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MMUA helps Minnesota's next generation of utility workers take big steps

The next generation of utility workers is driven by a shared passion for hands-on experiences and a desire to serve their communities.

The 2024-25 MMUA Board of Directors recently gathered at the MMUA Summer Conference. Through their leadership, MMUA redesigned its scholarship program and committed to a broader workforce development strategy for the Association.

For MMUA's Utility Workforce Scholarship recipients, the influence of family, mentors, and real-world exposure has shaped their path to the utility industry. MMUA has awarded five $1,000 scholarships to deserving students enrolled in utility-related career programs.

The utility sector plays a vital role in everyone's daily life by delivering reliable access to electricity, water, natural gas, and other essential services. Yet, as the industry faces rising demand, an aging workforce, and rapid technological change, the need for a skilled talent pipeline has never been more urgent. To help meet this challenge, the Association relaunched its scholarship program—renamed the MMUA Utility Workforce Scholarship—earlier this year. Approved by the Board of Directors in

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Minnesota PUC will investigate solar dispute between co-op and tribal casino

By Bill Black, Government Relations Attorney

During a hearing on July 24 that was tense at times, the Minnesota Public Utilities Commission (PUC) heard arguments regarding a complaint against Minnesota Valley Cooperative Light & Power Association brought by the Upper Sioux Community.

At issue is whether the co-op can legally cease service to the Upper Sioux Community's (USC) casino resort if the Community commences operating its newly installed 2.5-megawatt solar facility.

At the hearing, the co-op explained that it has adopted a policy to prohibit customer generation from facilities of greater than 40 kilowatts capacity, unless excess generation is sold only to third parties who are not members of the co-op. The co-op stipulated its concern is primarily financial and not based mainly on safety or technical concerns. The co-op emphasized it has relied on that policy to disallow other co-op members from installing larger systems in the past, and those members have complied. This, it says, keeps all members on equal footing for controlling energy supply costs. Wolf River Electric, which installed the USC's solar system, said it is configured so the casino will use all the energy produced and that Wolf River and USC will pay for the minor utility upgrades identified as necessary in the interconnection process for the non-exporting system.

After two and a half hours, the PUC voted 4–0 to pursue a formal investigation and referred the matter to the Office of Administrative Hearings (OAH). There, an administrative law judge will conduct a contested case proceeding to develop a record of legal arguments, testimony, and technical analysis. The record will then be sent to the PUC for its deliberation and adjudication. The PUC also

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Floods, fire, and ice: plan accordingly

As stronger storms increasingly affect communities, utilities need a plan of action for a more reliable grid. MMUA's Director of Training and Safety, Mike Willetts, is more prepared to help MMUA members protect the grid from extreme weather after attending the Regional Weather Resilience Workshop in Lemont, Illinois.

The session aimed to increase utilities' weather resilience by providing leading data, opportunities for regional collaboration, step-by-step guidance, and customizable templates to build and execute weather resilience plans. This is the second time partners in the Midwest have hosted this type of workshop, and MMUA was on board as a sponsor of the event.

Representatives from the US Department of Energy (DOE), Exelon scientist Rebecca Kartheiser, and Laura Fischer from the Electric Power Research Institute also attended the event held at Argonne National Labs. Argonne is a multidisciplinary science and engineering research center within DOE where leading scientists and engineers work together to answer the biggest questions facing humanity, including how to protect ourselves from emerging threats, extreme weather being one of them. In collaboration with Argonne, the DOE develops tools for electric utilities, assesses infrastructure, plans for regional and national power outages and recovery, and strengthens cybersecurity for electricity distribution systems.

Making a plan

Due to increasing concerns about extreme weather, this year's workshop discussion focused heavily on climate change. "No matter how you view climate change politically, the reality is that outside temperatures are getting hotter on average, and utilities need to change with that to make sure the power is there," said Willetts.

Changes in weather patterns affect the grid. "If extreme

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MMUA

To unify, support and serve as a common voice for municipal utilities

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Cassie Heide and Mark Hanson join MMUA Board of Directors

In August, the MMUA Board of Directors welcomed Cassie Heide and Mark Hanson as new Board members.

Cassie Heide

Mark Hanson

Their names were put forward by the Nominations and Awards Committee, and they were voted into office by the Association's members at the annual meeting in Rochester.

Cassie Heide serves as the City Administrator for the City of Fosston, a role she has held since July 2020. With more than 19 years of dedicated service to the city, Cassie previously held the position of Assistant Administrator and served in various other capacities for 14 years prior to her current role. Her long-standing commitment to public service reflects a deep passion for the community she proudly calls home.

As City Administrator, Cassie oversees the full scope of general government operations and the city's municipally owned utilities, including electricity, natural gas, water, sewer, cable television, and refuse collection. She also serves as a director on the Northern Municipal Power Agency, helping guide regional energy planning and resource management.

Under Cassie's leadership and in collaboration with a forward-thinking city council and utilities commission, Fosston has continued to thrive and advance. Her work has led to the successful writing or co-writing of more than $14 million in grant funding in the past five years, securing significant investments in the city's infrastructure and services.

Among her notable achievements, Cassie spearheaded the effort to re-establish Fosston's own police force after more than two decades of contracting law enforcement services through the county. Additionally, since 2020, the city has completed major upgrades to two primary electric feeder lines and expanded natural gas service to the newly developed third and fourth additions of Fosston's industrial park. Cassie remains committed to shaping a strong future for Fosston through responsive leadership, innovative planning, and a deep-rooted dedication to community service.

Cassie attended Northland Community and Technical College, earning an Associate of Science in Business Administration and Management. She was elected to a three-year term on the Board.

Mark Hanson is currently the General Manager of Elk River Municipal Utilities (ERMU), a position he has held since 2022. He brings more than 25 years of experience as a public works professional and 28 years of service in the United States Air Force to his leadership at ERMU.

Under Mark's guidance, ERMU has taken significant steps toward the future, including the completion of a new field services building and the ongoing transition to advanced metering infrastructure.

Mark holds a Master of Science in Civil Engineering from the University of Minnesota, a Master of Engineering Management from Washington State University, and a Bachelor of Science from the US Air Force Academy. Mark is also a registered Professional Engineer and a licensed Class B Water Operator.

Elected to a one-year term, Mark looks forward to supporting MMUA's mission and advocating for municipal utilities across Minnesota.

At the membership meeting, Roger Warehime from Owatonna Public Utilities and Jay Lutz from Austin Utilities were both re-elected to the Board, where they had been serving partial terms since 2023 and 2024 respectively.

Pete Moulton of Saint Peter Municipal Electric Utility assumed the role of MMUA President for 2025-26, taking over the gavel from Scott Grabe of Staples. Jeremy Carter was voted in as President-elect of the Board, and Roger Warehime will serve as Secretary-Treasurer for the coming year. Grabe and fellow Board member Julie Kennedy, Grand Rapids Public Utilities, both left the Board at the conclusion of the meeting, having each served seven years in their governance roles.

Thank you to all of these dedicated volunteers!

Solar dispute

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took the extraordinary step of referring a question to the Office of the Attorney General (OAG). The PUC's hope, stated by Commissioner Partridge, is that the OAG will find the co-op would be violating state law by discontinuing service to the casino pending the outcome of these proceedings and would also seek a court injunction prohibiting the co-op from discontinuing service.

During the hearing, questions, answers, and comments were exchanged among the commissioners and the two sides as well as with the Department of Commerce; the Minnesota Solar Energy Industries Association; and Clean Up the River Environment (CURE), which, its website says, "protects and restores resilient communities and landscapes." Mainly, the parties described their views on several substantive issues of contention, which they will debate further in the contested case proceedings.

Among them is whether the USC, as a co-op member with a service agreement purportedly waiving its sovereignty for purposes of the contract, has accepted the co-op's policies and must comply with them. Another is whether a co-op, and possibly any utility, can use service shutoff to force compliance with its interconnection requirements, cogeneration and small power production rules, or other utility policies. Further, if the co-op only refuses interconnection permission, what remedy would

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Babies, old folks, and artificial intelligence for utilities

From My Desk to Yours

Karleen Kos
MMUA CEO

It has been a little while since anybody in my life got excited when I took in solid food without spitting it across the room. The days are long gone when approving adults would announce with a gleam in their eye, "She's such a good eater!"

Also gone is anybody's fascination with whether some of that food later reappeared, processed and delivered to the cloth diapers wrapping my backside. Yet in the future, when I am in my dotage and the younger generation is caring for me, whether I am taking in nourishment and getting rid of the leftovers will likely again be a point of interest. I believe we can take an AI lesson from this information.

I have been thinking about artificial intelligence (AI) a lot lately and talking with many people in the municipal utilities space about it. My news feeds carry stories daily about how AI is transforming the world in general and utilities in particular. At the MMUA Summer Conference, some of our colleagues shared stories about how they are already using AI in their jobs. For example, at CDE Lightband in Clarksville, Tennessee, general manager Brian Taylor described the ways his hometown utility is putting AI to work.

- **Knowledge retrieval:** The CDE team has been feeding their closed AI system records like utility commission minutes, policies, and procedures to save time down the road. It's easier to ask AI when your commission voted to approve something than to have someone spend hours digging through minutes to find the date. Knowledge retrieval can also make it easier to walk ratepayers through their bills, to answer customer questions uniformly, and provide good energy answers to a given set of circumstances presented by a customer.

