

THE RESOURCE

Official Publication of the
Minnesota Municipal Utilities Association



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April 2023
Volume 28, No. 4

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Municipal hydro continues a proud tradition for Minnesota utilities

Long before renewable energy was cool, Minnesota's municipal utilities were using hydropower to bring electricity to the homes and businesses they serve.

Hydro was one of the first sources of energy used for electricity generation in the U.S., and until 2019 it remained the largest source of total annual renewable energy in the U.S. In 2021, data from the Energy Information Administration showed hydro providing about 6.3 percent of total U.S. utility-scale electricity generation and 31.5 percent of total utility-scale renewable electricity generation. Today, Minnesota boasts 35 total powered dams which deliver 679,000 megawatt hours (MWh) of energy annually, roughly one percent of Minnesota's total energy and four percent of its total renewable energy. These dams are operated by private companies, investor-owned utilities, and municipal utilities, among others.



Conference attendees explored the Brainerd dam during the recent substation school.

A few months ago, *The Resource* explored the story of the Thief River Falls hydro operation in northwest Minnesota. Here is a look at Minnesota's other municipally owned hydro operations.

Brainerd Public Utilities (BPU) operates a hydropower dam that was purchased from Wausau Paper in 2014. The purchase price was \$2.6 million, which included 37 acres of land. Equipment

upgrades were carried out at that time to prepare the hydro dam for utility service. Trent Hawkinson, Operations Manager at BPU, says the dam puts out about 2.4 megawatts

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Municipal utilities see a lot of bang for their lobbying bucks

By Bill Black

In 2022, Minnesota's electric utilities spent about \$4.3 million trying to influence governmental action at the state level, according to a report of filings with the Minnesota Campaign Finance and Public Disclosure Board issued in March.

Of the \$4.3 million spent lobbying on behalf of the industry, the investor-owned utilities (IOUs) sector spent the vast majority, roughly 72 percent or just over \$3.1 million. That includes \$1.96 million related only to influencing action by the Minnesota Public Utilities Commission (MPUC), where municipals and co-ops contend rarely. Together, municipals and co-ops spent only \$113,000 on lobbying activities directed at the MPUC in 2022.



The IOUs spent \$1,184,526 directed at legislative activity, and cooperative groups spent just under \$563,000. Meanwhile, municipal groups spent a little under \$525,000 last year. Interestingly, Minnesota electric co-ops served 861,777 customers in 2020 compared with 391,192 electric customers served by municipal utilities and 1,524,251 served by IOUs.

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Legislature takes a break before entering the homestretch

By Kent Sulem

The Minnesota Legislature scheduled its annual spring break to begin at 5:00 p.m. on Tuesday, April 4.

Except for those few committees that had not wrapped up their omnibus bills, the recess unofficially began a little early.

Since both the House and Senate energy/utility committees had passed their omnibus policy and finance bills on to the House Ways and Means Committee and the Senate Finance Committee, MMUA staff expected to spend Monday, April 3 watching the Senate floor debate on SF 1622/HF 1656. This measure is expected to provide matching funds for the Infrastructure Investment and Jobs Act (IIJA), but the bill was pulled from the agenda without a stated reason. A new date for final passage was not made public, although at the time it seemed likely the bill

would be rescheduled soon after the legislative session reconvenes at noon on April 11.

Going into the break, the MMUA government relations team felt positive about where legislation impacting municipal utilities stood. The Senate Omnibus Policy Bill, SF2542, contains a provision requiring any electric utility to supply, at a customer's request and within 10 days of receiving the request, data on that customer's electricity usage. Considering a municipality's existing obligations under the Data Practices Act, MMUA has not received any objection to this provision. Another section of the bill expands the definition of "low-income household" as it applies to a utility's obligation to provide conservation programs to low-income households. In general, the bill is written to focus most of its requirements on particular areas of the state

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MMUA The Resource USPS #009836. ISSN: 1080-3750 is published monthly; except combined July/August, by MMUA at 3131 Fernbrook Lane North, Suite 200, Plymouth, MN 55447-5337. Periodicals postage paid at St. Paul, MN. POSTMASTER: Send address changes to MMUA The Resource, 3131 Fernbrook Lane North, Suite 200, Plymouth, MN 55447-5337. Annual subscription rates: \$12 per subscription (included in dues), associate members, \$12 (included in dues). 3131 Fernbrook Lane North, Suite 200, Plymouth, MN 55447-5337. Phone 763-551-1230, (Minnesota only) 1-800-422-0119. FAX 763-551-0459.

State matching funds for IJA and IRA grants



The MMUA government relations team was on hand at a press conference promoting passage of a bill to provide state matching funds for grants available under the Infrastructure, Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA). Senator Nick Frentz (DFL-Mankato) speaks as MMUA staffers Kent Sulem (back row, second from right), Mike Siebenaler (front row, second from right), and other utility advocates look on.

Municipal utilities

Continued from page 1

	Electric Customers	Proportion	2022 Total Expenditures	Proportion
IOUs	1,524,251	55%	\$3,100,752	72%
Co-ops	861,777	31%	\$615,667	14%
Municipals	391,192	14%	\$584,469	14%
Total	2,777,220	100%	\$4,300,888	100%

While organizations may use terms including “government relations,” “government affairs,” “public policy,” and “advocacy,” among others, to describe their work aimed at influencing lawmakers, the public knows all these activities by the shorthand term “lobbying.” In Minnesota, lobbyists are required to register with the state, and expenditures related to influencing governmental action must be reported. In this context, governmental action is defined as: “1) actions by the state legislature and by the governor in his or her role in the legislative process; 2) actions by state agencies, including boards and commissions, in rulemaking, rate setting, power plant and power line siting, and granting some certificates of need; and 3) official actions by metropolitan governmental units.”

Groups that either hire lobbyists or spend \$50,000 or more in a year toward such influencing activities must report their totals annually for the following: 1) all payments to lobbyists; 2) all spending for advertising, mailing, research, analysis, compilation and dissemination of information, and public relations campaigns; and 3) all salaries and administrative expenses attributable to the principal’s lobbying activities. The Board posts the reported

information on its website, so the public knows who is spending money on these efforts and how much they are spending.

Despite a press exaggeration about “more than a hundred” utility lobbyists at the state capitol that was unfortunately repeated acrimoniously in recent committee testimony, utilities are far from the only entities working to influence the state legislature and state agencies. The Campaign Board lists \$440,000 in total 2022 spending by Sierra Club North Star Chapter, \$360,000 by MN Center for Environmental Advocacy, and just under \$200,000 by Fresh Energy. The six lobbying groups with “renewable” in their names together spent \$429,000 in 2022. The number of groups with “solar” in their names has grown to seven, with combined spending of \$420,450. Those with “wind” or “NextEra” also spent a combined \$341,000.

The figures above do not include group contributions to political campaigns or parties or for political advertisements. Only political action funds or political action committees can make those types of expenditures, and they are reported separately.

Although political spending does not match up directly to utilities or groups, a small sample of yearly contribution

levels reveals a bit more of the financial picture. Xcel Energy Employee Political Action Committee contributed \$38,024 and \$37,300 to state candidates and party units in 2021 and 2022 respectively. The Rural Electric Political Action Committee contributed \$44,500 and \$30,250 in those years. In contrast, the Municipal Utilities Action Fund contributed \$1,650 and \$2,200. These political gifts must be collected from personal donations and cannot contain corporate funds.

A portion of each MMUA member’s dues funds MMUA’s government relations efforts. These funds pay for personnel, office space in St. Paul, and related expenses, which are reflected in the Board’s figures released in March. Each week during the legislative session, the MMUA team reports on its advocacy activities both in a meeting of members and in writing. We also provide summary articles in *The Resource* on a monthly basis (see the front page for this month’s coverage), and we provide a recap at each annual meeting. Members are invited to contact Kent Sulem, Director of Government Relations and Senior Counsel, to share their issues and concerns.

What solving a math problem can teach us about **workforce development**

Did you see the recent news about two high school girls in Louisiana?

While motoring through their senior year, probably doing a lot of things average people their age do, the pair also accomplished something that has vexed mathematicians for at least 2,000 years. Undaunted that proving the Pythagorean theorem had been accepted for millennia as an “impossible” task, they took a different approach and solved it. Kids these days!

The story got me thinking even more than I usually do about the workforce issues Minnesota’s utilities are facing. Especially in outstate areas, attracting and retaining a competent cohort of employees is not easy. Some would say it is getting close to “impossible.” One of MMUA’s larger members has been searching for an engineer for more than a year. Another asked MMUA for help finding a general manager in mid-2022, and for a variety of reasons, the position is still vacant. Difficulty retaining lineworkers was one of the decision drivers mentioned when another muni sold earlier this year.

It’s not as though the people with the skills we need are just hanging out at the pool hall and refusing to work either. As I noted in this column in May 2022, since I was in junior high school, social studies teachers and demographers have been predicting an overall labor shortage because of Baby Boomer retirements. (Mr. Nistler, you were right about so many things!)

