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Carbon-free standard becomes law

Just before midnight on Thursday, February 2, 2023, after enduring nearly nine hours of debate and rejecting more than 50 amendments, the Minnesota Senate passed HF 7 on a straight party-line vote.

The bill, formerly known as SF 4 but re-designated because the House had dealt with it a week earlier, had also passed the lower chamber on a party-line vote following approximately eight hours of debate and the rejection of more than 30 amendments there.

Immediately following its passage by the Senate, HF 7 was sent to Governor Walz, who signed it on February 7.

The effect of this bill is a requirement that 100 percent of electricity consumed in Minnesota originate from a source that is carbon-free, with at least 55 percent also originating from a source that is renewable as defined in the law. The use of renewable energy credits (RECs) is authorized to offset any portion of energy produced from a carbon-based source, although



questions remain as to exactly when RECs will be available.

Passage of the 100 percent carbon-free bill was one of the DFL's top five priorities for the 2023 legislative session and was moved at lightning-fast speed, although they did miss a

rumored self-imposed deadline of placing the bill on the governor's desk by January 31. Although the bill addresses a number of issues, including significant labor matters, it was only heard in one committee in each chamber to help ensure its speedy passage

through the Legislature.

The House bill was introduced by majority leader Jamie Long (DFL-Minneapolis) who had previously chaired the House committee with jurisdiction on energy and utilities. The Senate bill was introduced by Senator

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Legislative Conference ensures Minnesota lawmakers know MMUA's issues

by Kent Sulem

MMUA held its 2023 Legislative Conference January 24-25 at the DoubleTree by Hilton Hotel in downtown St. Paul.

It was the first time in three years that we were able to hold the event live, and over 60 people, including 54 delegates and seven MMUA staff members, took advantage of the opportunity. MMUA was especially pleased to see a number of commissioners and council members attend and encourages this trend to continue.

After being welcomed by Karleen Kos and Roger Warehime, Aaron Brown gave an entertaining and informative keynote lecture on the role electrification played in Iron Range politics a century ago. Aaron was also gracious enough to moderate the legislative panel, which turned

into a dialogue between Sen. Nick Frenzt (D-Mankato) and Rep. Patty Acomb (D-Minnetonka) when both the House and Senate minority leads on the energy committees had to cancel.

Following a briefing on issues by Kent Sulem and Doug Carnival, MMUA members took shuttles to the Capitol for meetings with their legislators. Members then returned with legislators in tow for a very successful legislative reception.

Wednesday morning began with reports on the legislative conversations of the prior day. These reports demonstrate the importance of the Legislative Conference, as attendees held dozens of meetings with legislators. While discussion of MMUA's concerns with SF 4/HF 7—the 100% carbon-free by 2040 bill—there were conversations

Continued on page 7

MMUA mutual aid efforts help Wisconsin utilities for the first time

As told by Cody Raveling, MMUA Assistant Director of Education and Outreach:

On the morning of December 15, 2022, I received a call from Mike Willetts, MMUA's Director of Safety Services, that Moose Lake Water and Light was

requesting mutual aid due to heavy, wet snow that had caused trees to take out their lines. Several utilities near Moose Lake were dealing with similar issues and were busy tending to their own weather-related problems.

I called Shakopee Public Utilities, and they were on the

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MMUA mutual aid efforts

Continued from page 1

scene by the afternoon that same day with a crew and a four-wheel drive bucket truck. As they were enroute, I spoke with Harlan Schmeling at Moose Lake, and he said he could use an additional crew. Elk River Public Utilities responded and joined Shakopee that afternoon with a crew and bucket truck.

As the storm moved into Wisconsin, I received requests from Northwestern Wisconsin Electric Company and North Central Power Company. They also needed crews and four-wheel drive bucket trucks for downed lines and broken crossarms caused by the storm.

At this time, even more Minnesota municipal utilities came to help. Four crews lined up to help in Wisconsin: two crews from Rochester and one from Chaska; and the Shakopee crew offered to head to Wisconsin after repairs were made in

Moose Lake. These groups were scheduled to leave the morning of December 16.

On that morning, Chaska headed to Northwestern Wisconsin's service area, which includes towns like Grantsburg and Danbury and the rural areas around them. Rochester drove to North Central Power Company's territory in Radisson, which is in Sawyer County. Crews in Wisconsin dealt with a lot of trees that were hanging on power lines, as well as broken crossarms and lines.