- **Better tracking and action-prompting from customer sentiment data.** Local large language models transcribe, categorize and conduct sentiment analysis on every call coming into CDE's help desk, providing valuable insights as to which types of customer interactions are most positive and which ones need to be improved or made self-service. The operational efficiency gains include improvements in customer experience, more efficient and effective supervision of customer service staff, and the benefits of real data for training purposes.

- **Machine learning leading to more effective customer communications and program-matching.** Allowing AI tools to segment customers by the load shapes found in their AMI data is helping utilities like CDE identify clusters of use patterns. With this information, utility personnel can more effectively target communications about relevant programs to customers while avoiding unnecessary communications to those who do not share these use patterns.

- **Anomaly detection tools using AI can pinpoint unusual energy usage,** enabling utilities to take proactive steps to improve grid reliability. The CDE team is identifying anomalies that correlate with EV charging and also assessing customer loads and geography to help plan upgrades that will keep the grid stable.

- **System load forecasting.** Supervised deep-learning techniques make it possible for CDE to accurately predict future energy demands and enhance demand response operations. Inputs for load forecasting models include things like temperature, humidity, windspeed, day of week, and recursive system load. Taylor estimates CDE can accurately predict system peaks about 30 percent more accurately with these models, and acting on the information saves around $300,000 per year. In addition, machine learning applied to voltage reduction models has resulted in substantial savings in wholesale power purchases at CDE. Taylor says CDE is tracking to save $1 million this year through more accurate demand prediction.

Tim McCollough, general manager at Rochester Public Utilities (RPU), also shared several AI use cases with which his utility is experimenting. From efficiencies in writing communications, to image and signal processing to strengthen their system, to quality control in handling customer calls, RPU has been using certain aspects of AI and finding it can be a useful tool.

I am guessing that by now, some readers are thinking, "Cool! Sign me up!" Others are saying, "Hmm … I don't know if this stuff will work here in Hooterville, but I'm open to thinking about it." And some of you might searching for a string of garlic and wooden stake to drive into the heart of the AI evil that may befall your noble burg.

For many reasons, AI can sound like a threat that is best left alone. I get it, and so would Brian Taylor and Tim McCollough. Both of them shared their concerns about AI, even as they shared their positive results at the Summer Conference.

You are not wrong to be concerned about the downsides of AI. As with so many innovations in history, this one will be a mixed bag. Some of the most often-cited red flags include:

- **Loss of privacy and lack of data security.** As if the internet doesn't already have enough of our information, AI will dramatically escalate its use and recycling through the giant data systems in the cloud. Inevitably, it will sometimes be compromised.

- **Unethical behavior and cheating.** Since the dawn of time, there have been people who behaved well no matter what, and people who behaved badly. AI is yet another way for this human tendency to manifest itself.

- **Job losses** as writers, graphic designers, and other professionals are replaced by AI models.

- **AI systems that "hallucinate,"** meaning their embedded code sometimes creates "facts" that are not true. For example, I once experimented with having an AI tool write a professional biography for me. Apart from my name and current job, it literally made up a whole different life than the one I had been living.

- **Loss of human reasoning and the ability to think.** AI is good at what it does and getting better all the time. It won't be long before humans across many spheres rely on it to "figure things out" rather than doing it the hard way. That may impact whether humans can think "the hard way" at all.

It sounds scary, doesn't it? Contemplate these downsides too much and you might soon think, "it's not worth it."

I've thought about that quite a lot—and here's the thing.

AI is just the latest transformative technology humankind has invented. It is certainly not the first one that will literally change the human mind, and I doubt it will be the last.

Did you ever think about the world before the printing press? Up until books became widely available, the only way to learn anything was word of mouth and personal demonstration. Average people had phenomenal memories because they couldn't write anything down or look anything up. In ancient Rome, a person could listen in the Senate for hours and then recite the speeches word for word later on the street. When books became available to ordinary people, the capacity of human memories changed forever. Access to books also forever changed the hierarchy and structure of society because shared knowledge upended the distinctions between nobility, clergy, and average folk. Despite this disruption, do we today think of books as scary and evil? Usually not.

Close to the hearts of utility personnel, electricity is another transformative technology that changed humans forever. Prior to electrification, people lived at a slower pace and slept hours longer than they do now—it was dark and cold, so sleep made sense. The commercialization of electricity dramatically increased quality of life for people by providing warmer (or cooler) homes, safer streets, and greater prosperity through extended periods of industry. It also collapsed the natural distinction between night and day, reduced the hours humans sleep, changed their circadian rhythms, and generally contributed to what is sometimes called "the rat race." Yet few people would give it up and go back to the way things were.

These are just two examples of ways that we have "been there, done that" before. In both cases, the changes brought blessings and curses. In my view, we mainly got the blessings and exchanged one curse for another. I'd rather deal with uncomfortable knowledge from books I can read

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Solar dispute

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it have if the USC operates its distributed energy resources (DER) anyway?

At times, the discussion touched on other issues also indirectly relevant to municipal utilities. According to the USC's lawyer, as they pertain to "civil regulatory laws," the electric utility service area boundaries "do not apply within the Upper Sioux Community, nor do they apply with any other tribal nation within this state." Further, he stated "the PUC should acknowledge [the USC's] inherent sovereignty and inform all power producers in the state that they need to negotiate service contracts with the separate tribes."

On the co-op's side, its lawyer stated the co-ops' adopted policies are "consistent with" Minnesota's cogeneration and small power production statute, including the policy that co-op members can only have behind-the-meter generation up to 40kW. Given this is the reasoning behind the co-op's decision to refuse interconnection, that policy itself might be brought up again later in these proceedings. Municipal utilities have a similar authority under the statute to adopt rules "consistent with the rules adopted by the Minnesota Public Utilities Commission."

Prior to the substantive arguments being heard, the co-op argued the preliminary issue of whether the PUC has jurisdictional authority to settle the dispute. The USC argued the PUC has authority to regulate the co-op over the matter. However, the USC asserted, the Community itself, which is a sovereign nation, is not subject to any directives the PUC might make toward it. The PUC passed on the sovereignty question but determined it does have authority over the matter based on Minnesota Statutes §216B.17, which allows the PUC to investigate whether a service standard or practice of a cooperative utility is unreasonable, insufficient, or unjustly discriminatory, or that any service is inadequate or cannot be obtained. The statute allows the PUC to investigate investor-owned utilities more broadly, including their rates, regulations and other matters. With regard to municipal electric and gas

utilities, the statute allows the PUC to "hear, determine, and adjust complaints" . . . "with respect to rates and services upon petition of 10 percent of the *nonresident* consumers of the utility or 25 such nonresident consumers whichever is less."

Easily confused in name with the much larger Minnesota Valley Electric Cooperative, Minnesota Valley Cooperative Light & Power Association has 5,250 members in eight counties with 39 interconnected DER systems. It has a service contract with the USC in place which the co-op believes, along with its utility policies, to be the controlling authorities over this dispute. It is possible the USC will pursue legal court action in parallel with these PUC and OAH proceedings.

CURE's goal in the hearing was to convince the PUC to refer the complaint to the Tribal Advocacy Council on Energy (TACE) prior to further referral, so that TACE may help contextualize the dispute. The PUC did not include referral to TACE among its adopted decision items.

The statute allowing the PUC to investigate complaints made by certain groups does not include complaints made by tribal communities. However, it does allow the PUC to investigate complaints "on its own motion," which is the basis upon which the PUC moved the process forward.

Babies, old folks, and artificial intelligence

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than the ignorance of not knowing. I'd rather lose a little sleep than be doomed to sitting in the dark and cold for eight months of the year.

In the case of AI, its "new" threats are just scary, unknown versions of old threats. Loss of privacy used to mean a peeping tom sneaking around your house or someone listening in on the party line. Data insecurity happened when someone stole mail out of your mailbox or forged a check. In my day, cheating meant getting some other kid to do your homework or copying off their paper. Now a prompt into ChatGPT can accomplish the dishonesty. Job losses due to AI are the just the latest version of "machines will take my job" that started in the industrial age. Yes, as has happened before, many workers will have to retrain. Often the AI-produced art, music, graphics, and poetry will be of low quality compared with what a human can do, just as IKEA furniture is vastly different from a solid wood piece crafted by a skilled carpenter.

I don't mean to minimize the impact or "scariness" of AI. But I am a practical person. AI is here, and it's not going away. Think of it like a high voltage wire. It's inherently dangerous, but with passionate curiosity, effective training, and a safety culture approach, AI can do for us what books, electricity, and the internet did. Open new worlds, provide new insights, and improve the quality of our lives.

All of which brings me back to where I started. I challenge you to "be a good eater" when it comes to AI. It's all around you. If you are Googling, you are using AI. Siri and Alexa are using AI. Gmail and Outlook are both using AI to catch junk mail, and Microsoft is offering its Copilot tool to help you try a little taste of this new food group. Rather than being a "finicky eater" and trying to avoid AI, commit yourself to taking in what is available from comparatively safe sources such as these. Learn about it. Be curious about how you might be able to harness it for your utility—and don't overlook the joy in processing it and getting rid of the waste that doesn't make sense for your situation. Not everything you "eat" will agree with you.

I feel sorry for my younger relatives taking care of me when I'm old. Will they still care about my eating and eliminating habits when they find out I've spent their inheritance on good books and root beer while I still can? AI can offer me a list of books and a recipe for root beer—but it can't take care of me in my old age. It cannot replace compassion, humor, and a genuine interest in another human being … and that—the fact that human relationships will always matter more than tools like AI—is the most important lesson of all.

Floods, fire, and ice

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weather continues, the system needs to be hardened," Willitts adds. He thinks the solutions will include elements such as more underground lines, steel poles instead of wood poles, and possibly replacing 25-kV transformers with 50-kV transformers in some areas.