What was not foretold was the specific impact these shortages would have on rural areas in

general and utilities in particular. Yet, here we are. In 2019 during a special session, the Minnesota Legislature acknowledged the issue and directed the Minnesota Public Utilities Commission (MPUC) to convene a stakeholder group to “examine the challenges and opportunities for Minnesota’s energy utilities to attract a diverse workforce with the skills needed ...”

In 2020, the Energy Utility Diversity Group (EUDG)—which included MMUA members and staff, among dozens of others—issued its report. It said, in a nutshell, that *workers from diverse communities will be needed to bolster the utilities workforce.* However, we can’t just keep doing what we have been doing to find them, train them, and retain them. Those tactics are not going to work anymore.

We need to think bigger. We need to think creatively. It’s not impossible, but we need to find a bit of the mojo those math students used with the Pythagorean theorem to solve this challenge!

First things first: the laws of supply and demand favor the worker. In the early 1960s, my grandparents nearly had to be resuscitated when my 20-year-old uncle quit a good cradle-to-grave job in Albert Lea because he didn’t like it. For survivors of the Great Depression like them, the goal was to get and hang onto a position that paid the bills and offered security. Period. Whether you liked it was immaterial.

Many of us in municipal utilities were brought up by people like my grandparents. At a minimum, we started out at a time when—generally speaking—the employer had all the power, called

all the shots, and the worker needed to put up or pack up.

Things have changed. The laws of supply and demand have shifted things in favor of the wage earner, and workers under age 50 or so are often wired differently. They still want to make a good living, and a great many would love the life in outstate Minnesota if they could earn it there. The difference is that they expect the employer to behave as a partner and problem-solver, not a master.

Diversity is our friend—and it’s a bigger concept than many people think. The word “diversity” tends to evoke all sorts of ideas, so we should be clear on what we mean here. Of course, it *could* mean racial and ethnic diversity, which is what is most often conjured up when the term is mentioned, and that isn’t wrong. It’s just too narrow, even though the EUDG report was referring to that type of diversity in its report.

I would suggest that diversity is going to have to mean much more than that in the near term for municipal utilities. Increasing racial and ethnic diversity in outstate areas will take decades to accomplish, even under the best conditions. We need workers now.

In the short run, we must look to the diversity that is already in our communities and to workers more easily persuaded to make a move—vocationally, if not physically—if we want to fill our staff rosters. So, I encourage you to think of workforce diversity as “considering any worker that would not be an obvious choice” as you think of your current employee cohort.

For the employer willing to adjust, here are groups that

From My Desk to Yours

Karleen Kos
MMUA CEO



may already be in or near your community that could be cultivated for your future employment needs.

- *Women* make up half the population, but they are woefully underrepresented in utilities. What can we do to encourage them to become lineworkers, mechanics, safety personnel, and engineers? How can we train them on the job? How must we adjust the positions and work within our towns so childcare issues are addressed?
- *Less experienced workers* are sometimes overlooked because they don’t have the qualifications we need. Can we partner with schools or another utility to ensure they have the supervision and support they need? If you can’t find an engineer with 10 years’ experience, ask yourself what kind of support would be needed for a first-year engineer to take that role.
- *Career switchers* can be gold in rural areas. If a hard-working dairy farmer sells out, that work ethic would transfer nicely to utilities. The person who manages the mini mart might make a great customer service representative. How can we



recruit and train people who already live in our area and want a better life?

- *“Different” learners* with conditions like dyslexia, attention deficit disorder, or challenges with math and reading can be excellent workers and great with learning things hands-on at work. Of course, we can’t just throw a harness on anybody and send them up a pole, but challenge yourself to think about how your current positions could be redesigned so people with necessary credentials are doing things that require expertise, and people who are learning or less skilled support them. Hint: think about how the medical profession has adjusted care standards to accommodate the nursing shortage. Today we get by with fewer registered nurses because we have many more nursing assistants. What would that look like in the utility world?
- *Retirees* don’t always want to be completely retired. My father is 83 and he has had a part time job delivering parts for an auto dealer for years. How can guys like my dad fill out your snow plowing, lawn mowing, or customer service roster? What adjustments can you make to offer part-time positions that are attractive to these older workers? In the case of my dad, three different retirees shared the equivalent of one full time job. They each worked around 12 hours a week, and the solution worked for everyone.

It isn’t going to be simple, and nobody can solve the workforce issue alone. Not all the ideas I’ve mentioned will work in your town. Maybe none of them will. We have to keep at it, creatively, and the answers will come.

Solving the workforce issue won’t be like finding a proof for the Pythagorean Theorem, but it will require that same fresh thinking.

In the meantime, MMUA looks forward to working with you and other stakeholders on this challenge. Watch for an announcement about a workforce development task force we will be forming in the coming months.

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New material allows electricity to be transmitted without resistance

In a materials science breakthrough, a team of researchers at the University of Rochester (New York) have developed a superconductor called nitrogen-doped lutetium hydride.

The hydride maintains superconducting properties at room

temperature and only slightly higher than atmospheric pressure.

This material is able to transmit electricity without resistance and have magnetic fields passed around it. This means that for the first time, transmission lines could be built that would not lose power to resistance.

The material could also be used to make electronics more efficient and magnets that would accelerate the development of fusion power. The ability to transmit electricity without friction will have many applications that scientists are only beginning to understand.

Grand Marais receives bid and plan for wastewater plant modernization

On March 1, the Grand Marais City Council reviewed a plan from Advanced Engineering and Environmental Services (AE2S) on their proposed upgrades to the city's wastewater treatment plant.

The plant was constructed in 1972 and upgraded in 1988. Although Grand Marais proper has not grown since the 1970s, the city's wastewater plant has aged, and several technologies needed in the plant have been improved in the past 35 years.

AE2S found several parts of



the plant that needed repair or more examination, including the oxidation ditch, final clarifiers, service building, and generator building. Several technologies in the plant could also be replaced or upgraded based on the service life of the components.

AE2S' recommended plan of

action would consist of treatment improvements, equipment upgrades, solids handling improvements, an odor control system, structural rehabilitation, and ancillary improvements including new piping, valves, and water supply infrastructure.

The cost of the modernization project is estimated at \$8,954,000. Grand Marais intends to carefully consider the project and work toward a resolution on the recommendations in the report. If approved, the new plant could be completed by 2024 or 2025.

EIA reports 2023's new power capacity will be at least 82 percent renewable

A report from the U.S. Energy Information Administration (EIA) notes that of new generation scheduled to come online in the U.S. in 2023, 82 percent will consist of wind, batteries, or solar.

Most of the remainder consists of new natural gas and nuclear installations.

Solar will make up approximately 50 percent of the total, with wind and battery storage making up 14.5 percent and 17 percent, respectively. The report notes that this will be the first time ever that solar makes up more than 50 percent of new scheduled generation capacity in a year.

Overlooked water flows ripe for hydropower energy use

Research in the U.S. and abroad has found that anywhere water flows, including wastewater and water plants, canals, pipelines, and irrigation canals, an overlooked and exploitable form of hydropower energy is currently untapped.

In many applications, water or liquid flow is reduced with valves or other methods when

that energy could instead be used to generate electricity.

Scientists plan to do more research, so that the most efficient and highest yield water flow locations can be identified and shared with operators of these systems. These discoveries could create new synergies for utilities that operate water/wastewater facilities as well as electrical systems.

Nevada pumped storage project applies for final licensing approval

In February, the White Pine Pumped Storage Project submitted its final license application to the Federal Energy Regulatory Commission.

The project is a 1,000-megawatt energy storage facility located in White Pine County, Nevada northeast of Ely. The project, when completed, will be one of the largest pumped storage facilities developed in many years.

White Pine Pumped Storage will consist of a large upper reservoir and lower reservoir with 2,200 feet of elevation between them. When the facility is in generation mode, water will flow from the upper reservoir to the lower reservoir, generating electricity. When it is in pump mode, surplus electricity from the grid will be used to pump water from the lower reservoir to the upper reservoir for use later. The project will also include new roads and a 25-mile transmission line.

When finished, the project will be able to meet about 13 percent of Nevada's peak power demand. This will take pressure off virtual power plants and gas peaker plants. If everything proceeds on schedule, construction could begin in 2025, with the facility ready to open between 2030 and 2032.

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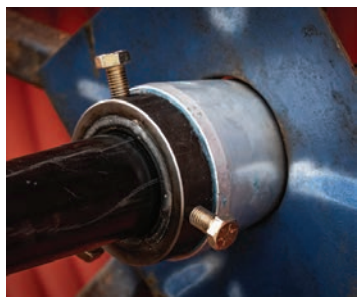


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Austin Utilities Announces Retirements and Advancements

From Austin Utilities:
AUSTIN, Minn. March 14th, 2023

Austin Utilities today announced the retirement of Butch Goergen, Information Systems Manager with 30 years of service effective May 3, 2023. "Thank you to Butch for his long-term career at Austin Utilities. We greatly appreciate his leadership to better serve our community. We wish him the best in his retirement," said Mark Nibaur, General Manager at Austin Utilities. Butch began his career with Austin Utilities in 1993, the year the internet became free and open to everyone. He started as a computer programmer but was soon the department manager.