Meanwhile, back in Moose Lake, Elk River got the lights back on by the end of the 16th and headed for home.

On December 17, the Shakopee and Chaska crews were released from Northwestern and sent to North Central's territory, where conditions were still poor. All crews were now working in this area and had to contend with

rough terrain and deep snow. Crews worked 16-hour days through December 20 getting things repaired.

On the evening of December 20, I spoke to the crews and they said they were going to be released on the morning of December 21, except for Shakopee, which was released that evening. As everyone headed home on the 21st, I received a call from John Richards of Northwestern Electric requesting more crews because, a lot of snow was still hanging on trees, and he was concerned about the high winds forecast for December 23.

We lined up Anoka, Chaska, Austin, and Owatonna to help out. Luckily, we didn't need to fulfill the second request. Our contacts in Wisconsin were very pleased with all the help provided and how the process worked.



Heavy snow that caused trees to hang on power lines was a problem in both Minnesota and Wisconsin. Photos Courtesy of Chaska Electric Utility



Now we look for the pony

As the gavel went down and the “Carbon-free by 2040” bill was a done deal, I was reminded of the story of a boy whose family had some bad luck.

Forced from the comfort of their preferred environs into unfamiliar conditions on the ancestral farm, the parents sat resentfully worrying. Meanwhile, the boy went exploring. Hours later, the parents found him shoveling his way through a huge manure pile in the old horse barn. Taken aback, they asked him what he was doing. His reply: “Well, I figure if there’s this much s**t, there has to be a pony in here somewhere.”

the short run.

We can also rue the state of Minnesota’s politics. If I had eaten a single pea every time something about the bad behavior on one side of the aisle has been mentioned since January 3, I’d be the size of Le Sueur’s Jolly Green Giant today. The thing is, I’ve lived long enough to have heard the “they ain’t acting right!” refrain sung by both parties when they are out of power. Feeling frustrated and vilifying the other team’s tendency to flex its muscles is as predictable as the Vikings blowing their chances at the playoffs.

Here at MMUA, we are going to focus on finding the pony.

As this whole thing was going

consistently swing from conservatism to liberalism and back again. The changes are driven by a combination of demographic, economic, and political factors. Right now, Minnesota’s party in power is working its way through its wish list at the legislature. Reactions to some of the more extreme new laws, together with a general tendency favoring periodic change, means the pendulum will swing back the other way. When that happens, MMUA will work hard to get the amendments we know are needed. Count on it.

Meanwhile, we will seize this opportunity to educate the party currently in power—it doesn’t

From My Desk to Yours

Karleen Kos
MMUA CEO



now and the 2024 session. If both parties pitch in by supporting reasonable changes to the law, we’re bound to find the pony a lot faster.

Bernard Crick’s *In Defense of Politics* can be boiled down to this thesis: Politics, however flawed, beat the alternative. When you don’t have the inelegant machinations of modern political activity, you have wars and oppression. In Crick’s view, the important thing is political engagement and participation; the more of it, the better. Citizen involvement is critical for avoiding tyranny and holding elected officials accountable. Institutions should promote active participation and inclusiveness in the process.

Municipal utilities, by their nature, engage a few citizens in governance. Given the numerous issues hometown utilities will be facing as we implement the requirements of the new law and work to fix those that are not feasible, there will be many, many more opportunities to promote increased citizen involvement.

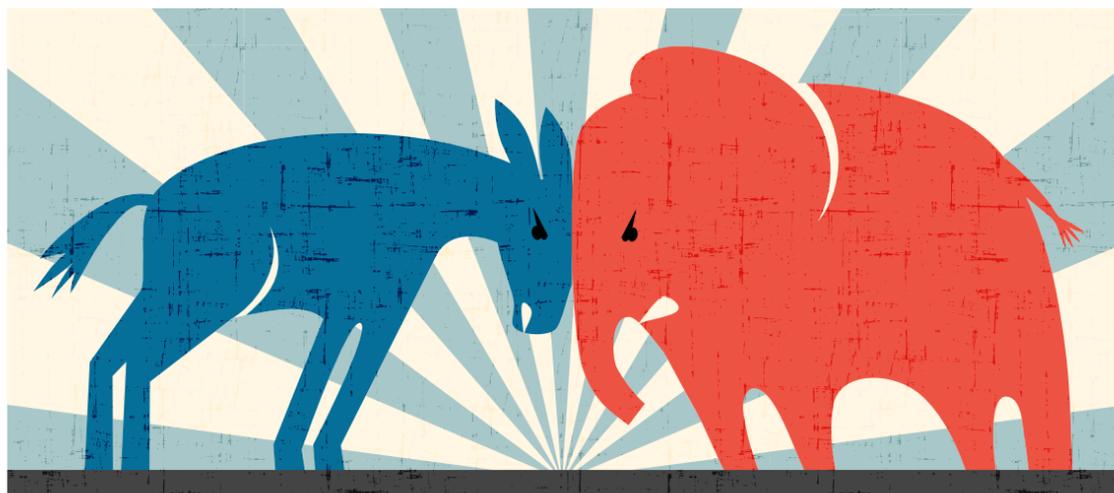
Engaging ratepayers over time can only be to our benefit. Today, a great number of customers take what they have for granted. My parents live in a terrific municipal community and their attitude is, “I don’t