Willetts is actively engaged on MMUA members' behalf at the national level across diverse segments of the public power sector, and he serves as vice chair of the American Public Power Association's (APPA) national Mutual Aid Committee. He believes that weather resilience plans may potentially be mandated at the federal level for utilities at some point. Such plans should include strategies for handling load growth resulting from increased air conditioning demand, as well as addressing the impact of excessive heat and extreme weather.

Recent extreme weather events, such as the 2025 California fires, were discussed at the workshop. Willetts emphasized that the varied regions across the nation must prepare for different challenges. On the East Coast, hurricane preparedness is essential. In the Midwest, utilities must consider snow and extended periods of extreme cold in addition to the hot, humid summer days. When planning, utilities must account for these diverse factors.

Key takeaways

In reviewing the observations and expertise of the many utility-focused attendees gathered at Argonne for the workshop, Willetts identifies the following ideas that utilities should incorporate into their planning.

- Understanding and evaluating the utility's current resilience efforts is a crucial first step in identifying where to best focus improvements.
- In a mature system such as the American grid, utilities must incorporate climate resilience into all plans, program guidance, and standardized operating procedures. In addition, utilities must have protocols for regularly updating these plans, both as part of an update schedule and when circumstances indicate they are needed.
- Developing and adopting a climate resilience plan is a vital step in recognizing the resilience challenges a utility might face. The plan will help in selecting the most cost-effective strategies to address these challenges.
- Reviewing the job descriptions and/or talent profiles of staff with regard to resilience roles and adding resilience responsibilities is an excellent way to ensure staff prioritize the utility's resilience efforts.
- Staff training and professional development activities are key to preparing employees for resilience roles within the utility.

Blackout restoration

Some Minnesota towns are in a rare position most US states cannot match. There are 63 MMUA member utilities capable of isolating their town from the transmission grid and producing their own power on at least a short-term basis. This gives them an edge in their weather resilience strategies, enabling quick recovery from power outages because these systems are available and can be disconnected from the main transmission system.

Areas prone to blackouts could benefit from local generation, but even if a community wants it, developing it can't happen overnight. Regardless of whether local generation is possible, every utility should have a blackout restoration plan that takes all potential scenarios into account and prepares for how you will get the lights back on in the most efficient way.

The Midwest Weather Resilience Workshop at Argonne Labs highlighted the importance of staying weather-aware and prepared. As extreme weather and rising temperatures continue to impact communities and challenge power systems, utilities must develop comprehensive contingency plans. It is an investment in the community as much as in the grid.

Minnesota's next generation of utility workers

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Isaac Lazaro

Alexys Schmidt

Garret White

Isaiah Zajac

Andrew Hoheisel

December 2024, the scholarship aims to attract and support the next generation of professionals to Minnesota's municipal utilities.

In the 1990s, MMUA introduced its Tom Bovitz Scholarship to promote visibility and appreciation of municipal utilities. However, with the evolving needs of the industry and the changing job market, this year's relaunch reflects current trends and needs in the utility space. The new scholarship program is open to any individual who is pursuing a career in the utility sector. In time, MMUA hopes to grow the program through fundraising and other strategies so the Association can better support members' workforce development needs and build awareness of the many municipal utility career paths among workers of all ages.

A calling to serve and restore

The 2025 Utility Workforce Scholarship recipients were inspired by the visible impact of utility work, especially during emergencies. Isaac Lazaro recalls the day a snowstorm knocked out power at his grandmother's house. "I remember thinking how cool it was that they were out there helping people, no matter how bad the weather was. Ever since then, I've always wanted to do that. It just feels like the right job for me," Lazaro says.

Lazaro spent several years in the construction industry, where he learned the values of hard work and community service. After attending a utilities meeting in Albert Lea and talking with one of his father's friends who was a lineworker, he felt called into the field. That connection led him to Minnesota West Community and Technical College to pursue Line School this fall.

Similarly, Alexys Schmidt from Jordan, Minnesota, discovered her passion while working part-time at the City of Chaska Electrical Department. That summer job opened her eyes to the vital role lineworkers play in keeping a city running. "The idea of helping restore and maintain power in communities when storms occur, or even just maintaining systems in general, gives me a strong sense of purpose in the field," Schmidt says.

Learning by doing

These students are not just inspired—they are already immersed in the work. Schmidt recently began an 11-month program at Dakota County Technical College. "At school, we are on the pole, learning how to build structures and set up a line. When I go to work, I now have a better understanding of the work the apprentices and journeymen are doing in a bucket," she says.

Garret White, who is attending Minnesota State's lineman program, shares that enthusiasm for learning. White is excited to understand the poles he drives by every day. Growing up in New London, one of his neighbors worked for Great River Energy for over 34 years and always spoke highly of the industry. White, who enjoys being physically active and outdoor activities, says he cannot imagine doing anything else for a living.

Inspired by role models

Family and mentors play a major role in shaping these students' career paths. Isaiah Zajac, whose father works for Moorhead Public Service as an underground utility locator, grew up respecting the hard work behind the scenes. "It's the kind of job where you know you are doing something that matters even if people don't see it," Zajac said. He plans to start working immediately after completing his certification at Minnesota State Technical College.

Andrew Hoheisel is also planning to attend Minnesota State's Line School. Inspired by his father, he felt a natural pull toward this field. His father was a major role model in his life who became a lineworker. Like many of his peers, he enjoys hands-on work and helping others.

Hoheisel finds the work applicable to many things in life and enjoys his current position with Xcel Energy. "I think I'm a lot better at it than [I would be] sitting at a desk job. I find it pretty cool what people can do with it," said Hoheisel.

A shared sense of purpose

Whether it is restoring power during a storm, learning the ropes on the job, or following in their mentors' footsteps, these scholarship recipients are united by a common goal: to do meaningful, hands-on work supporting their communities. As Lazaro noted, "I think that's pretty cool because it means the people working there are really helping out their neighbors, and that's something I'd be proud to be a part of."

The program

The scholarship recipients understand the vital importance of becoming utility workers. Whether performing maintenance on a pole or restoring power after a devastating storm, these young workers are eager to help their communities.

The MMUA Utility Workforce Scholarship is explicitly designed for individuals pursuing careers in the utility sector, including lineworkers, gas operators, water and wastewater operators, and other specialized utility roles. By offering financial assistance and career development opportunities, the program seeks to reduce barriers to entry, especially for underrepresented groups, students, and working professionals looking to advance their skills.

Originally introduced to raise awareness and appreciation for municipal utilities, the scholarship has been updated to reflect the industry's evolving needs. The relaunch expands eligibility to a broader range of utility careers and incorporates current trends and technologies, encouraging more people to explore rewarding futures in the utility field.

This year, MMUA received 10 scholarship applications from individuals pursuing careers from electrical work to water utilities. MMUA, through its Workforce Development Task Force, is committed to expanding this reach in the years ahead. By growing awareness of the field and access to the scholarship program, MMUA hopes to inspire more applicants and strengthen the future workforce of Minnesota's municipal utilities.

A shift in the utility workers

The MMUA Utility Workforce Scholarship comes at a pivotal time. The utility sector is experiencing a workforce shortage that is proving challenging for everyone, especially smaller utilities in more rural areas. Meanwhile, industry reports and anecdotal information from MMUA members reveal a significant portion of the workforce is nearing retirement age, while many young people remain unaware of the diverse and fulfilling career paths available in utilities.

These five outstanding scholarship recipients are eager to build their careers in the utility industry. Their passion and commitment represent the future of this essential sector.

Knowing individuals such as Alexys Schmidt, Garret White, Andrew Hoheisel, Isaac Lazaro, Isaiah Zajac are exploring careers in the utility sector makes the uncertain future more hopeful. Schmidt summed it up clearly: "I love the people I work with. I love the job. I love serving the community."

Will the courts allow bans on natural gas?

A municipal town in Illinois is firmly advancing its efforts to enforce its requirement that new structures be 100 percent electric, despite ongoing legal challenges from trade and real estate groups.

Oak Park's bold move to ban natural gas is aligned with its ambitious climate change goals and its commitment to achieving net-zero greenhouse gas emissions by 2050.

The city's initiative reflects a broader national trend. Oak Park is one of the leading municipalities in the United States to pass an electrification ordinance, effectively banning natural gas in new commercial and residential buildings. Cities in California and New York have implemented similar measures, but Oak Park stands out as the first in the Midwest.

The ordinance, approved in June 2023, took effect January 1, 2024. Fossil fuels, including natural gas, are permitted only for emergency backup power and commercial kitchens.

The ordinance has encountered challenges, however. The Clean Energy Coalition, comprising the National Association of Home-builders, NPL Construction Company, and the International Union of Operating Engineers, has filed a lawsuit, claiming the natural gas ban imposes costs on consumers, leads to job losses, and infringes on individual choice. They argue the ban violates the federal Energy Policy and Conservation Act (EPCA), which establishes national energy efficiency standards and restricts local governments from regulating appliance energy use.

Historically, similar legal battles have occurred across the US. For example, Berkeley, California's pioneering natural gas ban was challenged in a lawsuit brought by the California Restaurant Association in 2021, and it began repealing the ordinance in 2024. In that case, the Ninth Circuit Court of Appeals ruled the Berkely ban preempted by the EPCA.

Conversely, in New York, a recent court decision upheld the state's ban, ruling it does not violate the EPCA because it does not directly regulate appliance energy use.