During his career Butch brought technology to the utility by establishing the Austin Utilities domain and building the network. He also oversaw the installation of a fiber network



Butch Goergen



Marc Oleson

system that would monitor all equipment and sites from one location. More recently he had

focused his time on keeping AU safe from ever increasing cyber security threats. During his retirement he hopes to travel the world.

As a result of Butch's retirement, Austin Utilities welcomes Marc Oleson as the new Information Technology Director. "We welcome Marc to the AU team and look forward to his guidance in the rapidly changing world of technology," said Nibaur.

Marc's background includes over 30 years of IT experience across multiple industries. He is a graduate of Northwest Iowa Technical College and is completing a B.S. in Computer Information Systems from Dakota State University, Madison. His most recent experience was as an IT Systems Engineer at Cambridge Technologies in Worthington, MN. Outside of work, Marc's interests include hiking, camping, and Kansas City BBQ Society Judging.

U.S. Senate discusses energy impacts of cryptocurrency mining

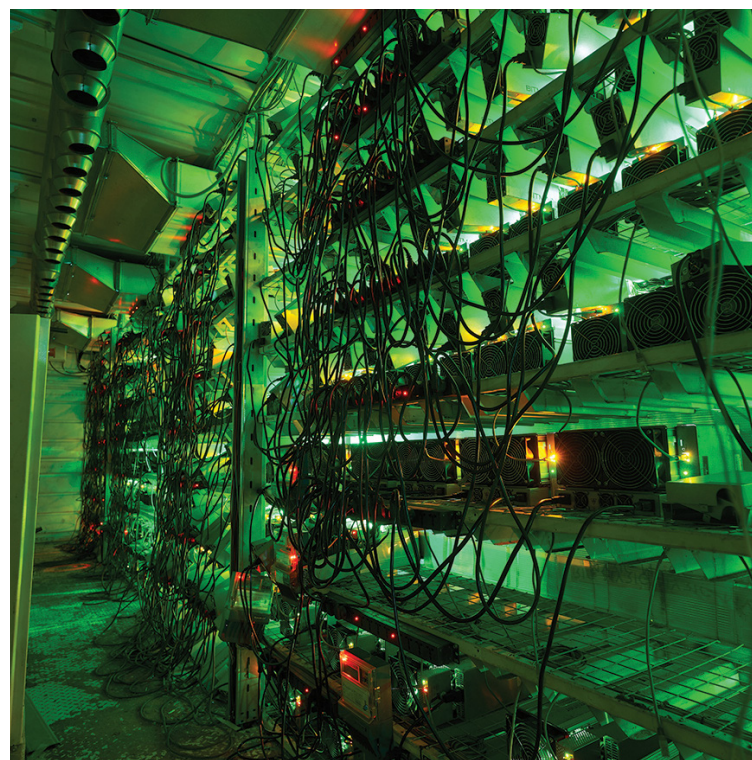
On March 7, the Senate Committee on Environment and Public Works, within its subcommittee on Clean Air, Climate, and Nuclear Safety, held a hearing on the effects of cryptocurrency mining on American energy use, as well as its influence on carbon emissions in the U.S.

Discussions within the subcommittee explored some of the unusual examples of cryptocurrency mining, such as using 30 natural gas generators and waste coal to power mining operations in Pennsylvania. Nebraska has also become a hot

spot for crypto mining due to its attractive electricity prices.

Senator Ed Markey of Massachusetts has introduced a bill that would require cryptocurrency miners to disclose their emissions to the Environmental Protection Agency (EPA) as well have the EPA study the energy usage of crypto miners.

The Senate's cryptomining concerns stem from a combination of factors, including emissions and energy consumption, an issue that is particularly noteworthy as supplies of electricity are top of mind during the transition to carbon-free fuel sources.



Marty Meixell retires from Fairmont Public Utilities

Marty Meixell has retired from Fairmont Public Utilities after 45 years of service. Marty started as an apprentice lineman in 1978, working his way up to Crew Foreman and eventually to Electric Distribution Superintendent, a position he has held since 2008.



"I have had the privilege of working and learning from two

great superintendents during my career, and I hope to take what I learned from each of them to [move] our utility into the future," said new Electric Distribution Superintendent Miles Heide. "Marty did a great job, and we all wish him a happy and healthy retirement."

MMUA seconds that wish!



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Adam Chesney joins MMUA

Adam Chesney has joined MMUA as a Regional Safety Coordinator in the Northeast group.



Prior to his position at MMUA, Adam worked for Altec Industries as their

Environmental, Health and Safety Manager. He has more than 10 years of experience in safety compliance and training in utility-related organizations, and he is a Certified Safety Professional.

Adam holds a Bachelor of Business Administration from the University of Wisconsin-Superior and a Master of Environmental Health and Safety from the University of Minnesota Duluth.

Welcome to MMUA, Adam!

Nominations sought for MMUA awards, board of directors seat



MMUA's Nominations and Awards Committee is accepting nominations for MMUA's 2023 industry awards.

This is a great way to recognize a municipal utility colleague, a public official, or a municipal utility system for showing leadership, and innovation, and providing an example for others to follow.

Nomination forms for the various awards can be downloaded from MMUA's website at <https://www.mmua.org/about/awards-and-recognition>. All nominations will be considered. The deadline for 2023 submissions is June 30. The awards will be presented at the MMUA Summer Conference on August 22.

Submit for One or More of the Following Award Categories

System Innovation—This award is given to a utility that has demonstrated leadership and innovation in customer service,

energy efficiency or renewables, technology, or other areas.

Public Service—This award is given to a state or federal elected or appointed official who has been a strong supporter of MMUA and its members.

Distinguished Service—This award is given to individuals who perform outstanding service in support of the Association and its goals.

Community Service—This award is given to an individual who has performed long and well in support of a municipal utility at the local level.

Rising Star—This award recognizes a future leader who has demonstrated a dedication to the goals and principles of municipal utilities through problem solving, creativity, and job knowledge.

Honorary Lifetime Membership—This prestigious award symbolizes a long professional life dedicated not only to the advancement of municipal utilities locally, but also for the betterment of our industry on a statewide basis.

Board of Directors

Serving on MMUA's Board of Directors is an honor as well as a responsibility, and it is a great opportunity for professional growth. One seat on the Board is coming open this year through the regular rotation process. If you represent a regular MMUA member utility, are willing to accept responsibility for governance of the organization, and are available to actively participate as a Board member, please contact Karleen Kos to declare your interest and learn more about the nominations process.

Nomination forms should be submitted to Karleen Kos via email (kkos@mmua.org) or regular mail (3131 Fernbrook Lane North, Suite 200, Plymouth, MN 55447). The deadline for nominations is June 30.

If you have any questions about the nominations process or what service on the Board involves, please contact MMUA CEO Karleen Kos. She will be happy to discuss the role of the Board members and the time commitment involved. Please email or call her at 763-746-0701.

Raymond train derailment prompts evacuations, road closures



In the early morning of March 30, a train derailment occurred in Raymond, a town located in Kandiyohi County near Willmar, about 110 miles west of Minneapolis.

The Burlington Northern Santa Fe (BNSF) train had 22 cars derail, with some of the cars catching fire. Most of the burning cars carried ethanol and corn syrup. No direct injuries or fatalities from the derailment were reported.

The Raymond Fire Department and neighboring community fire departments responded to the event. The fire was brought under control, and the ethanol was allowed to burn out.

To help protect citizens in Raymond, a half-mile evacuation zone was established and part of the community was evacuated to the nearby town of Prinsburg. Highway 23 was closed through part of Raymond due to its proximity to the derailment.

Federal Railroad Administration officials and BNSF personnel were on the ground in Raymond later on the morning of the derailment. Governor Tim Walz also visited the derailment site that day to view the scene and offer his office as a resource to the community. Officials noted the derailment completely blocked the main track, closing the line for the near future.

Wärtsilä gas engine reaches 95 percent capacity on 25 percent hydrogen blend



A 20-megawatt engine test at the A.J. Mihm Generation Station in Pelkie, Michigan, saw a 25 percent hydrogen/ 75 percent natural gas blend burn at 95 percent capacity with no leaks.

The Wärtsilä engine achieved a 10-12 percent reduction in carbon dioxide emissions with the blend. Although the engine's requirements limited the blend to 25 percent, Wärtsilä is also developing engines that will be capable of burning 100 percent hydrogen.