have a choice in providers. As long as the lights come on, the water runs, and the bill doesn’t send me to the poor-house, I’m happy.”

We will find another pony by building on that sort of passive satisfaction with our ratepayers. MMUA, working with and through its hometown utility members, will use a series of activities aimed at raising awareness and engaging customers in just the sort of active participation Crick suggests as we live out our commitment to strategic preservation of local control.

We started our efforts with outreach in January by alerting customers to the downsides of the “Carbon-free by 2040” bill. Going forward, we will also:

- Hold five regional meetings for councilors, commissioners, and interested ratepayers in June 2023 on protecting, promoting, and strengthening your hometown utility;
- Add an educational track at the 2023 Summer Conference specifically for councilors, commissioners, and interested ratepayers;
- Develop an ambassador program consisting of interested citizen ratepayers who will serve as hometown utility boosters and potent spokespersons at the legislature;
- Continue to ask ratepayers to contact lawmakers when significant legislation affecting our utilities is being contemplated; and
- Provide utilities with a toolkit to help you raise awareness and engage your ratepayers



Friends, as we stare down the mandates in the new carbon-free law, we have a choice to make. We are in this position whether we like it, agree with it, or think it is feasible. We can spend our time fretting or looking for the pony.

To be sure, there are things in that well-intentioned but misguided statute over which fretting is justified. The list is too long for this column, and little can be done about them in

down over the last month, I was reminded of two books I own: *The Cycles of American History* by Arthur Schlesinger, Jr., and *In Defense of Politics* by Bernard Crick. They are both ponderous, and I don’t recommend them unless you are a political science junkie or in need of a non-pharmaceutical sleep aid. Both, though, shine some light on where the pony might be found.

The Cycles of American History shows how American politics

know us very well. In my home district, we have no municipal electric or gas utilities, and my senator was one of the co-sponsors of the bill. I know the senator. She’s a good person, but she doesn’t “get it.” I’m pretty sure there’s a pony to be found by making sure both parties come to appreciate the unique contributions hometown utilities make to Minnesota. We are going to be visiting with many unfamiliar legislators between

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Hometown utilities have been around for more than 100 years. They’ve survived the Great Depression, multiple wars, embargoes, and endless cycles of political and technological upheaval. We will get through the transition to clean energy as well. In the end, this bill and other transition issues offer us not merely a pony, but a whole team of Clydesdales. We just have to find them as they lie buried in the muck.

North Dakota threatens lawsuit over carbon-free energy law



In a letter sent to Minnesota Governor Tim Walz, Attorney General Keith Ellison, and Commissioner of Agriculture Thom Petersen, North Dakota leaders Governor Doug Burgum, Attorney General Drew Wrigley, and Agriculture Commissioner Doug Goehring said that if the proposed carbon-free energy bill (House File 7/Senate File 4) is not amended by the Minnesota Legislature, North Dakota will sue.

The bill language mandates a phased movement toward 100% carbon-free energy in Minnesota by 2040.

The amendment North Dakota desires would clarify that the carbon-free energy generation mandate only applies to generation originating within Minnesota and not from neighboring states. Because the grids of the two states are interconnected, North Dakota

argues the bill will harm North Dakota utilities' ability to operate their carbon-fueled power plants and even prevent the development of their own carbon-free generation.

At this time, leaders in the Minnesota Legislature do not plan to add an amendment to the new law that addresses the concerns of the North Dakota leaders.

