biennium appears to apply the 100% standard to Joint Action Agencies (JAAs) but not municipal utilities directly. Of course, even these indirect impacts may still warrant MMUA's involvement at the policy level.

3. What, if any, types of "off-ramps" would apply?

Under current law, a utility may seek relief from the MPUC regarding the utility's renewable energy standards, but before granting any relief, the MPUC must find that it is in the public's best interest. Economic impacts on consumers may be part of the MPUC's consideration. However, a bill introduced this past biennium would have required an analysis of the environmental costs of granting the relief. Senator Nick Frentz, who will chair the Senate committee with relevant jurisdiction on energy and utilities, has expressed a willingness to discuss off-ramps, but it is not yet clear what exceptions may or may not be acceptable. One off-ramp could be a waiver for utilities and JAAs that have recently invested the time, effort, and expenses into having an IRP or other similar matter heard and approved by the MPUC using something other than a 100% carbon-free standard by 2040.

4. Is the 100% standard a goal or a mandate?

As an aspirational goal, it would be easier for MMUA and its members to support or at least be neutral on the issue. However, a goal that must be achieved, or that carries penalties for not having been achieved, constitutes a mandate. As a rule, mandates

add costs, and they tend to shift focus to a date rather than the problem to be solved. Periodic progress checks can exacerbate the problem.

MMUA opposes underfunded and unfunded mandates, as well as those that impose undue hardships on municipal utilities. MMUA believes that incentives rather than mandates offer the better path for finding good solutions to complex issues.

MMUA will be encouraging the legislature to quickly pass a bill to authorize matching funds to help maximize the benefits of the 2021 Infrastructure, Investment, and Jobs Act) and the 2022 Inflation Reduction Act. In addition, while 2023 is a budget-setting year for the fiscal years 2024 and 2025, MMUA supports a bonding bill of sufficient value to fund grant programs such as those administered by the Public Facilities Authority for water and wastewater treatment.

Finally, at its December 6, 2022, meeting the MMUA Board of Directors approved a priority ranking of issues that MMUA may try to pass or help pass during the 2023 legislative session. These issues are:

1. Repeal the ban on new nuclear facilities.

2. Clarify that it is acceptable for third parties to install and operate charging stations

within a utility's exclusive service territory, provided they use the electricity from the utility whose service territory the charging stations are to be installed to power the charging station.

3. Seek reclassification of lineworker positions under pay equity laws.

4. Modify CIP and RES requirements imposed on data farms/data mining facilities and similar uses that are already designed to be as efficient.

5. Repeal the salary cap imposed on municipalities.

6. Authorize utilities to provide options on how to provide refund excess generation compensation.

As always, MMUA will track bills of interest to municipal utilities and will maintain a tracking list for members. MMUA will keep members apprised of what is happening in St. Paul by utilizing the Capitol Notes newsletter emailed each Monday, the MMUA Digest emailed each Wednesday, the Resource newsletter published monthly, and the Friday morning Government Relations Advisory Group Zoom meetings, which generally start at 10:00 a.m.

Please direct any questions about legislative efforts to Kent Sulem, Bill Black, or MMUA's new legislative liaison, Mike Siebenaler.

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California EV electricity demand studied



A new study on electric vehicles (EVs) and utility outcomes revealed that electric cars are generally a great thing for utilities: especially if the EVs are charged off-peak.

The study of three large

California utilities by Synapse Energy Economics found that because electric cars generally charge off-peak using existing electrical infrastructure, they can be a real cash cow for utilities.

The three California utilities studied made \$1.7 billion in

profits from electric car charging in the period from 2012-2021. Since some states, like California, return excess profits to customers, electric vehicle use actually helped drive down electricity costs for non-EV users as well.

In the end, EVs help the electric companies better utilize existing infrastructure during periods of lower electricity demand, and they make money as a result. When EV use becomes widespread and charging during peak periods increases, this may be a different story. However, the overwhelming use of off-peak electricity for overnight EV charging is a trend that will likely continue, especially as the penetration of EVs into the automobile marketplace grows.

Maryland reaches \$1 billion mark in Regional Greenhouse Gas Initiative



The Maryland Department of the Environment announced on December 12 that the Regional Greenhouse Gas Initiative (RGGI), a cap-and-invest carbon program, had raised \$1 billion for the State of Maryland in the 14 years the state has participated.

RGGI is a collaboration of 12

eastern states that reduces carbon emissions through regional sales of carbon allowances. The funds are raised through RGGI auctions and then directed into the Strategic Energy Investment Fund, which uses the funds to promote affordable clean energy. One-half of the funds in Maryland are used for energy

assistance and energy efficiency programs.

Other participating states include Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia.

Florida iguana causes large power outage

A wayward iguana in Lake Worth Beach, about 60 miles north of Miami, caused a power outage for approximately 1400 customers when it got into an electrical substation and made contact with a transformer on December 7.

Lake Worth Beach Electric Utility was able to restore power quickly to affected customers, who were mostly in the southeast part of the city's service territory. Power was completely restored by December 8.

Iguanas are non-native to Florida and can cause real problems to a variety of built infrastructure. They can climb trees as well as dig, getting them into places where they don't belong.