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Legislature takes a break

Continued from page 1

rather than on the state as a whole. Other provisions seemed of less interest to municipal utilities.

On the finance side of things, SF 2847 was selected to be the vehicle for the Senate Omnibus Energy Finance Bill. This bill contains provisions of both direct and indirect interest to municipal utilities. For example, the bill authorizes the use of funds for pre-weatherization of certain homes, which in turn may make the house eligible for winterization conservation efforts under the Conservation Improvement Program.

- Section 28 of the bill imposes new benchmark reporting requirements for both utilities and certain consumers. MMUA opposed the bill as introduced, but an amendment narrowed the scope so that it now applies primarily to investor-owned utilities (IOUs) and certain

property owners in the seven-county metropolitan area. Outside the metro area it will apply only to IOUs and municipal utilities located in a city with a population of at least 50,000. Regardless of whether the city is inside or outside of the metropolitan area, the benchmarking requirement would apply only to certain buildings having a total area of at least 50,000 total square feet.

- The bill also modifies and funds the Solar on Schools program, and it establishes a new Solar on Public Buildings program. The latter provision contains language requested by MMUA to require solar developers to work with the local utility before a grant is sought to ensure there are no foreseeable barriers to an interconnection agreement

being signed. This was done so problematic third-party sales agreements could be stopped and addressed before grant money was at risk. The bill also authorizes a study of advanced nuclear power options, an action that is consistent with one of MMUA's objectives for the 2023 legislative session.

- The bill authorizes an extra \$15 million for grants to municipal utilities and rural electric cooperatives, their statewide trade associations, or a generation and transmission cooperative or power agency working on behalf of one or more municipal or cooperative utilities. The funds must be used for projects that develop or improve distributed energy resources in the state, or provide utilities flexibility resulting in lower costs for consumers, environmental benefits, increased grid resiliency, generation or storage near load centers, or for the increased safety of employees exposed to electrical hazards.

On the House side, HF 2754 became the vehicle for a combined Omnibus House Energy Policy and Finance Bill. This bill contains several provisions related to EV sales, school bus electrification, and related matters. The House bill also contains some of the same provisions as the Senate bill, such as the benchmarking

provisions, although this version has not yet been amended to match the Senate's narrowed scope. MMUA has been assured the same amendment now found in the Senate version will ultimately be applied to the House bill. The House bill is also offering a total of \$750,000 to help utilities offset expenses attributable to benchmarking. The 10-day window to provide customer data, the expansion of Solar on Schools, and the development of Solar on Public Buildings programs, can also be found in both the House and Senate's bills.

One House-only provision of concern is a proposal to allow a person to expand the capacity of a distributed energy resources facility without limitation on size or the need to go through a subsequent interconnection process.

Looking ahead, in addition to the proposed omnibus bills above, a provision could surface in an upcoming Omnibus Environment Bill requiring consideration of cumulative impacts on certain communities before most air permits could be approved or reauthorized.

In good news, both the House and Senate appear ready to repeal the local government salary cap, with the Omnibus State Government Finance Bill being the likely vehicle for that change. MMUA has been working toward this measure during the past several sessions.

When the legislature reconvenes on April 11, it is expected the House and Senate will merge their Omnibus Energy Bills with their respective Omnibus Environment Bills and, perhaps, with their Omnibus Commerce Bills. Conference committees will be needed to sort out differences between House and Senate provisions, although conversations indicate the bills' authors are trying to "pre-conference" their bills by unofficially working out differences in language before the conference committee process begins.

Links/Contact

A list of all introduced bills, copies of bills both as introduced and amended, a calendar of all scheduled hearings, and other useful information can be found at the Legislature's website. And be sure to check out MMUA's legislation Log occasionally for bills of particular interest to municipal utilities.

Please contact Kent Sulem (ksulem@mmua.org) or Bill Black (bblack@mmua.org) if you have any questions or suggestions regarding the Capitol Letter or any topic reported on in any issue.

For a complete overview of bills being tracked by MMUA and for a complete summary of the House and Senate Omnibus Energy Bills, visit mmua.org's Laws and Bills page.



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German utility to build 960 MW wind farm

EnBW, a Germany-based energy company, finalized its plans on March 23 to build the He Dreiht offshore wind farm, which will be located in the German North Sea.

The wind farm is expected to cost approximately \$2.6 billion. When complete in 2025, the wind installation will generate 960 megawatts (MW), enough to power 1.1 million homes.

EnBW has also secured additional funding from the European Investment Bank in the amount of €600 million.



Wisconsin's largest planned renewable energy facility sold

On March 16, the Wisconsin Public Service Commission okayed the sale of the Koshkonong Solar Energy Center for \$649 million from energy developer Invenergy to a consortium including We Energies, Wisconsin Public Service, and Madison Gas and Electric.



Construction of the facility has not yet started. Work is anticipated to begin later this year, with the facility coming online in 2025. The project will have 300 megawatts (MW) of solar and 165 MW of

battery storage, which will be enough to power 90,000 homes. The project is located in Dane County, Wisconsin, which is also the home of the state capitol, Madison.

Small nuclear power plant developer to install 34 reactors in Europe

Last Energy Inc., a startup that builds small nuclear power plants, has reached a deal to build 34 reactors on the European continent.

The value of the transactions is \$18.9 billion.

Most of the plants will be located in Poland and the United Kingdom. The nuclear plants are 20-MW systems, which is significantly smaller than current nuclear power plants, such as the one in Monticello, Minnesota, which generates 671 MW.

The new plants will be used by customers ranging from green hydrogen plants to industrial zones. Once they are approved



by regulators, installation of the plants will begin in 2025.

Another place for solar panel installations: railroad tracks

A company from Switzerland has developed a special system that can lay down solar panels in the middle of railroad tracks, turning an unused area into a new source of electricity.

The Swiss startup Sun-Ways, using a special train developed by Swiss track maintenance company Scheuchzer, efficiently lays the panels by unrolling them in sequence and using pistons to attach the panels to the railroad tracks.

The company is eager to expand into many other countries' rail systems. Sun-Ways estimates that 50 percent of the world's railways could have their solar panel system installed.



NextEra Energy Marketing is a wholesale power supplier responsible for the electricity and fuel management for all of NextEra Energy Resources' generation fleet, which includes the largest renewable energy portfolio in North America.

Kristi Johnson
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MMUA updates foundational documents



At a membership meeting on January 25, a quorum of MMUA members voted to update the Association's articles of incorporation and bylaws.

The need for the changes had been discussed at an August membership meeting, and the Board of Directors approved draft language in December. It was then circulated to the full membership with a meeting notice earlier in January.

The changes to the documents addressed matters of conformity with Minnesota law governing associations and updates to align the documents with MMUA's current needs and practices. The documents as amended are available on MMUA's website. Members that wish to compare them to the prior documents may request them from Rita Kelly via email at rkelly@mmua.org.

DOE announces funding for bioenergy research centers

On March 17, the Department of Energy (DOE) announced \$590 million in funding for the DOE's bioenergy research centers.

The group of four centers, which have been funded since 2007, exist to support the development of a domestic bioenergy industry. Each center has a specific scope within the bioenergy sphere and is accountable for goals and projects within that area. The funding will help the centers continue their work on biofuels and new biomass types.

The decision to further fund the bioenergy research centers was made based on feedback from outside peer reviewers who studied each center's research and outcomes over the past five years.

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Public Utilities Commission approves Byron Solar in Dodge County



On March 9, the Minnesota Public Utilities Commission approved what will be the second-largest solar project in Minnesota, the Byron Solar Project in Dodge County.

The project will include 200 megawatts of solar arrays and a three-mile transmission line. Byron Solar will cover more than 1,500 acres and is being developed by EDF Renewables.

Byron Solar's construction is planned to begin in 2024, with

operations beginning in 2025. In terms of size, only the Sherco Solar Project being constructed at the current Sherco Power Plant site in Becker, Minnesota will be larger.

Australian scientists break down solar panels using new methods

Scientists at Deakin University in Victoria, Australia, have found a way to keep solar panels from their usual fate when they are worn out: either being landfilled or broken down using expensive and less earth-friendly chemical methods.

Instead, the team has developed a method of recycling the panels

that uses heating and less-dangerous chemicals to break the panels down into their constituent parts. The method is less dangerous and costly than traditional solar panel recycling methods.

Processes like this could be a boon to the global solar industry as the number of worn-out solar panels increases over time.

EPA proposes first federal limits on PFAS chemicals

On March 14, the Environmental Protection Agency (EPA) proposed the first federal limits on per- and polyfluoroalkyl substances, better known as PFAS. The proposed limits on PFAS would be four parts per trillion, which is the lowest level of the chemicals that can be measured with today's technology.

The proposal begins a process of public comment that is expected to last much of the year until a

final rule is issued toward the end of 2023.