Coming soon: the APPA Safety Manual for an Electric Utility, 17th Edition

Updated in 2023 by the American Public Power Association (APPA) Safety Manual Revision Taskforce, the APPA Safety Manual for an Electric Utility is the premier source of information for electric utility safe work practices.

This latest update features more than 200 changes from the 16th edition, released in 2017.

As we have done in the past, MMUA has made a bulk purchase of the Safety Manual and is

making them available for sale to members at the reduced rate of \$29, not including tax. MMUA's safety coordinators will be delivering the manuals whenever possible for additional savings on shipping costs. The manual is expected to be available at the end of February. For information on ordering, watch your email for our weekly MMUA Digest or contact Rita Kelly at rkelly@mmua.org or 763-746-0707.

TVA to study late-December blackouts

The Tennessee Valley Authority (TVA), the nation's largest public utility, announced on January 17 that it would appoint an independent panel to investigate rolling blackouts occurring on its system December 23 and 24.

Those named to the panel include former American Public

Power Association President Joy Ditto and former United States Senator from Tennessee Bob Corker.

TVA experienced its highest-ever winter power demand on December 23. At the same time, extremely cold weather caused problems at some gas plants and made two of the utility's coal power plants go offline.

Xcel Energy to install grid storage battery in Becker

On January 26, Xcel Energy announced that it would install an iron air battery in Becker that can store electricity for about 100 hours and has five megawatts of storage.

The battery, which will come online by 2025, is being supplied by Form Energy of Somerville, Massachusetts. A similar battery will be installed by Xcel in Pueblo, Colorado.



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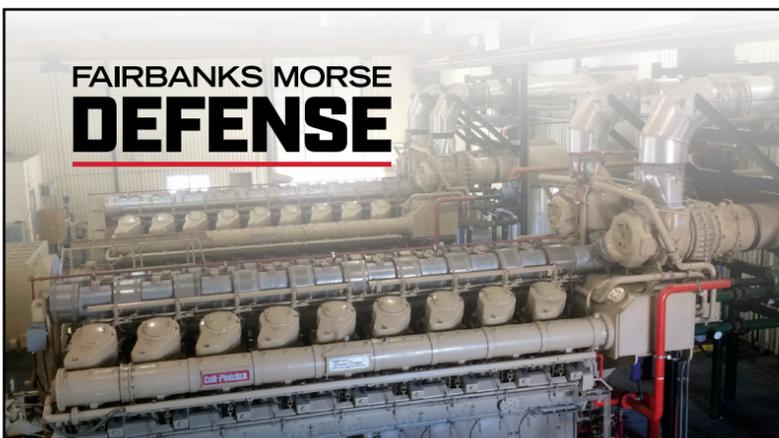
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National Academies of Sciences, Engineering, and Medicine call for increased development of wastewater surveillance

In a report released on January 19, the National Academies of Sciences, Engineering, and Medicine said that development of a comprehensive wastewater surveillance program that can track multiple diseases across the United States is an important goal.



As a result, the report put forward a “Vision for a National Wastewater Surveillance System” that pictures what such a system could look like. In order for the system to work, the report envisions it as being “flexible, equitable, integrated, actionable, and sustainable.” That would mean the system could track multiple diseases across large parts of the population. The results would then be shared with a wide variety of health and government organizations in order to make the best use of the information. This way, the data would be actionable, allowing agencies to make public health and governmental decisions that benefit the populace. For the system to work long-term, it will need to be sustainable both from an operations standpoint and from a financial aspect.

Of course, a wastewater surveillance program cannot monitor every pathogen that exists. For that reason, the report also highlighted the importance

of identifying which pathogens are most important to track. To do this, the report recommended that the Centers for Disease Control decide by determining the public health significance of the threat, the possibility of tracking the pathogen through wastewater, and the usefulness of this data in making public health decisions.

Within the framework of widespread disease tracking, the National Academies also recommended the use of sentinel sites. These locations would provide additional early warning capabilities to the detection network by providing valuable information from places like airports and animal farms in order to better track emerging or existing disease threats.

Federal funding and a concerted partnership between federal, state, and local entities would be required for a national tracking system to work. However, the time and money invested may outweigh the costs associated with a disease outbreak that has a negative impact on society.

New report highlights electrical utility performance state-by-state

A new report issued by the Illinois Citizens Utility Board compared electrical utility performance on a variety of metrics, and Minnesota utilities did well in nationwide rankings.