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Innovative \$3 billion gas power plant moves forward

Planners of a unique gas power plant that will power nearly 2 million homes and businesses while sequestering almost all of its carbon dioxide underground have chosen a site in Doddridge County, West Virginia. Doddridge County is located in the north-central part of the state.

The plant, which will be called the CPV Shay Energy Center, is being developed by Competitive Power Ventures, and it will produce 1800 megawatts when it opens in the late 2020s. West Virginia lawmakers have already passed legislation relating

to carbon sequestration, allowing the state to move forward on projects in this field.

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China and Saudi Arabia sign agreements on energy and power production

Chinese Leader Xi Jinping met with Saudi Arabian leader Crown Prince Mohammed bin Salman and King Salman bin Abdulaziz Al Saud from December 7 to December 9. On December 8, the visit culminated in a series of written agreements on a variety of topics including energy, refineries, and power production.

The two countries signed a memorandum of understanding (MOU) on their cooperation in the area of petrochemicals within China, so that China can become self-sufficient in this field. An MOU was also signed between Saudi ACWA Power and Chinese partners that will allow for Chinese investment

and assistance in several Saudi-led clean energy projects both within Saudi Arabia and other countries.

The two countries also signed an agreement that will bring the construction of an electric car factory in Saudi Arabia that will produce 100,000 cars a year.

Beyond these agreements, the

two countries reaffirmed their non-interference in each other's internal affairs, and their strong energy ties. Saudi Arabia is the world's top energy producer, while China is the world's top energy consumer. Xi reemphasized that China will be Saudi Arabia's partner in energy for the foreseeable future.

United States and Britain form energy partnership



MIT develops light, ultra-thin solar cell

The Massachusetts Institute of Technology (MIT) announced on December 9 that MIT engineers have developed a new kind of solar cell that weighs 1/100th the weight of conventional solar panels and can create 18 times the power per kilogram.

The cells are printed, and they are so thin that they need a lightweight base to which they can be applied. The team found a composite fabric called Dyneema® that was perfect for this application. The cells can thus be applied in many different scenarios that are not feasible for current solar panels.

The team is now working on



creating lightweight packaging for the composite that will protect it from the elements.

The possibilities look promising

for this new material. MIT says the cells could be wearable, may be used on a variety of surfaces, and even in traditional

applications will make solar installations more efficient.

The United States and British governments announced on December 7 that they would be entering into an energy partnership with the twin goals of exporting more liquefied natural gas (LNG) to the United Kingdom and working on increased energy efficiency.

The effort is called the "UK-US Energy Security and Affordability Partnership," and it will commit the U.S. to exporting 9-10 billion cubic meters (m³) of LNG to the United Kingdom over the next year.

In a statement, British Prime Minister Rishi Sunak said, "The partnership will bring down prices for British consumers and help end Europe's dependence on Russian energy."

An aerial photograph of a large industrial facility for T&R Electric Supply Company Incorporated. The facility consists of several large blue and white buildings and a massive outdoor storage yard filled with rows of electrical equipment. A circular logo for "T&R ELECTRIC" features a red starburst graphic. Text on the logo includes "SUPPLY COMPANY INCORPORATED", "BOX 180", "COLMAN, SOUTH DAKOTA 57017", and "THE TRANSFORMER PEOPLE". To the right, a circular emblem marks the company's "56th ANNIVERSARY" from 1961 to 2017. Text on the right side of the image reads: "TRANSFORMERS DISTRIBUTION AND SUBSTATION", "Modern Rewind Facilities", "More than 61 Acres Inventory", "Prompt Delivery—Coast to Coast", and "BUY — SELL — RENT". Logos for "EASA" (Electrical Apparatus Service Association) and "ELECTRICAL APPARATUS SERVICE ASSOCIATION" are also present. Contact information at the bottom left includes "CALL TOLL-FREE 800-843-7994", "FAX 605-534-3861", "E-Mail: t-r@t-r.com", and "Internet: www.t-r.com". At the bottom right, there is text about "Complete Outdoor Substations, Circuit Breakers, Regulators, and Switchgear".

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T&O Conference teaches, inspires



Opening keynote speaker Bill Carr, an expert on workplace safety, talked about how the safety mindset comes from a place of care for our coworkers and ourselves.



Roundtable discussions covered information in areas ranging from natural gas rules to cyber security trends.



Sergeant Tad Hoeschen of the St. Cloud Police Department spoke on modern tactics for active shooter scenarios as well as deescalating situations with community members.



Attendees enjoyed a poolside lunch on the second day of the conference.



Asia Davis, attorney from the League of Minnesota Cities, gave a presentation on how to successfully manage First Amendment audits.



Dan Holm from nVent spoke about the threat of lightning to electrical infrastructure as well as technologies to address it.



New MMUA Associate Member Trynziec was at the trade show and reception, with Regional Director Jim Murray at their booth.



Attendees enjoyed the trade show and reception, meeting a variety of old and new friends and seeing the latest products and services in the field.



Mike Willetts, MMUA's Director of Training and Safety, spoke about member utilities' deployment to the mutual aid event in Florida.