These contrasting rulings highlight the increasing tension between federal energy policies and local climate initiatives. Advocates assert electrifying new buildings is a powerful strategy to significantly reduce greenhouse gas emissions. Meanwhile, labor unions and builders emphasize the need for flexible approaches to avoid economic harm.

As more government entities consider similar laws and ordinances, federal courts are likely to play a crucial role in shaping the future of local energy regulations and advancing the nation's climate goals. In Minnesota's recent legislative sessions, attempts have been made both to create a path to banning natural gas and to banning bans on natural gas. In addition to the courts, voters will have a say in what happens regarding the future of this resource.

Global electricity demand surge expected through 2026

Despite prevailing economic uncertainties, the International Energy Agency (IEA) anticipates robust growth in global electricity demand through 2026.

This demand surge stems from an increasing reliance on electricity across various sectors, including manufacturing, household appliances, air conditioning, data centers, and electric vehicles (EVs).

How much will energy consumption rise?

The IEA's Electricity Mid-Year Update reveals that global electricity consumption will rise by 3.3 percent in 2025 and 3.7 percent in 2026, significantly outpacing overall energy demand growth during the same timeframe. These figures highlight a slight moderation from the remarkable 4.4 percent increase the market recorded in 2024, yet they remain notably higher than the average growth rate of 2.6 percent logged from 2015 to 2023.

Renewables surging to the top

A critical factor in this evolving energy landscape involves the anticipated shift in electricity generation sources. The report indicates renewables will soon surpass coal as the primary source of global electricity by 2025 or 2026, depending on weather patterns and fuel price fluctuations. In addition, reactor restarts in Japan, sustained nuclear production in the United States and France, and new nuclear projects primarily in Asia will drive nuclear energy output to record levels. Furthermore, the increasing reliance on gas-fired power will continue to displace coal and oil in numerous regions.

These developments will contribute to stabilizing carbon dioxide emissions from electricity generation, with a plateau expected in 2025 and a slight decline forecasted for 2026. However, shifts in weather and economic conditions will still influence the trajectory of emissions.

More infrastructure needed

IEA's Director of Energy Markets and Security, Keisuke Sadamori, noted the resilience of electricity demand amid economic challenges. He emphasized the necessity for ongoing investment in grid infrastructure, energy storage, and flexible energy solutions to ensure evolving power systems can meet rising demand securely and affordably. "The growth in global electricity demand is set to remain robust through 2026, despite an uncertain economic backdrop," Sadamori stated.

Emerging economies in Asia will play a pivotal role in this growth, with China and India expected to account for approximately 60 percent of the anticipated increase in global electricity consumption during 2025 and 2026. Growth rates will likely accelerate to 5.7 percent in China and 6.6 percent in India next year.

Google search results in $3 billion clean energy deal

Alphabet, Google's parent company, has signed a $3 billion, 20-year deal with Brookfield Asset Management for hydroelectric power generated by two facilities in Pennsylvania.

The deal is the largest corporate contract for clean energy powered by hydroelectricity in the world.

Under the agreement, Alphabet will initially access 670 megawatts of hydropower with the potential to scale up to three gigawatts as Brookfield brings additional generation online. The dispatchable hydroelectric energy will help the tech giant meet its goal of operating completely on carbon-free energy by 2030.

A growing world

In an era where electricity demand is at an all-time high, many tech companies are seeking clean energy to power artificial intelligence, data centers, and cloud computing. According to a report from the Energy Information Administration, power consumption in the US has again reached record levels after nearly two decades of stagnation.

Providers of many renewable sources, like solar and wind, have historically struggled to secure large corporate clean energy deals due to concerns about reliability. Alphabet's 20-year power purchase agreement (PPA) with Brookfield marks a significant milestone for these agreements by relying on reliable, dispatchable, clean energy produced by hydropower.

Meanwhile, Google and another Alphabet company, Tapestry, have been working on another agreement in the region. This one is with PJM, the country's largest grid operator, which serves 13 eastern states and the District of Columbia. The PJM deal will use Google-powered AI to accelerate the review and planning processes for new generation projects. The goal is to cut down on the time it takes to bring new power plants online, which will both stabilize and support the entire PJM grid for its customers and help Google achieve its power goals in the region as well. That energy will be needed for the data centers Google plans to build in the region. Sources say the company will spend around $25 billion in Pennsylvania and neighboring states over the next two years.

In a statement, Google indicated plans to eventually expand the deal beyond East Coast sites into other parts of the Mid-Atlantic and even the Midwest in the future.

Implications for Minnesota

Minnesota has potential for future clean energy expansion, supported by its 2023 Carbon-Free Standard and numerous clean energy initiatives. More than 30 percent of its power is generated from renewable sources, aligning with Google's sustainability and AI infrastructure goals.

The Minnesota Energy Alley program, a collaboration among the Minnesota Department of Commerce, Clean Energy Minnesota, and Grid Catalyst, supports startups capable of modernizing the grid. Due to the state's active engagement in clean energy innovation, these startups may attract major companies such as Google for power sourcing. While hydropower in Minnesota may be more limited than in Pennsylvania, the state has much to offer in the way of innovative approaches.

Currently, Grand Rapids Public Utilities is working with Enspi, a startup in the Energy Alley Program. Based in Minneapolis, Enspi develops AI-enabled software to improve utility management, efficiency, and cybersecurity. This partnership could pave the way for other utilities to collaborate with AI companies and enhance grid integration.

Conclusion

Google's landmark hydroelectric PPA signals a shift in how tech giants source clean, reliable energy to power the growing future of AI. With Minnesota's notable clean energy goals and initiatives, the state stands out as a potential candidate to be a player in big tech's expansion into the Midwest. Minnesota could play a pivotal role in shaping the next chapter of sustainable tech infrastructure.

Fossil fuels and geothermal energy: An uncommon pairing

North Dakota is actively exploring innovative ways to integrate geothermal energy with its existing fossil fuel infrastructure.

Recently, the North Dakota Industrial Commission approved a $250,000 feasibility study under Senate Bill 2360, focusing on two methods to generate geothermal energy.

An innovative approach

North Dakota research officials are investigating pairing geothermal with active oil and gas sites, using captured carbon dioxide as a feedstock for geothermal power production. These new studies mark a significant shift in geothermal energy research.

Chord Energy and Gradient Geothermal, already operating in North Dakota, use innovative technology developed by Gradient Geothermal. This Denver-based company's technology extracts heat from produced fluids and converts it into electricity.

Since oil and gas wells already reach deep underground where temperatures are high, instead of drilling new geothermal wells, recent research is exploring how to retrofit existing oil and gas infrastructure to extract this heat. The heat captured from the ground can then be converted into geothermal energy.

This method reduces drilling costs, extends the lifespan of oil and gas fields, and is supported by federal tax incentives for geothermal and carbon capture and storage (CCS) projects.

Geothermal's future

The potential for geothermal energy is now greater than ever, supported by the current administration. During the recent signing of the One Big Beautiful Bill, the 45Q federal tax credit was preserved after concerns it might be eliminated. The Section 45Q tax credit is part of the US federal tax code, which provides financial incentives for capturing or using carbon dioxide.

According to Drew Nelson, vice president of programs, policy, and strategy at Project InnerSpace, interest in new geothermal energy methods is gaining momentum across the political spectrum. Environmental advocates see geothermal as a promising low-carbon energy source, while supporters of fossil fuel development appreciate its technical similarities to oil and gas drilling. This common ground helps build broader support for geothermal innovation.

However, projects exploring new ways to produce geothermal energy are still limited. In 2023, only 0.4 percent of the nation's energy came from geothermal sources, according to the US Energy Information Administration. Nelson noted investors are waiting for the technology to become more reliable and thoroughly researched. North Dakota's efforts in this area are therefore significant.

While Minnesota does not have as many fossil fuel structures as North Dakota, there are some decommissioned industrial sites and deep wells that could be studied in comparable ways. It might benefit the state if decision makers choose to explore CCS projects as Minnesota moves toward its 2040 clean energy goal.

North Dakota's innovative geothermal research marks a major step forward in geothermal energy use. Leveraging existing infrastructure and tax incentives provides strong motivation beyond the benefits of directly tapping clean energy from the ground.

Isn't that special...

By Kent Sulem, Director of Government Relations

The First Special Session of 2025 is fading into memory, and between state revenues exceeding expectations and many of the feared federal cuts in aid payments being pushed off until 2027, the likelihood of a second special session is now very low.

But that doesn't mean things involving the legislature won't be special. After seeing three special elections during the regular session, three more are teed up for this late summer into fall.

The first special election will be held in District 34B and is to fill the seat of former Speaker of the House, Rep. Melissa Hortman, who was murdered in June. The primary for this special election will have passed (August 12) by the time this issue of *The Resource* has gone to print, but the election itself is scheduled for September 16. The seat is considered a fairly safe DFL seat, but special elections don't always follow the script. Until the election is certified, Republicans hold a 67–66 lead, the same as they did at the start of the 2025 regular session.

Should the Republican win the special election, that party would gain full control of the House with a 68–66 majority. This would likely mean a restructuring of committees and the end of co-chairs. It would solidify Speaker of the House Lisa Demuth's position, and it would likely see Rep. Harry Niska appointed as the House Majority Leader and Rep. Jamie Long's shift to Minority Leader. Rep. Hortman's title of Speaker Emerita was one of respect, but it is not an actual office and thus won't be filled. On the other hand, if the DFL holds the seat, the House will return to a 67–67 tie as it was for most of the 2025 Regular Session and all of the First Special Session.