In the first area of overall utility performance, Minnesota ranked eighth nationally, with the state of Washington placing first. This metric took into account the areas of affordability, reliability, and environmental impact to reach the average of overall utility performance.

The affordability ranking itself consists of several components as well as an overall affordability ranking. Overall, Minnesota ranked 25th in affordability, with New Mexico ranking first.

Within affordability component rankings, Minnesota placed seventh in total household

electricity costs as a percentage of income, with Utah ranking first. Minnesota ranked 37th in electricity cost per kilowatt hour for all customers, with Idaho ranking first.

Electrical reliability was another component of the total ranking. In the area of average reliability performance, Minnesota ranked ninth, while Arizona ranked first.

The report also took into account environmental metrics. Minnesota ranked 16th overall in the environmental rankings, with the state of Washington ranking first.

Within this aggregate, Minnesota did particularly well in the areas of renewable electricity generation at 12th and with residential energy efficiency program savings as a percentage of residential

electricity sales, also at 12th. Minnesota had its lowest rankings in this area for sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emissions from electricity generation per gigawatt hour at 30th, and SO₂ and NO_x emissions at 28th.

Overall, the report illustrates some realities about the current utilities market. For one, states that are more dependent on gas and oil for energy production are in general ranking lower in energy affordability than states that have a stronger renewable energy base. However, the report observes that “firm” renewable energy sources like nuclear, hydropower, and geothermal as complements to renewables are needed to bring about the most affordability for customers.

NuScale small modular reactor is the first SMR certified by the Nuclear Regulatory Commission

On January 19, the United States Nuclear Regulatory Commission (NRC) issued a final rule certifying NuScale Power’s small modular reactor (SMR).

The final rule is effective on February 21, 2023. This is the first SMR type certified by the NRC.

The newly certified reactor

type is a pressurized water reactor capable of generating 50 megawatts (MW) of electricity. Due to its modular nature, several units, called modules, can be installed in sequence. NuScale’s 12-module power plant is called VOYGR-12 and can produce 924 MW. It has also built a 4-module power plant called VOYGR-4 that can

produce 308 MW.

NuScale plans to deploy a VOYGR power plant set at the Utah Associated Municipal Power Systems’ Carbon Free Power Project located at the Idaho National Laboratory in Idaho Falls. It is expected to come online in 2029.

Turbine failure occurs in Wisconsin

A rare turbine failure occurred on January 18 at the Butler Ridge Wind Farm, which is located in Dodge County, Wisconsin.

The blades and top portion of a wind turbine collapsed and fell to the ground.

No one was injured during the incident, although the landowner heard the turbine collapse and the debris left a large crater on the property.

NextEra Energy Resources, which is the owner of the wind farm, plans to do a full investigation of the failure and an inspection of other turbines at the site.



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More than \$100 billion in American renewable energy investments projected by 2031



Research from global consulting group Wood Mackenzie has found that the Inflation Reduction Act (IRA) could create as much as \$114 billion in renewable energy investments by 2031.

Of special note is the assistance the IRA creates for renewable energy manufacturing in this country. The Act helps in two ways: through advanced manufacturing production tax credits for American-made renewable energy equipment, and through

a tax credit for the purchasers of American equipment.

These tax credits should create an increase in investment even as the world renewable energy marketplace becomes more competitive and countries fight to sell their products in the United States. In the end, it may be more competitive for global renewable energy manufacturers to relocate some manufacturing here, depending on how the IRA unfolds in the coming years.

UK energy regulator asks for low-income energy assistance in volatile energy market

On January 23, the Office of Gas and Electricity Markets, which is the government regulator for the United Kingdom's (UK) electricity and natural gas markets, said that the current administration in the UK should actively work to create low-income energy assistance for vulnerable households in the country.

As many as 99 percent of rate-payers in the UK are already receiving government subsidies that have capped household energy prices at £2,500—about \$3,100 annually—until April 2023. At that point, the cap will rise to £3,000 annually until March 31, 2024.

Charity organizations have

been arguing for months that the current caps are still too high, and that many of the most vulnerable have already fallen far behind on their energy bills.

Energy prices have finally begun to fall in the UK, where Russia's invasion of Ukraine created a sharp increase in energy prices.