MMUA CEO Karleen Kos gave attendees a look ahead at MMUA's efforts in 2023.



Attendees learned about MMUA's new tagline and messaging efforts.



Polar explorer John Huston shared his amazing story of skiing to the North Pole with one other explorer, and how the lessons he learned can also be applied to everyday safety and life.

T&O Conference reminds attendees to breathe and pay attention to the details of work and life



At MMUA's Technical and Operations (T&O) Conference, several speakers shared versions of the same idea: the importance of taking a breath and pausing in our busy world.

Often, doing this will end up being safer, saving money, bringing about better results, and improving our health. In the end, it brings more efficiency to many areas of life.

The T&O began the afternoon of December 6 as Mike Willets, Director of Training & Safety, welcomed conference attendees to the Kelly Inn in St. Cloud.

This was followed by a keynote address from safety mindset expert Bill Carr, who described the importance of building a safety culture that reflects deep care for all of our coworkers. By doing this and remembering to breathe (pausing before acting), it is possible to build a safety culture that has 100% safety as our goal.

After a refreshment break, attendees rotated through roundtable discussions with experts from MMUA, member utilities, partners, and vendors. Participants shared knowledge and important information in

areas ranging from government relations to natural gas rules and regulation changes. The end of the first day concluded with a welcome reception and the recognition of new graduates from Northwest Lineman College.

The second day began with a talk from Sgt. Tad Hoeschen, a St. Cloud police officer who is an expert on firearms training as well as public outreach. He focused on active shooter events and how to deescalate situations with the public. For example, a utility worker shutting off power at a home may meet resistance from the residents. Sgt. Hoeschen emphasized being understanding and trying to reflect a customer's concern on a difficult day for them. By breathing during things ranging from an active shooter to a difficult customer interaction, stress hormones are removed from the brain and allow better decisions to be made in more sophisticated brain regions.

After a poolside luncheon, attendees broke into "manager" and "crew leader" tracks for the afternoon presentations. These talks included topics such as protecting substations from lighting strikes with modern methods, thefts that have occurred

from utility installations and how to deal with the aftermath, and understanding First Amendment audits and how to work with them.

The day ended with a trade show and reception, where attendees were able to see and learn about the latest tools and services from a variety of companies.

Day three began with a presentation by Mike Willets and Cody Raveling on the deployment of member utilities, and MMUA staff to help repair electrical infrastructure in Florida after Hurricane Ian. Mike and Karleen Kos, MMUA's CEO, then presented on the future direction of MMUA, including the addition of new programs within the safety department to better serve members.

The closing keynote was given by John Huston, an arctic explorer who was part of the first American expedition to travel unsupported to the North Pole. His expedition was a success, despite several challenges such as interpersonal tensions, hunger, falling in the frigid water, and running out of time. Throughout it all, Mr. Huston emphasized the importance of a safety



mindset, which kept the team safe when other expeditions succumbed to frostbite or failure. This was done by taking the time to pause and go through safety checks that kept the entire expedition moving along.

To succeed at a goal, Mr. Huston also emphasized the importance of four concepts: commit, prepare, believe, and adapt. By doing these four things, his team was able to reach the North Pole safely.

After a final thank you, the conference reached its end and attendees returned home. The T&O Conference this year was compelling because it provided a lot of nuts and bolts to member utilities, the real tools and training they need to succeed. It also provided information to help everyone there think more deeply about safety, how to relate to customers, and how to do better at work and in life. MMUA thanks those who gave their time, resources, and talents to the event. It couldn't be done without everyone.

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Largest solar field installation in Iowa to begin construction

An agreement between Lee County, Iowa, and Alliant Energy of Madison, Wisconsin, will see the state's biggest solar field begin construction in the summer of 2023. The solar installation will be in Wever, near the Mississippi River in southeast Iowa.

The project was first made public in September of 2022.

When completed, the installation will have a capacity of 150-megawatts (MW). By comparison, Iowa had a total grid-connected solar capacity of 137 MW as recently as 2019.

With the solar farm, Alliant is planning to diversify its energy sources. Alliant currently provides power in Iowa and Wisconsin.

Xcel interim rate hike request withdrawn

On December 6, the Minnesota Public Utilities Commission (PUC) approved an Xcel Energy request to withdraw its application for an interim rate increase.

Xcel had originally planned for a rate increase of \$122.1 million, which was decreased to \$68.3 million on November 28.

Several state agencies and consumer groups had previously

noted that approved changes to Xcel's power plant depreciation timelines and energy auction practices would make an interim rate hike unnecessary at this time.

The impact of inflation on consumers was another consideration that made a significant rate hike unpalatable to regulators.

Major bipartisan clean hydrogen bill could further boost industry

A bill introduced by Representative Paul Tonko (D-NY) and Representative Stephanie Bice (R-OK) would create a new national hydrogen innovation center focused on clean hydrogen at the Department of Energy.

The bill, called the Department of Energy Clean Hydrogen and Fuel Cell Research, Development, and Demonstration Act of 2022, would create hydrogen research

and development activities focused on carbon-heavy industries, as well as the improvement of hydrogen fuel cells.