The move reflects an increased understanding of the danger of PFAS. The rule could also have impacts on manufacturers and water systems as they adapt to the new requirements. The EPA has made billions in federal dollars available to communities so they can begin addressing the problem of PFAS, but much more help will likely be required if the rule is adopted.

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Electrical Skills Training for Water/Wastewater Operators proves popular in its second year



Reed Andries of Marshall Municipal Utilities speaks to the class during their tour of the Marshall water plant.



Tim Anderson of Marshall Municipal Utilities examines the 800-kilowatt Caterpillar backup generator for the water plant.



Tim Anderson shows the ratio telemetry unit for the plant.



Brian Kircher presented on several important electrical topics, including the dangers of arc flash and the importance of properly labeling electrical cabinets.

Marin County, California tests wastewater samples for drugs

A new initiative in Marin County, north of San Francisco, is seeing the county's public health office using wastewater to test for the presence of several drugs, for the purpose of public health surveillance.

Samples are taken weekly from the Central Marin Sanitation Agency in San Rafael and sent to the public health office, where they are tested for levels of fentanyl, cocaine, nicotine, and methamphetamine.

The county is working with a company called Biotest Analytics to do the study. By using data collected from wastewater,

public health officials can track increased use of dangerous drugs like fentanyl and take proactive measures to intervene, a technique many public health agencies began employing during the COVID-19 pandemic. For example, a spike in methamphetamine in wastewater could lead to more information being shared about addiction resources or counseling. Drug epidemics can be slowed or minimized as a result, with fewer users dying.

This sort of tracking is already being used in a few communities and counties across the country and will likely grow in its use as a useful public health tool.



International Energy Agency's Electricity Market Report illustrates strength of world electricity generation

The International Energy Agency's (IEA) Electricity Market Report 2023 reflects the many facets of electrical generation in 2022: a quickly growing renewable space, electricity users who make choices based on cost as well as green power, and a European market that has seen even more flux because of the Russian invasion of Ukraine.

Through these things, the world electricity market in 2022 showed a remarkable resilience and ability to weather the storm.

The report highlighted the fact that given current trends, renewables and nuclear will cover more than 90 percent of the growth in energy demand from 2023 to 2025. China will account for 45 percent of renewable generation growth, and the European Union will account for 15 percent in the same period.

From 2023 to 2025, the share of renewables in global power generation is expected to rise from 29 percent to 35 percent. However, due to an overall increase in the demand for power, global generation from carbon-based sources is expected to remain the same. The Middle East and Asia will actually see growth in carbon-based generation during the period.

Carbon dioxide (CO₂) emissions from electrical generation reached their all-time high in 2022, which was not a promising sign as the world emerged from the worst of the COVID-19 pandemic. However, the IEA projects that CO₂ emissions from electrical generation should remain flat through 2025, as the above noted growth in renewables largely replaces growth in carbon-based generation.

Nuclear will be a large part of the carbon solution worldwide, especially in places where the technology makes economic sense. For this reason, the IEA projects that one-half of the growth in nuclear generation will come from four Asian countries: China, Korea, Japan, and India. Strong growth, government concerns about energy supplies, and climate change are all drivers for countries to look to nuclear. Meanwhile, the European Union had a difficult year with their nuclear infrastructure, with "closures and unavailabilities" accounting for 17 percent less nuclear generation in 2022 than in 2021.

The IEA sees the energy impacts on Europe of the Russian invasion of Ukraine as slowly resolving, but still uncertain. The conflict led the countries of

the EU to mark 4.5 percent annual growth in CO₂ emissions, largely because of a return to coal-fired generation made necessary owing to supply shortages of gas. The EU's gas-fired generation also increased 2 percent in 2022. The IEA sees Europe deviating from this path as supplies stabilize and renewables continue to increase.

The IEA sees high electricity prices continuing to be an issue for the countries of the world. In the EU and parts of the West, the transition to renewables as well as high prices for carbon-based fuels will continue to impact ratepayers for at least the next few years. In the Third World, high prices for carbon-based fuels and climate change will continue to wreak havoc for their ratepayers.

The IEA report is a study of an electricity generation world in flux. Even with many challenges, the world market is strong and showing signs of recovering from tumultuous years of war, severe weather, and disease. Stabilization of fuel prices and the rapid development of the world's renewable generation assets are both promising signs for the future.

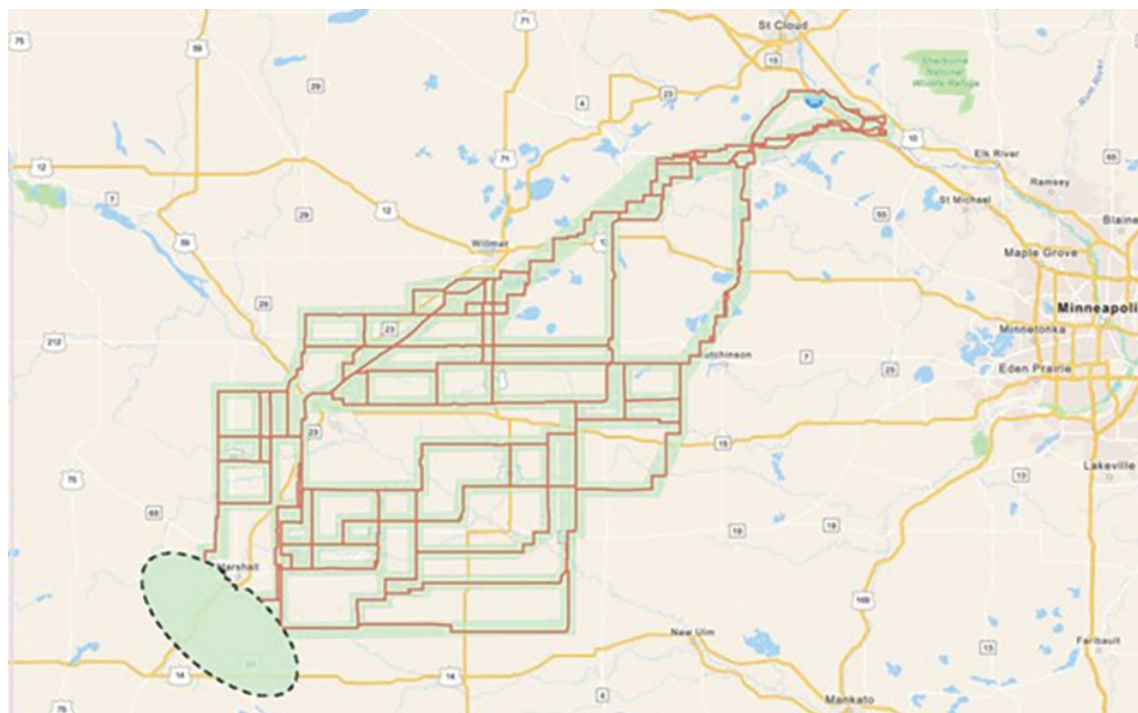
Xcel open houses work to determine transmission line route

A series of open houses in late February and early March saw Xcel Energy talking to citizens in Granite Falls, Redwood Falls, and Marshall as the company attempts to determine the route of new transmission lines that will connect Lyon County to the Sherco power plant site in Sherburne County.

The line will be between 160 and 180 miles long, with a double-circuit, 345-kilowatt setup. The construction of the line is necessitated by Xcel's pivot away from fossil fuel generation and towards renewables, with the new line carrying a significant amount of renewable power from wind farms in southwest

Minnesota. The line will carry 2,000 megawatts of electricity.

At this time, Xcel is considering over 20 route options. Through these meetings and other forms of public comment, the company will winnow the field by late 2023. Construction of the line could start by 2026.



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Municipal hydro

Continued from page 1

(MW) of electricity and is a run of the river dam, meaning there is a continuous discharge of water without storage and release. The dam supplies electricity to about 1,900 homes in BPU's service territory, meeting about 10 percent of the city's power needs.

Rochester Public Utilities (RPU) also operates a hydroelectric facility, the Lake Zumbro Hydroelectric Generating Plant. The facility is located on the Zumbro River in Mazeppa and Zumbro Township in Wabasha County. It has a capacity of 1.35 MW, and currently supplies about one percent of Rochester's electricity needs.

RPU is the original operator of the hydro facility, says RPU's Tony Benson. It was built between 1917 and 1919 by famed hydroelectric engineer Hugh Lincoln Cooper. The plant was listed on the National Register of Historic Places in 1991, partially because of its connection to Cooper.

RPU does have the ability to draw down its reservoir. That happens annually to allow for a third-party dam inspection. This drawdown, which normally occurs in the fall, is in the range of 1.5 to 4 feet.

Granite Falls Public Utilities also operates its own hydropower plant. The modern facility was

put into service in the 1930s and has run smoothly since then. Electrical Superintendent Perry Peterson says the plant puts out about 1.3 MW, and in times of flooding, it can't be run too much. The plant has three generators: the two oldest were upgraded in the last few years. The third one is also now being overhauled.