The next two special elections will be held on the same day but in different districts. Both are for Senate seats. One will be in District 29 to fill the vacancy created when Sen. Bruce Anderson, a 30-year veteran of the legislature, died unexpectedly in July. This is a solidly safe Republican seat, and so, barring one of the upsets of the century, the outcome will have no impact on the makeup of the Senate. The second election will be in District 47, and it is to fill the vacancy created when

Sen. Nicole Mitchell resigned after being found guilty of two felonies related to her arrest for breaking into her stepmother's house back in 2024. This contest will be watched closely. While the district has leaned towards the DFL in recent years, the Republicans will work hard to flip the seat, which would then give the Republicans a 34–33 majority in the Senate, ending the DFL's control of the body. If the DFL holds the seat, they will retain the majority at 34–33.

These two special Senate elections have an August 28 primary date, and a November 4 general election. Until these elections are certified, the DFL holds a 33–32 majority.

And the fun won't necessarily end here. Both candidates seeking the Distrct 47 Senate seat are DFL members of the House. If either of them was to win that race in an upset, their House seat would become vacant, resulting in the need for another special election to fill that vacancy. In addition, depending on how the special election in District 34B goes, a new special election on one side of District 47 could be for control of the House.

Meanwhile, two DFL Senators have filed to run for Mayor in their respective home cities, both of which hold their city elections in the odd-numbered year. If either or both of them were to win their Mayor's race, special elections would be needed to fill the vacated Senate seat(s). However, as one of the seats is in the heart of Minneapolis and the other in St. Paul, the DFL would overwhelmingly be favored to hold the Senate seats, thus rendering no change in the Senate's partisan makeup.

For those keeping score, all of this means that—assuming no further vacancies occur—Minnesota could be in position to have held nine special elections between the start of the 2025 Regular Legislative Session and the start of the 2026 session. That would set a new state record for the number of special elections held during a legislative biennium.

Finally, MMUA has no further updates on the potential impact of the One Big Beautiful Bill, a bill many find special, but time will tell regarding its actual impacts in Minnesota and the broader utilities industry.

Minnesota finalizes Paid Family and Medical Leave rules and updates ESST

By Shelly Dau, Director of Organizational Development and Human Resources

Minnesota's Paid Family and Medical Leave (PFML) program is officially set to launch on January 1, 2026, following the publication of final administrative rules by the Department of Employment and Economic Development (DEED) on June 16, 2025.

The program, which was passed into law in 2023, aims to provide job-protected, partially paid leave for qualifying family and medical reasons.

Most Minnesota employers with one or more employees are subject to the PFML law, with exceptions for tribal and federal employees and self-employed individuals who opt out of the program.

Key features of the PFML program

- **Leave entitlement:** Eligible employees can take up to 12 weeks of medical leave and 12 weeks of family leave per year, with a combined cap of 20 weeks in a 12-month period.
- **Covered reasons:** Family leave includes bonding with a new child, caring for a seriously ill family member, addressing safety concerns related to domestic violence, and supporting a family member on active military duty.
- **Wage replacement:** Benefits are paid by the state and funded through payroll premiums shared by employers and employees.

Highlights of the final rules

The final rules, adopted after the 2025 legislative session, clarify several operational aspects of the program.

- **Seasonal employees:** The rules clarify eligibility for seasonal workers by defining the duration and nature of employment that qualifies. Most seasonal workers for municipal utilities are covered under PFML, provided they work at least 90 days, make at least $3,700, and experience a qualifying event. Seasonal employees in industries like hospitality or agriculture may be exempt if they work fewer than 150 days in a year.
- **Voluntary coverage:** Individuals who are not automatically covered—such as self-employed workers and independent contractors—can opt into the program. They must commit to a minimum participation period and pay premiums like those paid by employers and employees in the standard program.
- **Employer notification:** Employees are required to notify their employers of their intent to take leave within specific timeframes—typically 30 days in advance for foreseeable leave, or as soon as practicable for emergencies. Documentation, such as medical certification or proof of qualifying events, must accompany the request.
- **Fraud and overpayments:** The rules establish procedures for identifying and addressing fraudulent claims. This includes suspending benefits during investigations and mechanisms for recovering overpayments, whether due to error or intentional misrepresentation.
- **Intermittent leave:** Employees may take leave in non-consecutive blocks (e.g., a few days a week), provided it's medically necessary or appropriate for caregiving. Employers may require documentation and reasonable notice, and the leave must be tracked accurately to prevent misuse.
- **Private plans:** Employers can apply to use a private plan instead of the state-administered program, but the private plan must offer equal or better benefits and protection. Approval from the Department of Employment and Economic Development (DEED) is required, and employers must demonstrate compliance through regular reporting.
- **Small employer grants:** Financial support is available to small businesses (typically those with fewer than 50 employees) to help offset the costs of covering employees on leave. Grants may be used for temporary staffing, training, or wage replacement.
- **Safety leave:** The rules include specific provisions for leave related to domestic violence, sexual assault, or stalking. This ensures that employees can take time off to seek medical attention, relocate, attend court proceedings, or access support services without jeopardizing their employment or income.

Similar language for safety leave exists under the ESST law. For more information, please visit https://mn.gov/deed/paidleave. There is also a helpful side-by-side comparison in the "Publications" section under the "About Us" menu.

Employer responsibilities and deadlines

- **Notice requirement:** By December 1, 2025, employers must post a notice (provided by DEED) in a visible location and distribute written information to employees about the program.
- **Payroll deductions:** These begin January 1, 2026.
- **Premium payments:** First quarterly premiums are due April 30, 2026.
- **Premium rate:** The state has set its premium rate at 0.88 percent of taxable wages for 2026, although employers may use a private plan (see above) and experience lower premiums. The cost of premiums may be shared between employers and employees. If employers withhold premiums from employees, the employees may be charged up to 50 percent of the actual premium or .44 percent, whichever is lower.

What's next?

Employers should begin preparing now by updating policies, budgeting for premiums, and educating human resource teams. DEED will provide templates and resources to support compliance, and additional guidance is expected through webinars and FAQs in the coming months. For additional information, go to https://paidleave.mn.gov.

ESST changes

In June 2025, Minnesota made several amendments to its Earned Sick and Safe Time (ESST) law, effective July 1, 2025. These changes clarify notice and documentation requirements and allow for voluntary shift trading.

Here's a breakdown of the key changes:

- **Notice requirements:** Employers can now require employees to provide notice for unforeseeable ESST usage "as reasonably required." This replaces the previous "as soon as practicable" standard.
- **Documentation requirements:** Employers can request reasonable documentation for ESST use after two consecutive scheduled workdays, reduced from the previous three days.
- **Shift trading:** Employees can now voluntarily seek or trade shifts with coworkers to cover time off used under ESST, but employers cannot require them to do so.
- **Advancement of ESST:** Beginning January 1, 2026, employers can provide ESST to employees before it is actually earned, based on anticipated hours. However, if an employee works more hours than estimated, the employer must reconcile the advanced hours and provide additional ESST to ensure the employee receives the correct amount based on actual hours worked.
- **ESST vs. other leave:** Employers can limit the use of other paid leave for personal illness or injury to the available ESST or 160 hours, whichever is less, but cannot require employees to use ESST before other available paid leave. For longer term qualifying events, the PFML law provisions would apply.

Fossil fuels beat out renewables in Georgia

The Georgia Public Service Commission recently voted to approve Georgia Power's long-term energy plan allowing the utility to acquire a large amount of new fossil fuel-generated capacity to meet the rising power demand.

Georgia Power's plan marks a shift away from renewable energy and toward fossil fuel energy production.

Over the next few years, Georgia Power expects increasing power demand as data centers arrive in Georgia, similar to other states. Its Integrated Resource Plan (IRP) includes 8,500 megawatts (MW) of new energy capacity, mostly from new methane gas-burning plants. Georgia Power has already applied for six air permits to build the fossil fuel units.

Critics voice their concerns

However, no new data centers are scheduled to sign on as Georgia Power customers this year. Critics say the utility's plans are based on speculation and violate its initial promise to expand demand-side management programs to help customers reduce their energy use and bills. The plan also reverses commitments to retiring coal plants by extending the coal plant operations to support the new load growth.

Critics also claim the IRP details more than 1,000 miles of new transmission lines and billions of dollars in infrastructure investments, with almost no transparency on the cost allocations.

"This is an incredible blow to Georgia Power's credibility," says Codi Norred of Georgia Interfaith Power and Light.

Georgia Power, the state's largest power company, serves more than 2.7 million customers and has a major impact on the grid. In recent years, Georgia Power has phased out fossil fuels, decommissioning numerous coal plants.

The dilemma hits Minnesota, as well

Minnesota is facing similar issues with energy demand and new data centers. Companies such as Xcel Energy and Great River Energy are scrambling to address 2,300 MW of new demand from customers in their service territories.

Unlike Georgia, Minnesota is bound by the 2023 carbon-free mandate. As utilities serving our state plan to be 100 percent carbon-free by 2040, they may not

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House Committee introduces FEMA reform bill

In Washington, D.C., leaders of the House Transportation and Infrastructure Committee have introduced bipartisan legislation that aims to carry out the most significant Federal Emergency Management Agency (FEMA) reforms in decades.

The FEMA (Fixing Emergency Management for Americans) Act of 2025 seeks to simplify the disaster response process. Committee Chairman Sam Graves (R-MO) stressed that Americans need an emergency management system that operates swiftly, rather than one that hampers disaster recovery.