If the bill is passed into law, it would accentuate strong investments in hydrogen that have already been made through the Infrastructure Investment and Jobs Act. That legislation provided \$9.5 billion in clean hydrogen investments.

Trespassers near Minneapolis water treatment plant charged

On December 5, a group of 11 people were arrested by police after entering the sewer system and passing under the Minneapolis water treatment plant and the Burlington Northern Santa Fe (BNSF) railway yard, both of which are considered critical infrastructure.

Officers believe that the group entered the sewer system after an attempted theft in the area. All suspects were charged with



one count of trespassing near critical public service facilities, which is a gross misdemeanor. One person pled guilty and was given one year of probation and a \$388 fine.

FERC/DOE Joint Technical Conference explores needed cybersecurity fixes

A conference held in Washington, D.C., on December 7 hosted by the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE) revealed pressing needs for improvements to cybersecurity within the nation's energy infrastructure.

Richard Glick, FERC Chairman, noted flaws that affect the current regulation of cybersecurity and the prevention of best outcomes. One issue is that regulators currently assess facilities as high, medium, or low impact in rela-

tion to their critical infrastructure protection plans. However, this does not keep bad actors from accessing high-impact facilities through low-impact facilities, putting a dangerous chink in the armor of the overall defensive plan. In order to remedy this, each facility would have to meet a group of standards that would lead to improved protection for all energy entities.

Software bills of materials (SBOMs) were also discussed as an important cybersecurity tool. SBOMs are useful because they support software security claims

for installed software. Currently, the Office of Management and Budget (OMB) has left the procurement/requirement of SBOMs up to different agencies. Many conference attendees voiced their desire that SBOMs be required and also verified by a third party in order to demonstrate that the software is safe and isn't corrupted.

The ideas put forward at the conference will help inform future rulemaking and best practices, as cyber threats show no sign of abating any time soon.



United States, Democratic Republic of the Congo, and Zambia sign agreement on EV battery supply chains

On December 13, United States Secretary of State Antony Blinken, along with Democratic Republic of the Congo (DRC) Vice Prime Minister and Foreign Minister Christophe Lutundula and Zambian Foreign Minister Stanley Kakubo, signed a memorandum of understanding (MOU) that will support the two African countries in development of an electric vehicle (EV) battery supply chain.

Both countries are large producers of the key metals

and minerals that are crucial to modern EV batteries. The DRC produces more than 70% of the world's cobalt, while Zambia is the second-largest producer of cobalt. Zambia is also the world's sixth-largest copper producer.

The MOU will set into motion several actions that will help the two countries develop a supply chain and a value chain, which will allow the DRC and Zambia to add value to the raw materials before they are exported. Government agencies like the

United States Agency for International Development, the Department of Commerce, and the Trade and Development Agency, will help develop strong supply chains. The Export-Import Bank and the Development Finance Corporation will provide financing assistance and expertise for the development of value chains.

U.S. corporate solar capacity doubles in less than three years

A report from the Solar Energy Industries Association revealed that while residential solar continues to grow at a healthy rate, American companies are outpacing them.

In the period from January 2020 to June 2022, American businesses expanded their solar capacity from 9.4 gigawatts (GW) to nearly 19 GW. Twenty-three U.S. companies have installed 100 megawatts (MW) of solar capacity, up from 11 at the end of 2019.

Companies are increasingly finding that solar fits into their corporate goals surrounding carbon output, and that solar is also making more and more economic sense in their operations. Solar panels can now be found across company operations, from headquarters to warehouses and factories.

The report also determined the top five corporate solar users in the United States. Meta (formerly Facebook), Amazon, Apple, Walmart, and Microsoft took the top spots. Minnesota-

based Target and Cargill came in 6th and 7th, respectively.

Total commercial solar installations are expected to double again by 2025, with 27 GW of solar projects scheduled to come online in the next few years.

2X

Economic impacts of Minnesota wind production detailed in new study

A new study from the Center for Rural Affairs illustrates the positive impacts wind production has had on the quality of life and bottom lines of rural counties where wind production has taken place.

The funding that makes this possible comes from wind production tax revenue. The areas chronicled in the study were Murray County, Lincoln County, and Jackson County, all in southwest Minnesota.

Murray County

Murray County has a population of 8,179 and was the top producer of wind energy in Minnesota from 2004-2008. Murray County's wind production grew sharply until about 10 years ago, when it plateaued and has now begun to decline. This is due to older wind turbines that are not dispatched as frequently as newer installations. Because of this, Murray County's wind production tax revenues have dipped from a high of nearly \$1.39 million in 2011 to \$834,414 in 2021.

Murray County has used these wind production tax revenues to improve physical infrastructure. New county buildings have been constructed and internal infrastructure improved in existing ones. The funds have also enabled improvements to the fairgrounds and local broadband expansion.

The report notes local tax relief was another positive result of wind production. Tax revenue has been worth \$2,361 to every citizen of the county since the inception of wind production. Townships where wind production is located have seen even greater savings than average.

Wind production is expected to pick up from its recent nadir with the construction of three new projects. Murray County will see wind production tax revenues grow as it modernizes its wind infrastructure and builds new.