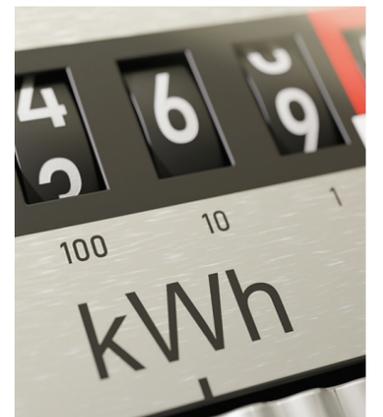
Electricity costs rise sharply in 2022; expected to moderate in future years

According to government data released in early January, consumers paid 14 percent more for electricity on average than in 2021, while a similar rate of increase is not expected in the coming years.

The United States Energy Information Administration (EIA) estimates that electricity will rise by one-third of a cent per kilowatt-hour (kWh) in 2023 and by one cent per kWh in 2024. This

compares to a rise of 1.41 cents per kWh in 2022.

The EIA sees electrical generation declining in 2023 and picking up again in 2024. The natural gas portion of the energy mix is projected to drop one percent each of the next two years, from 39 percent to 37 percent, with renewables increasing their share of generation from 21 percent to 26 percent over the same two years.



Wärtsilä to supply eight engines to new power plants in the Midwest



Finnish-based Wärtsilä has announced that it will provide eight of its 34DF engines to two new power plants in the United States.

The buyer is an unnamed investor-owned utility in the Upper Midwest.

The first plant will generate a total of 28 megawatts (MW) from three of these engines, while the second plant will generate 47 MW from five engines.

Wärtsilä said that the engines' fast-starting and stopping capabilities, as well as their grid-balancing capabilities, were important factors in getting the contracts.



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Carbon-free standard

Continued from page 1

Nick Frenz (DFL-North Mankato), chair of the Senate Energy, Utilities, Environment, and Climate Committee. As introduced, SF 4/HF 7 defined an electric utility as being a joint action agency (JAA) for municipal utility concerns. The bill, however, was amended so that the 23 municipal utilities that are not members of a JAA would be required to meet the mandates on their own, something that could be very difficult and costly to do.

As introduced, the bill required that by 2030, 80 percent of power provided by an electric utility originate from carbon-free sources. That amount increases to 90 percent by 2035, before hitting 100 percent by 2040. The House amended the bill on the floor to lower the 2030 standard to 60 percent. The Senate simply accepted the House language for the bill.

As a result of the new bill, the existing renewable standard has also been modified, requiring that by 2035, 55 percent of power provided originate from a renewable source as defined in statute. As a result of the bill, solar, wind, and existing small hydro are joined by (1) hydro of any size for facilities existing at the time of the bill's passage and up to 100 megawatts for all new facilities, and (2) most biomass as acceptable forms of renewable energy under the bill. Carbon-free is recognized as any source not emitting carbon dioxide.

A utility that does not believe it can meet the standards can appeal to the Minnesota Public Utilities Commission (PUC) for a modification or relief. This so-called off-ramp, however, was made a little more difficult by the addition of criteria the PUC must use before granting any

relief from or modification to the standards.

A utility that fails to meet the standards imposed by HF 7 can be ordered to buy or build sufficient renewable sources so as to be in compliance, or ordered to buy enough RECs to create net-compliance with the standards, whichever costs less. A utility that fails to follow the PUC's order to deal with non-compliance can be fined a cash penalty equal to the cost of the PUC's ordered remedy. MMUA began working on the issues caused by the bill as soon as it was introduced. Efforts included meetings with the Senate author and members of the Energy, Utilities, Environment, and Climate Committee, and ultimately testifying before the committee.

HF 7 quickly became the focus of the weekly MMUA Government Relations Advisory Group meetings, with members being strongly encouraged to talk to their legislators back home. MMUA's CEO, Karleen Kos, issued a model letter of concern, and it was widely circulated to legislators by attendees of MMUA's 2020 Legislative Conference. MMUA then took an extra step and issued a press release that was picked up by various newspapers and others across the state.

While MMUA knew HF 7 couldn't be stopped, there was

hope of slowing it down as it worked its way through the system. Ultimately, this pressure resulted in a recorded pledge by Senator Frenz to continue working with MMUA to see what, if any, improvements can be made to the bill. This pledge was documented in a letter MMUA sent to Senator Frenz, and on the floor the Senator again committed to working with all parties both now and down the road. Although the individual sections of HF 7 took effect the day after Governor Walz signed the bill, the requirements for meeting the enhanced standards do not kick in until 2030.