Rep. Graves said, "FEMA is in need of serious reform, and the goal of the FEMA Act of 2025 is to fix it. This bill does more than any recent reforms to cut through the bureaucracy, streamline programs, provide flexibility, and return FEMA to its core purpose of empowering the states to lead and coordinate the federal response when it's needed."

The American Public Power Association (APPA) supports these efforts, endorsing most of the bipartisan bill (HR 4669) in a letter to the committee, specifically backing a provision to expedite public assistance claims after emergencies. For example, APPA specifically supports the agency moving from the current cost-based reimbursement model provided for permanent work under Stafford Act Section 406, to an estimate-based method provided under proposed Section 409.

APPA contends that the issues with the current FEMA Act stem not from under-reimbursed communities, but from disputes over procurement processes. Even if the spending was reasonable and effective, FEMA can "de-obligate" or claw back funds if procurement rules are violated.

The proposed new system aims to streamline the grant process by allocating funds per project rather than basing grants on a facility's prior condition. It also recommends using cost estimates from licensed professionals and permits funds for repair, restoration, reconstruction, or replacement of facilities.

Additionally, APPA welcomes the Committee's decision to ensure reimbursements for emergency work and debris removal occur within 120 days of a request, provided at least 9 percent of the estimated costs are eligible. This dramatic proposal could further accelerate the federal reimbursement process. The proposed legislation would also shift FEMA from the Department of Homeland Security to a cabinet-level entity, an approach that already enjoys bipartisan support in the House of Representatives.

APA also endorses the House's proposal to provide consistency in procurement practices, supporting decisions to allow local governments to use these standards during disaster relief. To simplify and streamline the reimbursement process for getting the power back on when disaster strikes, the Association believes the FEMA Act could be a step in the right direction, and could see Committee action when Congress returns in September.

Water contamination: are Minnesota's fish safe to eat?

One problem remains consistent across many of the lakes and rivers in Minnesota: high levels of mercury are present in the water.

This is especially true in northeastern Minnesota, where more than 500 lakes—100 in the Boundary Waters alone—are considered impaired by unsafe mercury levels in fish. Statewide, more than 1,500 lakes and rivers statewide are considered impaired for mercury.

While Minnesota's drinking water standards and the utility professionals who make sure they are maintained protect most citizens from ingesting dangerous levels of mercury, anglers and those who eat their catches need to pay attention to this issue. Residents are advised not to eat fish from impaired waters more than once a week. Children and pregnant women should skip it altogether since mercury can be especially dangerous for youngsters and the unborn.

It's not new, but it's a problem

Mercury has existed for ages, and its harmful effects have been well-documented. Several factors contribute to mercury pollution in Minnesota's fish, including invasive species, climate change, and sulfate released by mines and industries. The toxic element enters Minnesota's waterways from forest fires or the emission of fossil fuels into the air by power plants and vehicles. Many taconite basins in the state release sulfate, which binds with mercury and transforms it into the toxic methylmercury that accumulates in fish.

Efforts to reduce lake pollution have resulted in a two-thirds reduction in mercury emissions over the past 20 years. Despite these efforts, mercury accumulates in the water and on lake bottoms, so contamination is still worsening even after years of mandates to reduce industrial emissions. For example, in Basswood Lake near Ely, 80 percent of walleye and northern pike samples exceed the safe mercury threshold. Further northeast, fish samples from Crane Lake in Voyageurs National Park recently showed mercury levels three to seven times above the safe limit.

For the past decade, volunteer water monitors have sampled lakes downstream from two major taconite mines emitting sulfate, Minntac in Mountain Iron and Northshore Mining outside of Babbitt. The monitors detected elevated sulfate levels miles downstream in lakes within Voyageurs and Boundary Waters, where sulfate levels are typically low.

A map from the Minnesota Pollution Control Agency's 2024 Impaired Waters List shows lakes in Aitkin, Carlton, Cook, Itasca, Koochiching, and St. Louis counties with especially unsafe mercury levels.

Regulations designed to help

In 1990, Congress passed amendments to 1970's Clean Air Act. Among the provisions in the 1990 law, the US Environmental Protection Agency (EPA) was directed to set mercury emission standards for taconite plants by the year 2000. But the EPA never did that, and stakeholders including tribes, environmental groups, and the state of Minnesota pushed the EPA to take action. Those efforts culminated, finally, in the EPA's 2023 rule requiring the six taconite processing plants located in northeastern Minnesota to cut their emissions by 57 percent by the end of 2026. Meanwhile, the State of Minnesota has a 2025 target for reducing the amount of mercury released from Minnesota smokestacks by 76 percent from 2005 levels.

For various reasons, progress toward these goals has been lagging compared with the hoped-for timeline. Still, some forward movement had been occurring when the Trump administration announced in July 2025 that it was officially extending the deadline for taconite mines to

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Minnesota's fish

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cut their mercury and sulfate emissions. The administration has also indicated it may roll back the requirement more substantially or even entirely in the months ahead. Consequently, if the problem is to be mitigated, efforts to do so likely won't be abetted by federal mandates in the immediate future.

Other paths

Spokespersons for the mining companies say the technology doesn't yet exist to remove mercury from taconite mining processes. Officials from the EPA and the Minnesota Pollution Control Agency believe preventing mercury from entering the waters through mining operations is possible but expensive, citing price tags in the hundreds of millions of dollars over the next 10 years to make a serious dent in the problem.

Meanwhile, researchers at the University of Minnesota are looking at other ideas. For example, they have studied mercury in the water extensively and, in recent controlled lab experiments, they have been genetically engineering minnows. The researchers hope these tiny fish will carry a gene that emits mercury back into the atmosphere and, when other fish will eat these minnows, the bigger fish will also fail to accumulate mercury. If successful, that would help more mercury from accumulating, but it would not address the high concentrations of mercury currently sitting on Minnesota's lake bottoms.

Unfortunately, there is no way to completely eliminate mercury from Minnesota's lakes for good. Mercury pollution in Minnesota's waters is a complex issue rooted in decades of industrial activity, environmental change, the inherent nature of Minnesota's waters and fish, and regulatory challenges. While progress has been made, the persistence of mercury in fish and water continues to pose a threat to ecosystems, public health, and tribal communities.

The bottom line: be careful when fishing and make sure your catch is safe to eat for the foreseeable future.

The crude truth about an oversupplied oil market

In its July 2025 "Oil Market Report," the International Energy Agency (IEA) forecasted a continuing global oil supply glut through 2026, as production growth outpaces demand.

While this may provide a short-term reprieve for utilities, particularly those relying on fuel oil, the oversupplied oil market warrants some caution.

Does supply exceed demand?

The IEA projects global oil supply will increase by roughly 2.1 million barrels per day in 2025 and another 1.3 million barrels per day in 2026. Meanwhile, demand growth is forecast to be just 0.7 million barrels per day in 2025, its slowest pace since 2009, excluding the COVID-19 slump, and 0.72 million barrels per day in 2026. Although non-OPEC+ countries—particularly the U.S.—lead the output surge, rising OPEC+ output targets also contribute to the growing oil supply.

Implications for municipal utilities

With oil prices generally easing due to excess supply, utilities relying on oil or diesel for peaking power or backup generation may temporarily benefit from reduced fuel costs. Yet, market volatility remains: any OPEC+ production cutbacks, geopolitical disruption in Ukraine or the Middle East, or sudden demand fluctuations could disrupt the apparent surplus.

Seasonal pressures

Even as crude supply outpaces demand, refinery output is peaking for the summer with a 3.7 million barrels per day increase forecast from June through August, while crude oil burn for power generation also doubles for the season. These trends have supported refining margin improvements, but they may also mask the fragile supply balance.

Priorities for utilities

- Review hedging strategies. With prices softening, municipals should assess whether forward contracts (agreements on a future price), fuel-price collars (establishing a price ceiling and a price floor level), or storage commitments remain advantageous, or if exiting some agreements could yield savings.

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Fossil fuels beat out renewables in Georgia

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have the option of keeping coal plants online and building new fossil fuel-generated facilities.

Xcel Energy asserts it will accommodate the data centers and still meet the carbon-free mandate in Minnesota, although it may need to extend the lifespan of some gas plants to keep the grid reliable. The Xcel plan depends heavily on renewables like wind, solar, and hydropower, while also incorporating battery storage and the remaining Xcel Energy nuclear plants in the state.

With or without the new load from data centers, municipals do not have the nuclear generation on which Xcel can depend for meeting the 2040 carbon-free mandate. Certain state officials have admitted hitting the target may not be feasible by the deadline under the best of conditions—and that statement was made before many of the federal dollars that were expected to support the energy transition were eliminated. Thus, the situation has only gotten more complicated in recent months.

With this in mind, municipal utilities will want to take lessons from Georgia Power's recent controversy to avoid public backlash and overpricing. Looking ahead, we face both the excitement and uncertainty of potential new customers such as data centers whose presence will cause huge load increases, while wrestling with the 2040 mandate and all that it implies for generation and transmission irrespective of that potential new business.

The bottom line

Data centers and other businesses that drive up the load will continue to expand across the nation. While this happens, Minnesota utilities are challenged to prioritize ratepayer interests and environmental responsibility while effectively meeting surging demand.

As we deal with these opportunities and challenges, it will be imperative to communicate about the decisions we are making in a transparent, ratepayer-focused manner. How we face the dilemma of welcoming new businesses while honoring commitments to becoming carbon-free, improving demand-side management and energy efficiency, and justifying new projects of whatever fuel type, will be critical. The municipal model depends upon public trust.

AI boom sparks natural gas power surge in the heartland

A powerful new alliance between Blackstone Infrastructure Partners and PPL Corporation has reignited debate about the future of natural gas in a rapidly electrified economy.