Lincoln County

Lincoln County has a population of 5,641 people and is the current Minnesota wind leader. It has the most turbines, the most production, and the most tax revenue from wind. Lincoln County's wind production has gone up in a straight line, with production rarely if ever decreasing since the beginning of the study in 2003. Lincoln County's wind production in megawatt-hours (MWh) and tax revenues doubled from 2018-2021.

Lincoln County, like Murray County, has used wind revenues to replace and repair county buildings and improve parks. They have also expanded broadband, with the county previously

ranking 84th out of 87 counties for internet access in Minnesota. By 2021, the county was 7th out of 87, and 99% of the county could connect to high-speed internet.

Lincoln County was different than Murray County in that it puts as much as \$850,000 annually towards property tax relief. Until wind generation substantially ramped up in the last few years, this meant that most of the County's realized wind production tax revenues went towards property tax relief.

Lincoln County will see a new project in Buffalo Ridge Wind, but is also seeing curtailment of its wind turbines, which means

a reduction in generation below what the turbines are capable of producing. This factor has dropped MWh and revenues.

Jackson County

Jackson County, Minnesota has a population of 9,989 and was a late arrival to the wind business, with only 160 MWh of wind in production in 2003. Since that time, the county's wind production peaked in 2017, with 1,853,192 MWh of wind production. This figure has since decreased to 1,217,253 MWh in 2021.

Jackson County has taken an even-handed approach to wind revenue windfall, with \$350,000-

\$450,000 being put towards property tax relief each year. Excess revenue goes into a capital improvement fund. These funds have made important projects like the restoration of the historic courthouse and the construction of a new public works campus possible.

Jackson County has also seen curtailment that has negatively impacted its wind income. Its older wind turbines sometimes sit idle while newer turbines are dispatched. Jackson County has some tentative projects in the works that may help turn its curtailment issues around.

The positives for regions in high-wind areas have been

significant. Beyond the rewards reaped by individual landowners, counties have been able to lower their property taxes, invest in physical infrastructure, and make their communities more livable. As wind turbines age and the problem of curtailment rises, the solution lies in grid expansion and storage battery technologies that are on the way. The wholesale refurbishment or replacement of aging wind farms will also play an important role. Minnesota's wind resources will continue to provide an essential piece of the energy puzzle as they adapt to market forces and their own strengths and limitations.

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Continued from page 1

General Counsel Kaela Brennan explained to the commissioners that MMUA's intention was not to interfere with local decision making. Rather, the decision belonged to the people of North Branch, and the map should not be changed until they had their opportunity to make that decision with their votes. The filing also noted that in 2016 the city put a measure on the ballot to disband the utility commission, and it failed.

The PUC, however, agreed with one commissioner's reading of Minnesota Statutes Section 412.321, subdivision 4, that a municipal electric utility can be leased, sold, or discontinued by passage of an ordinance or resolution by the city council, or by approval of two-thirds of electors voting at a general or special election. MMUA argued that the statute requires that such ordinance or resolution must be passed by a city council and must also be approved by two-thirds of electors at an election.

Despite the outcome, Director of Government Relations and Senior Counsel Kent Sulem says MMUA remains firmly committed to the position that a two-thirds majority referendum is required in a situation like this, and he believes further attention to

the law's implementation may be warranted. "Frankly, it's a troubling reading of the statute," he said. "Municipal utilities have always been a special community asset, and the law has required voter assent both to form one and to disband one. In North Branch, the voice of the people has not been heard through referendum, and that is the point we were making to the Commission."

In addition, says Chief Executive Officer Karleen Kos, the Association's Board of Directors will be considering more ways for MMUA to help prevent similar situations in the future. "The Board recently re-affirmed MMUA's solid commitment to supporting every municipal utility so it can provide excellent service and be valued by the community that owns it. That means MMUA will be doing all it can to help communities strengthen their municipal utility operations and gain the support of ratepayers for the ongoing maintenance of these critical public assets. Sometimes, that also means stepping in at the policy level, as we did in this case, to ensure Minnesota's laws protect those publicly owned utilities from short-sighted and irreversible actions. We will be exploring options going forward

to revisit the PUC's recent interpretation of the statute and mitigating the effect of the unfortunate order in the North Branch case."

Commissioner Katie Sieben chaired the hearing in St. Paul where Brennan, Sulem and MMUA Government Relations Attorney Bill Black attended in person. Commissioners Schuerger, Sullivan, and Means participated virtually. Commissioner Tuma was absent. North Branch City Administrator Renae Fry spoke remotely for NBW&L. The attorney used jointly by the city and ECE was not present. ECE President and CEO Justin Jahnz spoke for the cooperative. As of January 3, the Commission's order implementing the 4-0 decision had not yet been posted.

NBW&L began as North Branch Municipal Power in 1940 and receives power from Southern Minnesota Municipal Power Agency. It will continue to own five generators for sales into the market. In 1994, North Branch merged with the larger City of Branch which has been served by ECE and Xcel Energy. The service area transfer affects 2,082 customers, including 1,812 residential customers.

Water main break prompts boil water advisory in North Minneapolis



On the evening of December 5, a severe water main break occurred in North Minneapolis along Third Street North from 26th Avenue to Lowry Avenue, and along Fourth Street North from 26th Avenue to 29th Avenue.