The City of Hastings operates the Hastings Hydrokinetic Power Station. This facility cost \$10 million to build in 1987, and it is composed of two turbines and generation units, each of which can generate 2.2 MW. The city has a contract with Xcel, which is the primary customer for the power generated by the Hastings facility. The operational safety and integrity of the station will be studied this year.

The City of Lanesboro's first dam was built in 1868 at a cost of \$15,000. It was "constructed of solid square stones approximately 2 1/2 feet thick, the dam was built on a foundation of solid stone and anchored at each side by rock bluffs," according to the book *Images of America, Lanesboro, Minnesota Historic Destination* by Don Ward and Ted St. Mane. The same book reports "the first hydro-electric plant was built in the mid-1890s"



The City of Lanesboro dam

and "by the early 1900s a small, brick power station had replaced the first simple structure." By 1925 the station expanded again.

By the early 2000s the Lanesboro dam was in need of repair, and in 2020 a repair project was completed that "took 10 years, four mayors, three city administrators, and several council members to finally be awarded grant funding from the Minnesota Legislature," according to City Administrator Michele Peterson as quoted in the *Fillmore County Journal* on October 6, 2020. Lanesboro's dam has a 0.3 MW capacity, enough to power nearly 10 percent of the community's homes.

The Redwood Falls Public Utilities Commission generates about 500 kilowatts (kW) of electricity at a hydro power plant located on the Redwood River. The hydro plant is used primarily for backup power supply, providing peak performance and load balance demand.

In 2013 Redwood Falls hired Barr Engineering to design a new powerhouse and turbine support structure and coordinate the electrical and structural work with the suppliers of the new turbine and generator. The existing hydro turbine was replaced with a 500 kW turbine. Because the facility was rated for 500 kW, Barr coordinated

with FERC and the city to keep the upgrade within facility limits, so that no relicensing would be required.

While contributing a relatively small amount of Minnesota's total power, the state's municipal hydropower generating facilities are an important piece of the energy puzzle. They are green, help make our communities even more self-sufficient, and are often of a historic nature. In light of the move toward carbon-free energy, some communities are considering expanding their generation capabilities or examining unused hydro resources in their communities. Look for more coverage in *The Resource* as these projects unfold.

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EPA issues downwind pollution rule

A new rule issued by the Environmental Protection Agency (EPA) on March 15 formalized plans by the Agency to restrict smoke-stack emissions of nitrogen oxides (NOx) from power plants and industrial emissions sources.

NOx is a contributor to smog and air pollution.

Under the rule, 23 states, including Minnesota, will be required to meet stronger emissions standards in order to be a “good neighbor” to areas that

are downwind of the emissions. In Minnesota, the rule will only apply to power plants. Facilities that lack NOx emissions equipment will be required to install it.

The EPA projects that adoption of the rule will decrease NOx emissions by 70,000 tons in the 2026 ozone season, which runs from May 1 to September 30. Although the rule will allow emitters to bank NOx allowances, the EPA estimates that the rule will lead to further closures of coal power plants.

Combined sewer builders get a chance to bike inside new London sewer

Workers employed in London’s “Tideway London” project, a massive new combined sewer that lies under the river Thames, were recently given the chance to buy raffle tickets to bike the 2.8-mile-long sewer before it opens.

Six winners (out of 360 raffle tickets sold) were lowered to the sewer floor in early February and had the chance to cycle in the tunnel.

Bikers said that it was not claustrophobic because of its size, and they were able to hear older London Underground routes from



the sewer, but not the newer lines. Tideway London is part of an ongoing project to clean up the river Thames. When it opens

in 2025, the sewer will remove 95 percent of 40 million tons of untreated wastewater that is currently going into the river.

U.S. Solar to construct WMMPA-financed Marshall Solar Plus project

Missouri River Energy Resources (MRES) announced on March 1 that their Board of Directors, as well as the Western Minnesota Municipal Power Agency’s Board of Directors, has approved a Build-Own-Transfer agreement with U.S. Solar to develop the Marshall Solar Plus project.

The project, which will be located in Marshall, Minnesota, will include more than 26,000 solar panels situated on 57 acres

of land. The rated capacity of the solar project will be 10 megawatts (MW), which is enough to serve more than 2,000 homes. The project will also include a 5 MW battery storage system.

Under the agreement, U.S. Solar will develop, design, and construct the project. Electricity from the plant will serve MRES member utilities.

Substantial completion is expected in August 2024.

Monticello Nuclear Generating Plant shut down due to radioactive water leak

On March 16, state regulators and officials from Xcel Energy reported that 400,000 gallons of water tainted with radioactive tritium had begun leaking from a broken pipe in late 2022.

The spill was reported to regulators on November 22, with the source identified on December 19 and remedied shortly thereafter.

The only previous public notification was a Nuclear Regulatory Commission event notification on November 23 that documented elevated tritium levels in an on-site monitoring well, with a note that the power plant would attempt to establish the source

of the elevated tritium levels.

The tritium-tainted water has entered groundwater in the area, but the Minnesota Pollution Control Agency said that neither city water in Monticello or the Mississippi River is currently at risk.

Xcel is pumping water from wells on-site to remove contamination and slow the underground flow of contaminated water. The company’s goal is to eliminate as much contaminated groundwater as possible below the plant, and then treat it on-site. Remediation work in this area could take about a year.

On March 24, a second leak

was discovered at the plant, and its source was traced to a repair to the original leak. A small amount of tritium-laced water entered the ground at this time. As a result of the continuing leaks, Xcel Energy shut down the plant on March 25 so that repairs could again be made.

The shutdown caused a temperature change in the adjacent Mississippi River, cooling the water and killing around 230 fish. On March 28, Xcel said the repair had been completed, and the plant was slated to begin operation again in early April.

EU surpassing 2030 renewable goals

A new report from energy think tank Ember projects the European Union (EU) will not only meet its 2030 target of 40 percent renewable energy, it will likely attain a 45 percent renewable energy level by that date.

Ember notes in their report that energy insecurity caused by the war in Ukraine, the growing impacts of climate change, and rapidly dropping renewable prices, have led to explosive growth in

renewable energy on the continent.

Among the technologies that will surpass their estimated 2030 installations are solar panels, which will see twice the installations that were initially forecast, and heat pumps, which are 50 percent higher than forecast.

In response to this growth, Ember argues that the EU should adjust their renewable energy targets to account for this new reality, much of which has been driven by favorable market forces.



DOE starts \$1.2 billion award cycle to help nuclear power plants stay open

On March 2, the Department of Energy (DOE) opened the funding process for nuclear power plants that are at risk of closing, as well as plants that closed since November 15, 2021.

The \$1.2 billion funding opportunity is the second part of the \$6 billion Civil Nuclear Credit

Program, a part of the Infrastructure Investment and Jobs Act designed to prevent the closure of nuclear power plants.

The DOE noted in a statement that “...nuclear energy is critical to meeting the President’s goal of achieving 100% clean electricity by 2035.”

Minnesota Clean Car Rule target of lawsuit

A lawsuit filed on March 14 in U.S. District Court argues that the State of Minnesota went too far with passage of the new Minnesota clean car standards.

The plaintiffs claim the new requirements overstep federal law and will be damaging to economic activity in the state.

Plaintiffs include a plethora of interests, including the Minnesota Soybean Growers Association,

the National Association of Convenience Stores, and the Minnesota Service Station & Convenience Store Association. The defendants in the case include Governor Walz and the Minnesota Pollution Control Agency (MPCA).

The plaintiffs assert the rules will be damaging to their businesses, which include ethanol sales as well as the retailing of gasoline and associated products.

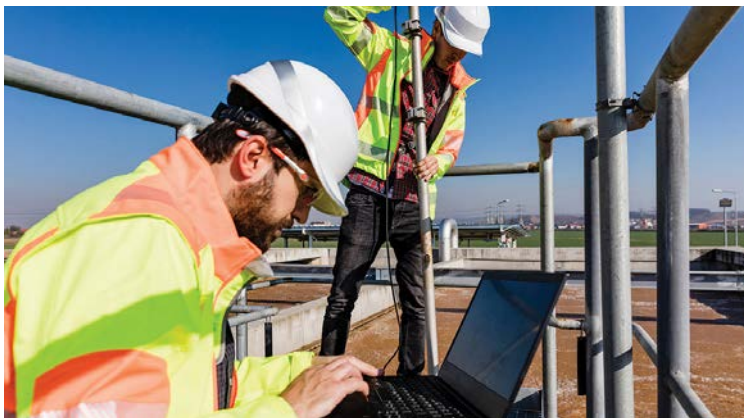
A spokesperson from the MPCA says the policy has been approved by an administrative law judge and upheld by the Court of Appeals.

The Minnesota Auto Dealers Association previously challenged the clean car standards; they lost their case in the Minnesota Court of Appeals in 2022. The rules in question were adopted on July 26, 2021.