The two companies are collaborating to build natural gas-fired power plants specifically to serve the energy needs of artificial intelligence (AI) data centers and other high-demand commercial operations in the Mid-Atlantic region.

Announced in July 2025, the partnership, backed by Blackstone's global investment power, will develop natural gas facilities capable of dispatchable, large-scale energy generation. The goals include grid resiliency, speed of delivery, and reliability as the AI and cloud computing sectors fuel record energy demand. The initial proposed sites are in Pennsylvania, and the implications for municipalities across the Midwest, including Minnesota, are considerable.

Blackstone's managing director, Sean Klimczak, described the initiative as "essential to meeting America's digital infrastructure needs," noting renewable-only models are not yet sufficient to handle AI's ever-growing energy appetite.

PPL CEO Vincent Sorgi echoed Klimczak's sentiment. "Our grid must evolve as the economy digitizes. Natural gas remains the most efficient way to quickly deliver the firm capacity needed," Sorgi said in a July 15 press release.

The venture aligns with broader national energy conversations, where utilities and policymakers are grappling with how to accommodate ballooning electricity needs while meeting climate targets. AI-driven data centers, electric vehicles, and cryptocurrency mining are all accelerating load projections, pushing utilities to reevaluate their strategies.

From the campus to the grid

In Pittsburgh, Carnegie Mellon University (CMU) is emerging as a hotbed of clean-tech innovation, as a new generation of startups develop tools to modernize municipal utility operations, especially for smaller systems that may lack the resources to invest in grid modernization.

These ventures, developed under the university's energy-focused incubator and research programs, provide cost-effective solutions in grid stability, outage detection, and customer equity.

CMU is also championing innovation across the energy spectrum, including transformer monitoring to magnetic materials, battery diagnostics, leak inspection robots, and biodegradable HVAC filters, illustrating the university's broad approach to advancing the future energy ecosystem.

AI-driven innovation

One standout company that has emerged from CMU's research program, GridSight, leverages artificial intelligence (AI) to better monitor distribution transformers, helping utilities anticipate grid overloads before they occur. Drawing from smart meter and sensor data, the platform provides transformer-level loading estimations accounting for seasonality, weather, and usage patterns. A recent industry case based on Q1–Q2 2023 data revealed nearly three-quarters of transformers had sufficient clearance, helping utilities to proactively plan and reduce network bottlenecks.

Another venture, Pearl Street Technologies, uses chip design to accelerate grid interconnection studies. Its SUGAR platform now completes large-scale grid study simulations in mere days, significantly reducing deployment timelines for renewable and distributed energy resources.

In addition, CorePower Magnetics, developed under CMU's Wilton E. Scott Institute for Energy Innovation, is improving electric-vehicle efficiency through advanced magnetic materials (engineered substances with enhanced magnetic properties, enabling a wide range of applications, particularly in sustainable energy, electronics, and medical devices).

Customer-focused tools

Addressing customer-service pain points, Peoples Energy Analytics flags households at risk of utility shutoffs, sometimes

years before arrears occur, by analyzing billing and usage trends. The company then connects customers with assistance programs, helping both households in need and utilities avoid costly shutoffs.

Promising pilot programs

Pilot programs are active in Pennsylvania and Ohio, where utilities are testing GridSight's transformer analytics and Pearl Street's interconnection platform, and using Peoples Energy's predictive tools to flag at-risk customers. These early test cases are yielding cost savings, outage prevention, and improved customer engagement.

Focusing on municipals

"Our mission is to democratize grid intelligence," said CMU professor Dr. Talia Wynn, summarizing the objective of these ventures. She said smaller municipalities and cooperatives are too often left out of the energy transition conversation, and university partnerships can help to bridge this gap.

Larry Pileggi, one of the founders behind Pearl Street Technologies, emphasized the social impact of Pearl Street's work: "At Carnegie Mellon, we spin off companies that can move research forward in ways that directly benefit society."

Giving it the old "college try"

CMU is not alone in these efforts. Carnegie Mellon is part of a regional consortium (RETI) with the University of Pittsburgh and West Virginia University, aiming to accelerate energy resilience innovation through collaborative research and deployment. The group recently became a semifinalist for the National Science Foundation's $160 million Regional Innovation Engines program.

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Spain and North Korea's outages sound alarm to power grid cyber threats

In April, Spain experienced a 10-hour outage that brought normal activity to a standstill in four countries and resulted in at least eight deaths.

In June, North Korea experienced a multi-hour internet blackout, disrupting government and media sites before connectivity began to return. Experts attributed both of these incidents to internal technical failures rather than cyberattacks, although the scope of the outages revealed numerous vulnerabilities.

Cyber threats mushroom globally

The incidents stressed a growing global concern: cyberattacks threaten critical infrastructure, particularly power grids. The World Economic Forum described electric utilities as "vulnerable… targeted by malicious state and nonstate actors." In 2015, hackers disrupted Ukraine's grid, demonstrating how sophisticated cyber criminals can execute coordinated blackouts.

The U.S. grid is vulnerable

Closer to home, the North American Electric Reliability Corporation warns US grids now contain roughly 23,000–24,000 potential entry points—about 60 new vulnerabilities per day—with physical and digital threats increasing. These weak spots are growing faster than utilities can patch.

As grids modernize with smart meters, electric vehicle chargers, and digital controls, researchers warn smart systems expand the "attack surface" for hackers. A Tripwire report notes US critical infrastructure faces increasingly sophisticated cyberattacks.

Minnesota utilities respond proactively

A Minneota Public Utilities Commission commissioner noted state utilities collaborate closely with congressional and emergency teams to prepare for cyber threats. Crow Wing Power recently detected and contained unauthorized network access without operational disruption.

Minnesota utilities also guard against physical sabotage. Following the 2022 Moore County substation shootings in North Carolina, the National Security Council urged grid resilience. Minnesota utilities likewise invest in full-scale monitoring and continuous cybersecurity upgrades.

The federal government's role

AI-enhanced grid security is a common theme at national energy conferences. The federal government, however, must step up its involvement. A Government Accountability Office report criticizes the Department of Energy's grid security plans for failing to assess threats from remote access and commercial vulnerabilities.

International cyber operations also impact US energy. *The Wall Street Journal* revealed Chinese groups such as Volt Typhoon embedded themselves in American power and telecom systems, aiming at potential long-term access and disruptions.

The battle for grid security continues. Solar panels, microgrids, and demand response tools offer resilience, but security experts warn about rushing to modernize grids without sufficient cybersecurity protocols.

The bottom line

The incidents in Spain and North Korea may have stemmed from internal glitches, but they highlight a sobering reality: any failure or breach in power or communication networks can have far-reaching consequences.

For this reason, utilities, regulators, and lawmakers must treat cybersecurity, physical security, and operational excellence as essential pillars of energy modernization.

Around the state

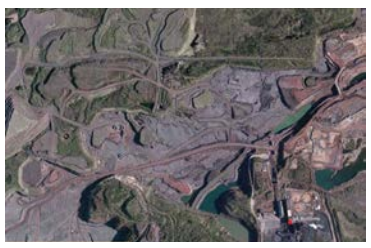
On Wednesday, July 23, heavy overnight rains and a storm surge flooded **Ely**. In just 35 minutes, three inches of rain overwhelmed storm sewers and filled sanitary systems, with total rainfall much higher throughout the area. Roads were submerged, with some areas under nearly a foot of water. Despite the dangerous situation, Tenille Flegel took advantage of the conditions, paddling a canoe from her employer, Pijaris, a local outdoors shop, along Sheridan Street. A video of the canoe trip taken by her husband went viral. The local True Value store reported high sales of vacuum cleaners and sump pumps as residents faced blocked roadways and flooded homes.

Elk River Municipal Utilities proudly claimed the award for Best Use of Theme at the Sherburne County Fair, held July 26–30. Embracing the Fair's theme, "Enjoy the Ride," the utility showcased a vibrant, circus-themed float featuring a bucket truck, which delighted spectators as staff tossed candy to excited children and families. This engaging display highlighted the utility's community spirit and creativity at the annual event.

In an innovative approach to sustainability, the recent 3M Open golf tournament in **Blaine** transformed food waste into electricity, showcasing how discarded scraps can power homes. This unique process transforms food scraps into methane biogas, generating electricity sold to Xcel Energy. Tournament participants were encouraged to separate their food scraps

on-site, with further processing occurring at Viresco's Turtle Lake, Wisconsin, facility, which recently added a food liquefaction system. The event generated 10 tons of waste, which took about a week to process through anaerobic digestion.

Abbott Northwestern Hospital in **Minneapolis** will soon host a large community solar garden atop its parking ramp, aimed at reducing energy costs for residents in the Phillips neighborhood. Allina Health is partnering with Cooperative Energy Futures (CEF), a Minnesota-based clean energy cooperative, for this second solar rooftop project, the largest to date for CEF. Subscribers can save up to 30 percent on their electricity bills. CEF plans to construct at least three more solar gardens this year, with five additional projects in development, supporting Minnesota's carbon-free goals.



Under pressure from the Environmental Protection Agency, the **Minnesota Pollution Control Agency** has proposed a new permit for the Keetac tailings basin. This permit would mandate additional testing sites for sulfate and limit sulfate discharges to safeguard local wild rice. For decades, the basin has received about 20 million gallons of sulfate-laden water daily from the processing plant, harming nearby ecosystems. If approved, this permit could influence other tailings basins on the iron range, prompting more rigorous wastewater inspections and compliance reports.