The break flooded the streets with treated water and prompted a boil water advisory in the area. Safe water was also made available to the public at Fairview Park. The main reason for the boil water advisory was that

water pressure fell to such a degree that contaminants may have entered the pipes, which rely on constant pressure.

The boil water advisory was lifted midday on December 7, although water service was still unavailable in areas close to the break.

Officials said the pipe break was caused by the age of the water main, which was installed in 1888, and fluctuations in pressure that exposed weakness in the main.

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Yellow Medicine County could be site of new solar farm



Information provided to the Yellow Medicine County Board of Commissioners in late November said solar company Scout Solar had been making initial inquiries with landowners.

The company has plans to construct a 153-megawatt (MW) solar farm.

According to information presented at the meeting, Scout Solar has already leased about 500 acres of the required 1300-1500 acres. The solar farm would be built in 2028.

Scout Solar is a Tempe, Arizona-based solar and efficiency project company that has designed and developed 24 MW of solar power plants.

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Testing of portable renewable power sources could provide solutions for challenging environments

On November 22, the National Renewable Energy Laboratory (NREL) detailed its efforts over the past four years to find renewable, reliable energy sources for difficult environments like war zones and natural disasters.

The work, done in partnership with Idaho National Laboratory and Sandia National Laboratories, sought the energy sources that would excel in these environments.

The reasoning behind the work was that even though conventional power sources are extremely reliable, they also require a constant source of fuel in unfriendly environments where that might be impossible.

The team also wanted their power source to be readily transportable and relatively simple to install.

Although they are easy to move, solar panels were ruled out quickly because diverse environments do not always offer the steady sunshine needed for reliable power. The team's attention then shifted to wind turbines, which are more reliable but not as easy to move or erect.

Using the military and aid organization's preference for moving things in 20-foot shipping containers, the team designed a wind turbine and tower that would meet these specifications. The 20-kilowatt wind turbine that was developed can fit in a container and even

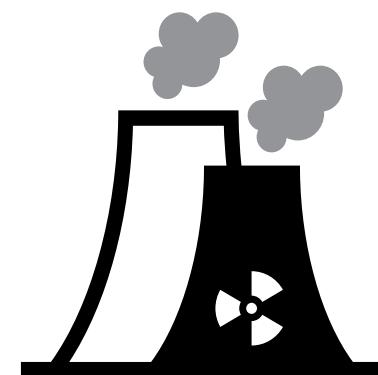
hold a few solar panels for good measure.

Shipping containers are strong, easy to move, and versatile. The team found the container in which the wind turbine is shipped could even function as a foundation or base for the erected structure.

More trials and real-world experiments are yet to come. Portable renewable power could be a real game-changer in an industry that, up until now, has not focused on or achieved much portability.

Japanese government may change nuclear energy policies

A draft proposal presented by the Economy, Trade, and Industry Ministry of the Japanese government on November 28 may signal an important change in the way the government views nuclear energy.



The draft was presented to the Ministry's Subcommittee on Nuclear Energy and said that nuclear power generation is necessary to meet the dual challenges of climate change and power needs.

Japan's previously stated policy was to move away from nuclear power, especially in the aftermath of the 2011 Fukushima Daiichi accident in Japan. The

country, which generated 30% of its power from nuclear power before 2011, had periods in the last ten years when there was no nuclear power generation at all. However, Japan is slowly restarting its nuclear power plants. This policy change may accelerate the process.



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Alexandria Light and Power received an "Honored Institution Award" from the National Oceanic and Atmospheric Administration in recognition of providing precipitation readings for 50 years to the National Weather Service. Dave Thelen, water treatment plant operator, is the current precipitation observer at the plant.



A heavy, wet snow caused significant power outages in **northern Minnesota** in mid-December. Some 35,000 customers were without power on December 16. Outages ran in a line from Brainerd, Mora, and Hinckley towards Grand Rapids and the Arrowhead. By December 18, fewer than 2,000 customers were still without power, mainly in the Arrowhead region.

The City of Faribault promoted their heat tape program, which provides heat tape to families in the community's trailer parks free of charge. Heat tape is a type of cable that, when connected to a power source, can prevent pipes from freezing in the winter.

Fairmont Public Utility Commission recently received a study from engineering firm DGR for a 10-year capital improvement plan.



Mountain Iron-Buhl pulled off a state title win worthy of recent Vikings games. The nine-man team had not won the title since 1972 and faced a difficult 19-0 deficit coming out of the first quarter of the title game against **Spring Grove**. They staged a strong comeback in the remaining quarters and ended up winning the game 28-25 with a perfect, undefeated season.

Olivia will receive more than \$830,000 in federal funds to replace and improve their water and sewage systems. The funds come from the United States Department of Agriculture Water and Waste Disposal Loans and Grants program.

Pierz has a new full-time police officer. Preston Rocheleau was sworn in on November 28 in front of his family, including father Dan, who is an investigative sergeant with the Morrison County Sheriff's Department and once was also a police officer in Pierz.