A summary of important deadlines under the bill are as follows: 2030—60 percent carbon-free 2035—90 percent carbon-free and 55 percent renewable 2040—100 percent carbon-free (plus the 55 percent renewable standard remains in effect)

MMUA thanks its members for making their voices heard. A special thank-you is also given to Senators Andrew Mathews, Jason Rarick, Jim Abeler, John Hoffman, Glen Gruenhagen, and Steve Green, as well as Representatives Chris Swedzinski, Marion O'Neill, and Pat Garofalo, for speaking on behalf of municipal utilities and offering amendments that would have helped address some of MMUA's issues with HF 7.

Legislative Conference

Continued from page 1

about other parts of MMUA's legislative agenda, such as repealing the local government salary cap.

The reports on these meetings with lawmakers were followed by an informative update on the status of IJJA and IRA funding by Kellye Rose from the Minnesota Department of Commerce. New government relations team member Mike Siebenaler received a baptism by fire, having been asked to give his first conference presentation only one month into his new position. He did an excellent job reassuring members that government grants are not as overwhelming as they may first appear, and he provided several suggestions on how a community can improve its chances of being awarded a grant.

Finally, the conference ended with a joint panel of MMUA and MREA members discussing possible ways the two associations could work collaboratively. This was the first of what is intended to be a handful of joint discussions between MMUA and MREA each year.





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Princeton Public Utilities General Manager Keith Butcher elected to MMUA Board of Directors



Election occurred January 25 at the general membership meeting

Butcher has led Princeton Public Utilities (PPU) as General Manager since 2019, where he has worked to modernize the utility through increased community outreach and improved utility operations. PPU is currently implementing a 10-year, \$12 million electric capital improvements program, a comprehensive water study; and working with the city on several new commercial, residential, and industrial projects as the city grows.

Previously, Butcher was employed as an Energy Services Representative for the Southern Minnesota Municipal Power Agency (SMMPA) from 2007 to 2019, where he worked to deploy SMMPA's energy efficiency programs in six SMMPA member communities. With his assistance, these communities improved their energy savings from 2.2 million kilowatt-hours (kWh) in 2007 to 9.8 million kWh in 2013.

Butcher also worked as Manager of External Affairs for the Center for Energy and Environment (CEE), where he represented the organization

to outside groups and provided testimony to the legislature and other agencies.

Butcher has previously served on boards including the Chanhassen Environmental Commission, the University of Minnesota's College of Science and Engineering Alumni Board, and the Humphrey School of Public Affairs Alumni Board.

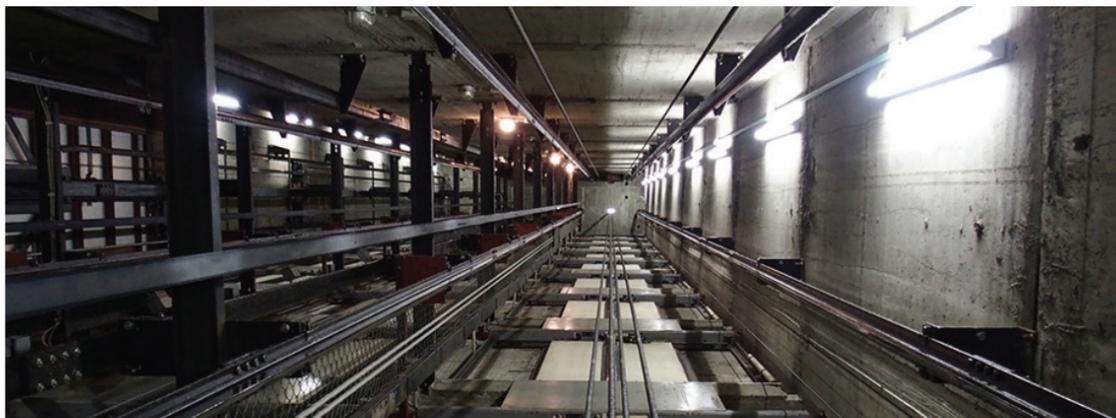
Butcher holds a Bachelor of Science degree in mechanical engineering from the University of Minnesota. Butcher also earned a master's degree at the University of Minnesota's Humphrey School of Public Affairs in the area of science

and technology policy with a concentration in energy policy.

Butcher has also received several awards, including MMUA's "Rising Star" award in 2021 and the President's Volunteer Service Award from AmeriCorps. Butcher has been a longtime volunteer and mentor for many organizations, including the University of Minnesota and Rotary International.