A severe storm swept across Minnesota on July 28, prompting **Owatonna Public Utilities** (OPU) to request mutual aid. Line crews from Austin, Chaska, New Prague, and Shakopee deployed the next morning to assist with power restoration. To the north, the storm left more than 140,000 without power in the **Twin Cities** area, as Xcel Energy mobilized more than 1,000 workers to address outages.

A nine-year-old boy in a crosswalk was struck and killed by a public works vehicle in **Moorhead** on July 31. The accident is under investigation.

The **Detroit Lakes** utility box art project has wrapped up with the completion of its 12th and final piece, crafted by a local mother-daughter team. This public art initiative, titled "Detroit Lakes Energy," involved collaboration between Detroit Lakes Arts and Culture, the Public Utilities Commission, Project 412, and the Historic Holmes Theater. The project aimed to showcase vibrant designs by regional artists, emphasizing local themes, particularly those featuring lake and fish imagery or reflecting Minnesota motifs.

The **University of Minnesota** has discovered a previously unreported organism, Phytophthora, a water mold threatening nurseries, forests, and landscapes. This species damages numerous woody plants, including oak trees, and contributes to root rot. With more than 5,000 host species, it commonly appears in nursery materials. Research on Phytophthora in Minnesota's forests and waterways remains limited, and the University urges increased awareness and investigation of these often-overlooked pathways.

Bits & pieces

In Central **Nebraska**, a severe thunderstorm on July 23 caused more than 3,000 customers in the Dawson Public Power District to lose power. Crews worked to restore electricity to hundreds of affected customers, and 18 utility poles needed replacing after the storm knocked them down. The public power team restored nearly all power in less than half a day.

Devastating floods in **Kerr County, Texas**, inflicted immense damage and caused significant power outages. Floodwaters submerged one substation in Hunt, Texas, under eight feet of water, creating problems that may take months to resolve. The Kerrville Public Utility Board reported that nearly every control cabinet was filled with water and mud. The power station will collaborate with the Lower Colorado River Authority to develop a temporary solution.

The **Wisconsin Public Service Commission** has approved a groundbreaking long-duration energy storage system. Alliant Energy will implement Energy Dome's CO_2 battery technology through its Columbia Energy Storage Project. This closed-loop system stores energy by converting grid power into compressed CO_2 liquid for long-term use. When the system requires energy, it re-gasifies the liquid CO_2, which drives a turbine to generate electricity. Builders will construct the system south of Portage, Wisconsin, with plans to complete it by the end of 2027.

The **Missouri Public Utility Alliance** (MPUA) has begun constructing the Marshall Energy Center, a natural gas-fired power plant designed to provide Missouri residents with more reliable and affordable electricity. MPUA President and CEO Steve Sodden stated, "This project reflects our commitment to improving local quality of life through hometown utilities." The construction will create jobs, and the team will purchase the turbines from US manufacturers to support domestic industry and infrastructure.

In **Loveland, Colorado**, a drone inspection program has achieved success after its first year of operation. The City of Loveland Utilities aims for safer, faster, and more reliable service by using drones to inspect utility

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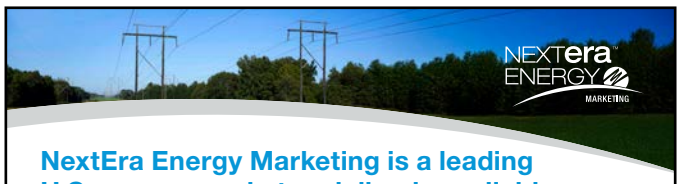

Training & Education

poles. The utility reports that this method helps prevent power outages, stating, "By identifying and repairing these problems early, we estimate we've prevented more than 504,000 minutes of outages for our customers." The drones also assist in monitoring shoreline erosion, assessing fire damage, and evaluating hail damage after storms.

The UK government plans to establish a new water regulator in response to the crisis surrounding **Thames Water**, the largest water utility. Amid growing public and political pressure over the company's financial instability and pollution issues, the new regulator will gain stronger oversight powers to ensure water companies prioritize infrastructure investment and environmental protection. This overhaul aims to restore public trust and improve accountability, particularly as Thames Water faces potential restructuring if it fails to stabilize.

A massive 8.8-magnitude earthquake off **Russia's Kamchatka Peninsula** triggered tsunami alerts across the Pacific in late July, tying it for the sixth strongest ever recorded. A 13-foot tsunami partially flooded a town and a fish processing plant, but authorities reported no serious injuries. Regional officials quickly acted to keep residents safe, although some communities lost power and sustained building damage. Tsunami warnings reached California, Oregon, Washington, and Hawaii, but none experienced waves exceeding 3.6 feet.

In **Oakland, California**, proponents of a measure urging city council members to support legislation requiring the state to study ditching investor-owned utilities and establishing a public power model did not find a receptive audience at a July meeting. Using a procedural maneuver, consideration of the measure was pulled from the agenda. The legislation would also have encouraged California regulators to link utility executive compensation to power reliability and grid safety. More than 8,000 Oakland residents work for Pacific Gas & Electric.

Newark, Delaware, officials plan to launch an enhanced system for reporting municipal power outages, aiming to improve communication and response times. The new platform will allow residents to report issues via a mobile app or website, streamlining the outage reporting process. City leaders emphasize the upgrade will help utility crews address problems more efficiently, minimizing downtime for affected neighborhoods. The rollout is set to begin next month, marking a significant step toward better service for Newark residents.

Oversupplied oil market

Continued from page 13

- Strengthen contingency reserves. Current conditions allow for optimal fuel inventories at historically lower prices. Facilitating co-investment in regional fuel storage can protect against unexpected spikes.
- Diversify peaking resources. Temporarily low oil prices offer a window to steer toward cleaner alternatives such as battery storage, renewable diesel backups, or solar-thermal units, potentially supported by state grants or joint-action funding (pooling resources and sharing costs).

Long-term outlook

The IEA warns the current surplus may be fleeting. Non-OPEC+ production pipelines could start tapering around 2027, unless new investments are approved. This suggests an eventual shift toward tighter markets and higher price volatility.

Historical cycles such as the 2010s' oil surplus, which was driven by surging U.S. shale, and the 1980s oil bust highlight how quickly oversupply can reverse its course. Utilities overreacting to current conditions may find themselves exposed when prices rebound.

The bottom line

Utilities should recognize the current oil surplus as a pause, not a pivot. Short-term gains from cheaper fuel prices do not preclude looming volatility and future supply constraints. By revisiting price hedging, leveraging storage capacity, and investing in cleaner peaking solutions now, utilities can position themselves for both cost savings and resilient operations during the energy transition.

From the campus to the grid

Continued from page 15

Why this matters for MMUA members

1. **Cost efficiency:** Smarter asset management means fewer outages, less downtime, and better lifecycle equipment management, which are common challenges for smaller utilities.
2. **Equity focus:** Analytics-driven outage prevention tools can protect vulnerable customers.
3. **Shifting to a higher speed:** Tools like transformer analytics and SUGAR fast-track deployment of distributed energy resources—a critical need in modern municipal systems.
4. **Funding assistance:** With government-supported programs and regional innovation consortia, municipal utilities can participate in pilot programs with financial backing.

Conclusion

By collaborating with programs such as CMU's innovative startups, municipal utilities can more easily embrace modern, data-driven, equitable grid management. By merging academic innovation with federal funding and real-world pilot programs, utilities stand to enhance reliability, cost savings, and customer satisfaction while fueling the clean-energy transition.

2025 events calendar

(September–December meetings)

Training and Workshops

Minnesota Lineworkers Rodeo
September 9, 2025
MMUA Training Center

Overhead School
September 9–12, 2025
MMUA Training Center

Gas School
October 7–9, 2025
MMUA Training Center

Transformer School
December 15–18, 2025
MMUA Training Center

Quarterly HR Webinars

Q3: Paid Family and Medical Leave
September 9, 2025

Q4: TBA
October 21, 2025

Conferences

Technical & Operations Conference
December 9–11, 2025
Holiday Inn, St. Cloud

Visit **www.mmua.org/events** to view event details and register.

MMUA calendar subject to change.

2026 training and conference schedule TBA.

2025–2026 developing utility expertise and leadership DUEL™

DUEL Foundations Cohort #1

Building bridges: Connecting plans, projects and people
September 17–18, 2025
MMUA Office

Thriving together: leadership for dynamic teams and evolving challenges
January 21–22, 2026
MMUA Office

DUEL Foundations Cohort #2

Leadership lens: your utility, your style, your path forward
October 1–2, 2025
MMUA Office

Building bridges: Connecting plans, projects and people
February 12–13, 2026
MMUA Office

Thriving together: leadership for dynamic teams and evolving challenges
June 24–25, 2026
MMUA Office

Virtual Elective Courses

From peer to leader
September 4, 2025

Crisis leadership in the utilities sector
October 16, 2025

Negotiation skills for utility leaders
November 18, 2025

Mastering grant writing for utilities
February 19, 2026

Building a strategic utility budget
March 26, 2026

Telling the municipal utilities story
April 16, 2026

Strategic risk management in the utility sector
May 13, 2026

Critical thinking for effective decision making
June 18, 2026

Bonding and financial tools for municipal utilities
July 16, 2026

Collaberative leadership
September 2, 2026

In addition to the foundational courses offered by DUEL, participants have access to a variety of elective educational courses. Program participants select five course that align with their individual needs and interests. Additional classes can be chosen and registered for separately. It is not necessary to be enrolled in the DUEL program to attend an elective class; everyone is welcome to register.