Rochester Public Utilities (RPU) drew down Silver Lake in early December to make a repair to a hydraulic cylinder on the Silver

Lake Dam. RPU warned local residents to not go out on the exposed lakebed.

Willmar Municipal Utilities began pre-demolition work on the old Willmar Municipal Utilities Power Plant in early December. Asbestos removal will take about three months, after which the building will be demolished.



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Ukrainian President Volodymyr Zelensky asked for millions of high-efficiency light-emitting diode (LED) light bulbs to help the country deal with severe power shortfalls in the country. Many parts of the country only have electricity a few hours a day, and Zelensky said that generators are now as crucial for Ukraine as armored vehicles and bulletproof vests.

Many large energy companies, as well as a Bill Gates-led consortium, are undertaking efforts to measure carbon emissions that may come from emerging hydrogen production technologies. By better accounting for carbon emissions in the clean hydrogen production chain, investment decisions and carbon impacts of various initiatives will be better understood.

A new Israeli-made solar panel will allow agricultural cultivation of the ground below the installed solar panel. It works by using perovskite, which allows the solar cells to be transparent for the part of the light spectrum that drives photosynthesis.

The world's largest tidal power station will be constructed in Ordu, Turkey. The \$150 million power station will produce approximately 77 megawatts of power when it is operational.

Arizona's demand for freshwater is driving the proposed construction of a massive desalination plant in Puerto Penasco, Mexico.

The plant would pipe a million acre-feet (af) of water into Arizona every year.

Efforts from the Washington State Department of Ecology to clean up Puget Sound will require the 58 wastewater plants that currently discharge into the Sound to reduce their nutrient levels. Achieving this goal may require a significant investment.

The United States Postal Service (USPS) plans to modernize its postal fleet over the next few years, spending \$9.6 billion to acquire 66,000 electric vehicles (EVs) by 2028. The USPS will only buy EVs starting in 2026.

Tesla announced on December 19 that the company had completed the installation of 500,000 solar panel and solar roof projects, for a total of 4 gigawatts.

A report in *The New York Times* on December 20 said that in a bid to go green, many large tech companies such as Google are

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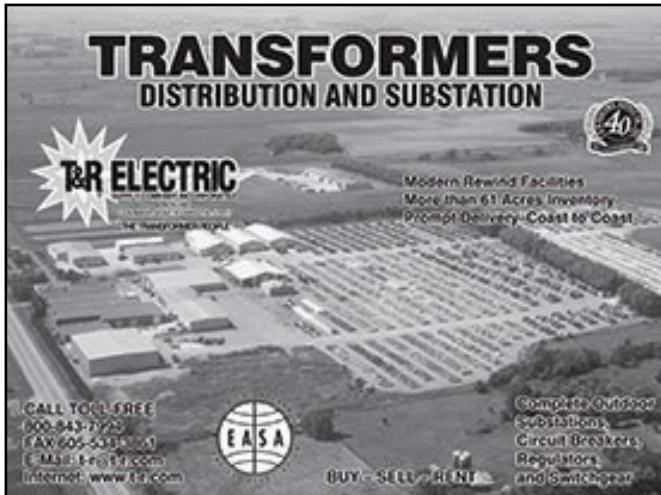
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challenging regulated electrical monopolies and trying to open the marketplace to a wide variety of electricity producers in certain regions of the country.

The American Council for an Energy Efficient Economy (ACEEE) has released its annual rankings of state energy efficiency efforts. California came in first, while Wyoming got last place. Minnesota earned 10th place.

The Houston Chronicle reported on December 20 that the Electricity Reliability Council of Texas (ERCOT) believed the state's power grid would continue to function in spite of the coldest weather that Texas has seen since the 2021 winter weather event that wreaked havoc in the state with long blackouts, high economic costs, and deaths. The Texas power grid held up against the Arctic cold snap over the holiday weekend, though ERCOT significantly underestimated demand for electricity. With temperatures in the teens throughout much of the state, demand for power on the Texas grid topped 74,000 megawatts at about 7:30 a.m. Friday, December 23—surpassing an ERCOT forecast that demand would peak at just under 70,000 megawatts Friday.

The Environmental Protection Agency moved on December 20 to place tighter emissions standards on large vehicles like heavy trucks, delivery vans, and buses. This is the first update to the standards since 2001. The new requirements will start with model year 2027 and will require a 50% cut in nitrogen oxides by 2045.

The opening of an advanced nuclear power plant in Wyoming funded by Bill Gates is delayed two years because the only company that makes fuel in the amounts needed for operation is located in Russia. The fuel, called sodium, is highly enriched compared to typical uranium-235.

In an effort to win broadband money from the federal government, citizens from northern Michigan are working to challenge and update Federal Communications Commission maps that show areas of the state as "covered" by broadband when in reality they are not.

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³ www.bls.gov/oes/2017/may/oes472152.htm



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Justice Department takes steps to address Jackson, Mississippi water crisis

The United States Department of Justice (DOJ) made several moves on November 29 to begin the process of remaking the City of Jackson's water system after years of disinvestment.

These problems led to a crisis in the summer of 2021, when flooding of the Pearl River caused the main water treatment facility's pumps to fail. Some 150,000 residents were left without water from August 29 to September 6, and boil water notices were in place most of the summer due to problems that predated the flooding.