Ann Arbor pilot water treatment plant to have college student staff

A new pilot water treatment plant that broke ground in Ann Arbor, Michigan in February will implement novel water treatment technologies, all with a hand from University of Michigan students.

Ann Arbor's water treatment plant dates back to the 1930s, and the area has also dealt with a series of contaminants that have plagued the city's drinking water. As a result, the city is in the process of constructing a pilot water plant that will be able to implement new treatment technologies before they are put into place in a full-scale plant. The pilot plant will be able to experiment and ascertain that the city is actually getting the



results it needs before adopting the treatment strategy for the water supply.

As part of the pilot, students from the University of Michigan are coming on board to provide "operational assistance and

research support" for the new plant. The Ann Arbor City Council has made a \$450,000 agreement with the University to facilitate this support.

Testing of water will begin at the pilot plant in May of 2023.

Department of Energy to study agrivoltaics

Late in 2022, the Department of Energy (DOE) granted funds to several research groups to study the possibilities of agrivoltaics in the U.S.

Agrivoltaics are agricultural activities that exist below or between solar panels. The possibility of solar panels and agriculture coexisting is increasing in importance as solar installations increase, particularly in rural areas.

Among the projects being studied include beekeeping, growing crops, grazing, and barriers to photovoltaics.

The program is being administered by the DOE's Solar Energy Technologies Office.

E15 to be sold year-round in Midwest under new EPA rule

A rule released by the Environmental Protection Agency (EPA) on March 2 will permit the year-round sale of ethanol fuel blends up to E15, or 15 percent ethanol, in eight midwestern states starting in the summer of 2024.

The states, which include Iowa, Illinois, Kansas, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin, had petitioned the EPA for the right to make E15 available year-round permanently. The EPA has previously issued waivers for the sale of E15 several times in the last few years, for reasons ranging from fuel supply problems caused by COVID-19 and the war in Ukraine to refinery issues.

In the past, sales of E15 were usually banned between June 1 and September 15 because of concerns that it caused smog during hot weather.

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Rare earth elements can be extracted from wastewater

In an interesting synthesis, research published in *Frontiers in Bioengineering and Biotechnology* has found that the rare earth elements (REE) needed for wind turbines and solar panels can be extracted from wastewater using bacteria.



German scientists have discovered that certain photosynthetic cyanobacteria can efficiently absorb REE's from wastewater, which can then be washed out and used. The bacteria used in the projects are rare in nature and were taken from unique environments around the world.

REEs including lanthanum,

cerium, neodymium, and terbium were among the elements studied in the test. Researchers found the bacteria could absorb even low concentrations of the metals in wastewater, which would typically be taken from processes like mining or the recycling of materials containing REEs.

The team believes that the process will be cost-competitive in the near future.

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South Korean university creates membrane that can filter wastewater and create electricity

Scientists at the Korea Institute of Science and Technology have created a new membrane that can efficiently filter water and produce electricity at the same time.

The membrane is described as “sandwich-like” with polymer at the top that generates electricity

and a membrane at the bottom that filters the water. It has the ability to generate direct current as ions move horizontally through it.

The material is an extremely efficient filter as well, removing contaminants smaller than 10 nanometers in diameter. This makes the membrane suitable for many water filtration activities,

including groundwater filtration and wastewater treatment.

The technology also possesses qualities that make it inexpensive and relatively easy to manufacture. Scientists plan to further improve the membrane so it is capable of filtering wastewater to the level of drinking water.



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California Energy Commission approves plan to keep Diablo Canyon nuclear power plant open through 2030

On February 28, the California Energy Commission (CEC) okayed a staff analysis that recommended the state continue to operate the Diablo Canyon nuclear power plant through 2030.

The analysis said operation through that date was warranted to maintain stability for the state’s power grid. Among the factors supporting the recommendation was the record-setting peak load reached on September 6 during a long-duration heat wave.

The analysis was required by a state law that asked the CEC to determine the necessity of operating Diablo Canyon past its current license expiration date of 2025.

Diablo Canyon is California’s only remaining nuclear power plant. Pacific Gas & Electric, the plant’s owner, plans to submit a new license application by the end of 2023.

China to build world’s largest green hydrogen plant through 2030



A new Chinese green hydrogen plant will be the world’s largest, producing 30,000 tons of green hydrogen per year.

The \$831 million project is being done by Sinopec, a Chinese state oil refiner. It will be located in Inner Mongolia in northern China. The plant will create its green hydrogen from 450 megawatts (MW) of wind production and 270 MW of solar. Most of the green hydrogen from the plant will be sent via pipeline to another plant that makes synthetic chemicals.

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Argentina suffers severe blackouts due to wildfire

A fire on March 1 west of the Argentinian capital Buenos Aires caused a blackout that left more than 20 million people in the dark for several hours.

Some 10,000 megawatts of generation vanished after a safety system tripped, causing several power lines and power plants to go offline. These included the nuclear plants Atucha I and Embalse.

The blackout came at the same time a drought and heatwave is affecting the country. Power was largely restored by March 2.



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Global study reveals world broadband prices

A worldwide study by Cable.co.uk, a website that compares internet prices for consumers in the United Kingdom, shows the African continent has both the cheapest and most expensive wired broadband service in the world, and prices are generally high in North America and Western Europe.

The cheapest broadband in the world can be found in Sudan, which lies immediately south of Egypt. Consumers in the country pay the equivalent of \$2.30 United States Dollars (USD) a month. The most expensive place in the world to get broadband is Burundi, in central Africa near Rwanda. Consumers in the country pay \$383.79 USD per month for broadband.

The U.S. and Canada rank poorly compared to Sudan, at 146th least expensive and 136th, respectively. The average price for broadband in Canada is \$58.14 USD, while it is \$59.99 in the U.S.

Most of Western Europe has broadband pricing in the \$30-\$50 USD range, with the outliers being Belgium at \$58.01 and Norway at \$87.36. Pricing was generally lower in Eastern Europe, where monthly costs were in the \$5-\$20 range.

Prices in Asia varied, but around \$20 per month was common for many countries in Southeast Asia, as well as in China.

Worldwide pricing of wireless broadband was not tracked in the survey.

Pearl Harbor treatment plant releases partially treated wastewater after power outage

On March 7, a short power outage resulted in the release of 14,000 gallons of partially treated wastewater from the Joint Base Pearl Harbor-Hickam Wastewater Treatment Plant in Oahu, Hawaii.

An electrical power spike around noon caused the plant to be without power for about two minutes. As a result, the final stage of water treatment, ultra-violet disinfection, was halted for a short period of time.

The water was released into Mamala Bay. The Navy noted treatment procedures at the plant are more intensive than many other wastewater treatment plants.


Joint Base Pearl Harbor-Hickam



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attack that precipitated American entry into World War II.



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Georgia nuclear power plant reaches criticality



On March 6, Vogtle Unit 3 near Waynesboro, Georgia, reached criticality for the first time.

The plant has achieved a self-sustaining nuclear reaction and is splitting atoms. The unit is expected to start commercial operation in May or June of this year. It will be joined in the next few years by Vogtle Unit 4, which is located at the same site.

Vogtle 3 is only the second nuclear reactor to start operation in the U.S. in the twenty-first century. The other is Watts Bar Unit 2 in Tennessee, which began operation in 2016.

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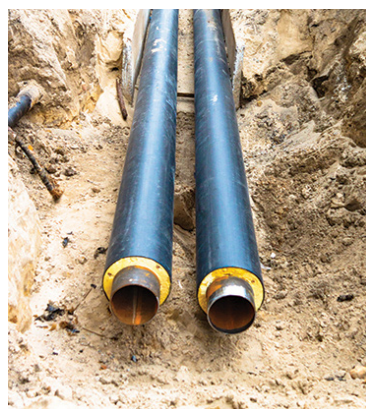
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Benson leaders worked with leadership development and strategic planning expert Marcy Douglas from Missouri River Energy Services on March 10 and 11 to examine Benson's strengths, weaknesses, opportunities, and threats so the city can plan for the future.

Ceylon has disbanded its American Legion and Auxiliary and Sons of the American Legion after 76 years.

Six of **Detroit Lakes Public Utilities'** utility boxes are going to be decorated with original artwork this year. The artists' work will be transformed into vinyl wraps that will be applied to the boxes. An unveiling is scheduled for mid-September.



On March 7, city officials in **Ely** discussed the replacement of the city's drinking water supply line. The line runs five miles from Burntside Lake to Ely and was constructed in 1932 with upgrades in the 1950s and 1970s. The funding plan has not been announced at this time.

The City of **Fairmont** is conducting a rain barrel sale this spring. Rain barrels store rainwater, typically runoff from roofs, for later use. Fairmont officials pointed out several benefits of rain barrels, including a healthier water ecosystem and less water use, which saves residents money.

Marshall has accepted a proposal from Bolton & Menk to study its wastewater rates.