The DOJ's first move was the filing of a lawsuit against Jackson, which sought a court order for corrective measures to protect

residents, and for the City's water to comply with national and state water rules.

The DOJ's second move was to propose the appointment of a third-party manager to oversee Jackson's water system. This person would take on the responsibility of supervising the operation and management of the drinking water system, implementing capital improvements to the water system, and repair of continuing issues with the water system that are a threat to public health.

Jackson's City Council signed an agreement with the federal government on November 17 regarding the repair of its water system.

Wind turbines could help carbon reduction efforts in multiple ways

On November 21, a team of researchers from Purdue University presented simulations and a wind tunnel test showing that wind turbines may be able to collect and funnel carbon dioxide (CO₂) rich air to be collected at ground level.

Carbon-capture systems like direct air capture (DAC) can collect CO₂ directly from the air, but scientists say that CO₂ concentrations are often too low at ground level for this technology to be effective there. That is where wind turbines come in.

Using fluid dynamics, the wake and stream of airflow produced by turbines can redirect CO₂-rich air to ground level, where it can be collected.

This idea could allow carbon capture through DAC to be realistic where it previously was not. Researchers plan on further exploring the ways wind turbines can redirect air and what this could mean for carbon capture.

New EIA report sees U.S. renewables surpassing coal in 2022

A new report from the United States Energy Information Administration (EIA) sees renewables surpassing coal, while natural gas use remained steady at the conclusion of 2022.

Coal made up 20% of the

United States' energy mix at the end of 2022 and 19% in 2023. Renewables, meanwhile, having made 22% of the energy mix at year end, and 24% in 2023.

However, natural gas is still king, with the fuel having made

up 38% of the energy mix. This is expected to drop to 36% in 2023.

The growth in renewables is being driven by lower prices and government investments through the Inflation Reduction Act and other legislation.

World's first hydrogen-powered jet engine undergoes successful test

Rolls-Royce, the company renowned for their airplane engines for decades, has completed the first successful test of a jet engine that runs on hydrogen.

The November 28 announcement shared that the test occurred at the United Kingdom's (UK) Ministry of Defence Boscombe Down site in Amesbury, Wiltshire, in the southwest of England. The green hydrogen for the test came from wind and tidal power in the region.

A converted Rolls-Royce AE 210 made up the testbed. Rolls-Royce has partnered with easyJet, a UK-based low-cost airline,



in order to explore the feasibility of installing these engines long-term on easyJet airliners.

More tests, including future flight tests, are in the planning stages.

2.2 million gallons of treated wastewater discharged into Puhi Bay near Hilo, Hawaii

On November 23, a broken air feed line caused a discharge of 2.2 million gallons of wastewater from the Hilo Wastewater Treatment Plant into Puhi Bay outside of Hilo on the Big Island of Hawaii.

The event began in the afternoon on the 23rd and did not end until the morning of the 24th.

The water had been disinfected but discharge was still being monitored. The public was

advised to stay out of the water until testing was completed.

The Hilo Wastewater Treatment Plant has had longstanding issues that have led to calls for the full replacement of the facility.

Upcoming Events

For more information, see the Events Calendar at www.mmua.org or call MMUA at 763-551-1230.

Meter School and Pre-Conference

February 7-10
MMUA Training Center
Marshall

Meter school is an opportunity to obtain hands-on technical electric metering training. Basic/intermediate and advanced tracks are available. A pre-conference workshop is also held in conjunction with the school. Register online at mmua.org/meter-2023.

NESC® Regional Workshops

January 31-February 16
Multiple Locations

MMUA is holding five one-day seminars around the state to discuss changes to the 2023 edition of the National Electric Safety Code (NESC®). Learn about small cell and communication equipment placement and more. For more information, please see the events calendar at www.mmua.org.

Emergency Preparedness and Restoration Conference

February 22-23
Holiday Inn
St. Cloud

Join other hometown utility and city professionals at this interactive conference. Increase your understanding of the mutual aid process and strengthen relationships with fellow industry professionals. Register by February 1 at mmua.org/event/emergency-2023.

Electrical Skills Training for Water/Wastewater Operators

March 14-15
MMUA Training Center
Marshall

This course is offered as supplemental training for water/wastewater operators and support staff. This comprehensive electrical training program can benefit non-electricians to improve skills and gain competency. Learn more by visiting www.mmua.org/event/electric-skills-w-ww-2023. Register by February 10 for the best rate; the final deadline is February 21.

Substation School

April 4-6
Arrowwood Lodge at Brainerd Lakes
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This school can benefit anyone who works in a substation environment or those interested in learning more. In addition to classroom instruction on a variety of substation-related topics, participants will also go behind the scenes and tour two Brainerd Public Utilities facilities. Learn more by visiting mmua.org/event/substation-2023. Register by March 3 for best rate.

Leadership Enrichment Programs

MMUA offers two popular and well-regarded leadership enrichment programs: Leadership Academy and Stepping into Leadership. Both programs will begin new cohorts in April 2023. Please check mmua.org/events/schools or reach out to Rita Kelly at r.kelly@mmua.org for more information.