Moorhead Public Service sent out a survey to its customers on topics such as communication methods, renewable energy, customer service, and interest in programs and services.

Owatonna Public Utilities (OPU) commissioner Matt Kottke will complete 10 years of service to the OPU Commission in April 2023. OPU Commissioners are term-limited to two five-year terms.

Pierz swore in newly-appointed mayor John Perleberg and new treasurer Sarah Fyten on February 27.

Rochester Public Utilities is launching a new voluntary demand response program. Customers who install qualifying smart thermostats and agree to brief thermostat adjustments during peak electricity demand periods from May 1 to September 30 will receive a one-time \$50 enrollment incentive, with those enrolled throughout the summer receiving a year-end \$25 bill credit.

On February 27, the **Rushford** City Council implemented business subsidy/revolving loan fund guidelines. This will



assist Rushford in marketing a commercial revolving loan fund program that will help fill commercial space within the city.

On March 13 **Rushford** also awarded a contract for the restoration of the city's water tower. The low bid was \$410,695 from the J.R. Stelter Company of Lincoln, Nebraska.



A water main break occurred in **Stephen** on March 2 and affected water service to a large portion

of the community. Water service was restored on March 8.

Demolition of the **Willmar** power plant began in early March. The plant produced electricity from 1925-2018. Demolition is expected to take approximately 10 weeks.

Worthington Public Utilities will receive an increase in payments received for generation capacity from \$2.97 per kilowatt per month to \$5 per kilowatt per month according to the terms of a new agreement made with Missouri River Energy Services.

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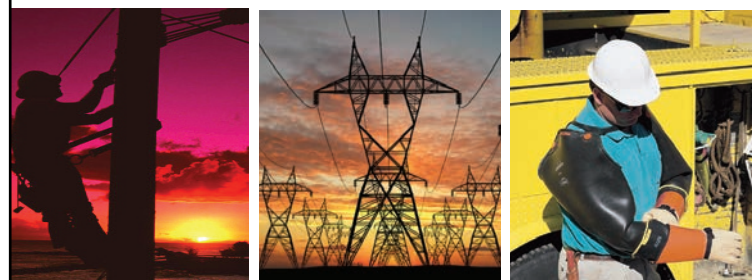


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British Petroleum announced on February 28 that it will end publication of the Statistical Review of World Energy after more than 70 years.

Panelists at the World Mobile Congress in Barcelona, Spain, said that it would likely take until 2030 for 6G broadband to be widespread. 6G has 100 times the capacity of 5G.

Hundreds of Alabama coal miners returned to work on March 2 after the longest strike in Alabama history. More than 1,000 workers at Warrior Met mines throughout Alabama were on strike during the action.

Legislation has been introduced in Florida that would regulate municipal utilities with customers outside of city boundaries. HB 1331 and SB 1380 would place municipal utilities with these customers under the full regulation of the Florida Public Service Commission (PSC). Municipal utilities in the state plan to fight the bills.



At a speech to a local utilities association on March 7, German Chancellor Olaf Scholz said Germany will create new gas-fired power plants that will run on hydrogen gas. The Chancellor said the capacity of the new plants would be between 17 and 21 gigawatts.

In early March, the United Kingdom's (UK) electric power transmission network, the National Grid, called for coal plants to be put on standby as the UK faced some of the coldest nights of the year. Two units at a coal plant in Nottinghamshire began producing power for the grid on March 7.

Rishi Sunak, the British Prime Minister, is expected to include items like carbon capture and small nuclear reactors as parts of his energy policy. Sunak became the head of the British Government in October 2022.

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St. Paul Regional Water is hiring 30 new employees to speed up the replacement of lead service lines in the city.

French energy workers are among the groups on strike protesting the government's plan to raise the retirement age from 62 to 64. Power production and refining capacity have been among the areas impacted.



Uganda plans to develop its own domestic nuclear power generation industry. The country's president, Yoweri Museveni, said Uganda wants to use its domestic uranium supplies to create its own energy options. Uganda will partner with China to build nuclear reactors that will come online by 2031.

Russian Energy Minister Nikolai Shulginov claimed on March 28 that Russia's oil exports have been completely redirected to avoid the price caps and embargoes put in place by Europe after the Russian war in Ukraine began.

Mexico's desire not to open its power and oil markets to foreign competition will likely lead the Biden Administration to file a trade dispute under the terms of the United States-Mexico-Canada Agreement (USMCA). U.S. oil companies and solar concerns have had difficulty operating in Mexico due to the Mexican government's inaction.

Wisconsin-based startup Type One Energy has just concluded a \$29 million financing round to begin production of a nuclear fusion device called a stellarator. The device differs from many fusion designs by being pretzel shaped.

Ukrainian government officials are concerned that the Zaporizhzhia Nuclear Power Plant could run out of water to cool its reactors by late summer due to Russian forces releasing water from a key reservoir that serves the plant.



Xcel Energy contractor fined more than \$300,000 for coal pile fatalities

Two men working for Xcel Energy contractor Savage Services were killed on June 2 when a pile of coal they were standing on collapsed at Xcel's Comanche Generating Station in Pueblo, Colorado.

As a result, the Occupational Health and Safety Administration (OSHA) has ordered Savage Services to pay \$304,556 for this violation, which it termed "serious," since the workers were continually exposed to the dan-

ger of being engulfed by the coal pile as the fuel was being pulled away by a conveyor belt.

The Comanche Generating Station's coal operations are expected to close by 2031.

NextEra Energy Chief Executive offers comments

At a meeting during the CERA-Week energy conference in Houston, John Ketchum, CEO of NextEra Energy—one of the biggest renewable energy producers in the world—offered his thoughts on a variety of renewable generation types and what the future looks like for them in the immediate future.

On batteries, Ketchum was bullish about the progress the industry would make in the next ten years. He noted the electric

vehicle (EV) industry is driving progress in battery development that will have a significant impact on the development of grid storage batteries.

Ketchum was less positive about his company's prospects in the nascent offshore wind market. He remarked that offshore wind presents many logistical and maintenance-related issues compared to conventional wind power, and those issues will likely keep NextEra from being a large participant in this area.

MPCA's 2022 enforcement case summary shows biggest wastewater offenders

A recently released report from the Minnesota Pollution Control Agency (MPCA) illustrated the wide variety of environmental violations that occurred in the second half of 2022 (July-December) including in the areas of industrial and municipal wastewater.

Some of the biggest fines issued in these areas included:

Springsteel Island Sanitary District—\$10,000. Springsteel Island Sanitary District discharged phosphorus at levels that exceeded its permit on more than 30 occasions since 2013. The district operates a domestic wastewater treatment facility near Warroad.

American Crystal Sugar Company—\$9,900. At its East Grand Forks facility, the company failed to monitor for total and dissolved mercury four times per year during 2020, and it had eight unauthorized wastewater discharges between 2020 and 2022. Facilities exceeded permitted effluent limits numerous times during the review period. The



Moorhead plant also failed to sample its discharges at the frequency required and had eight releases of wastewater or material under its control to the environment.

Prairie River Minerals, Grand Rapids—\$9,160. The facility was not properly operated and maintained to ensure compliance with its permit. According to the MPCA, the firm failed to monitor and sample as required and failed to complete infiltration

basins prior to generating waste materials to be stockpiled at the waste staging and management areas.

Conagra Foods, Waseca—\$6,450. A 2021 force main break resulted in more than 18,000 gallons of industrial wastewater spilling into storm drains that lead to nearby Loon Lake. Other violations included improper sampling and submitting monitoring records late to the MPCA.

Xcel seeks 20-year extension for Monticello's operating license

According to a filing on March 10, Xcel Energy will seek to operate the Monticello Nuclear Power Plant for at least 20 more years.

Monticello is currently licensed to operate until September 2030. The plant opened in

1971 and was originally licensed to operate until 2011. The plant generates 671 megawatts of power using a single boiling water reactor.

A public meeting was held on March 22 to discuss some aspects of the extension request.



Upcoming Events

Underground School

May 9-12
MMUA Training Center
Marshall, MN

Whether you are a seasoned journeyman looking to stay current or an apprentice just starting out, this school offers something for everyone. Individuals will rotate through six sessions, covering a variety of topics that can enhance safety and improve efficiency. To learn more, visit [mmua.org/event/underground-2023](https://www.mmua.org/event/underground-2023). Deadline to register is April 18.

Competent Person and Excavation Safety Workshop

May 23-24
MMUA Training Center
Marshall, MN

This course is intended for public works personnel, water/wastewater personnel, lineworkers, engineering personnel, contract workers, and others involved with underground utility or infrastructure work. Please visit [mmua.org/event/excavation-2023](https://www.mmua.org/event/excavation-2023) to learn more. Deadline to register is April 21.

Minnesota Public Power Walleye Tournament

June 3
Rush Lake, Otter Tail

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June 22—Jackson
June 27—Litchfield

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