Butcher was elected by the members on January 25 to the seat vacated by Jenny Palmer who recently resigned from the Board. Palmer continues to serve as Finance Director at the City of Excelsior.

New gravity battery concept could store energy using elevators



A new type of energy storage concept could use abandoned mine shafts and elevators to store power until it is needed by the grid.

The idea is called Underground Gravity Energy Storage, which uses large vertical spaces, such as mine shafts, to store electricity using elevators. The

elevators are lowered when additional power is demanded, generating electricity from regenerative braking aided by gravity. When power is not in demand, the elevators are raised back to the top of the shaft.

The effect could be multiplied by filling the elevators with heavy materials such as sand

before they begin their descent. The material would then be unloaded before the elevators returned to the surface.

Scientists think that abandoned mine shafts worldwide have a storage capacity of seven to 70 terawatt-hours.



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MMPA to build landfill gas plant in Elk River

The Minnesota Municipal Power Association, which provides power to 12 municipal utilities throughout the state, has finalized a 15-year agreement with Waste Management's Elk River Landfill to build a renewable natural gas plant at the site.

The new plant will take in landfill gas at an expected rate of 3,000 cubic feet per minute. The gas will be delivered from the landfill to the plant before it is sent to the Northern Natural Gas Pipeline.

This new project continues the legacy of gas utilization at the landfill. Elk River Municipal Utilities collected methane for two decades at the landfill and turned it into electricity for customers of the utility.



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California Public Utilities Commission strengthens state's power grid with new projects

On January 12, the California Public Utilities Commission (CPUC) approved seven energy projects, mostly consisting of storage, which will allow the grid to better handle planned closures of power resources in the state.

San Diego Gas & Electric projects included one hybrid

solar and storage project, as well as two battery storage projects. Southern California Edison proposed four energy storage projects.

Both utilities see these storage assets as providing backup to the grid during times when it is particularly vulnerable, like during California's frequent

weather events or times of the day when use is heavy.

CPUC's goal is to have a significant amount of clean energy come online each year, including two gigawatts (GW) by August and another six GW by the middle of 2024.

Report: One billion people worldwide receive medical care at facilities with unreliable or unavailable electricity

A newly issued joint report from the World Health Organization, World Bank, the International Renewable Energy Agency, and Sustainable Energy for All says a total of one billion people worldwide receive care from medical facilities that have either unreliable electricity service or no electricity at all.

Nearly two-thirds of the health-care facilities in low- and middle-income countries around the world need an important



fix—such as a new electrical connection, for example—in

order to function correctly.

This lack of reliable electricity is preventing medical facilities from providing simple and advanced health care technology to the people they serve. For many of these clients, electricity is the difference between a life being saved and a life being lost.

For this reason, the joint report called for a strong response from the world community in order to begin solving this problem.

European power consumers help out during Ukraine War energy crisis



Data from Munich, Germany-based home automation company Tado found that concern about high energy prices and shortages stemming from the Ukraine War altered the behavior of energy consumers in a positive way.

Smart thermometers tracked by the company found that home heating settings averaged one-degree Celsius cooler than last winter. Homeowners also turned their heating systems

on later than last year. In late 2022, the percentage of homes with heating on reached 90 percent on November 28. In previous years, the 90 percent mark was reached in early to mid-November.

Even as the energy crisis begins to ease in Europe, it is clear the public was willing to help the energy system for a variety of reasons, including costs.

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Legislative Conference in pictures



Senator Nick Frentz, Chair of the Senate Energy, Utilities, Environment, and Climate Committee, and Representative Patty Acomb, Chair of the House Climate and Energy Finance and Policy Committee participated in a panel discussing upcoming legislation including Senate File 4 and House File 7.



Director of Government Relations and Senior Counsel Kent Sulem spoke about MMUA's 2023 legislative agenda.



Conference attendees had lunch in the DoubleTree by Hilton atrium before heading to the Capitol to meet their legislators.



Halstad's Lucas Spaeth, Northern Municipal Power Agency's Dalene Monsebroten, and MMUA Board President Don Martodam met Representative Deb Kiel, as well as other legislators.



Steve Nyhus from Rochester Public Utilities meets with Rochester Representative Andy Smith.



MMUA CEO Karleen Kos led a panel discussion featuring MMUA members and members of the Minnesota Rural Electric Association exploring shared concerns. Pictured (l-r) Karleen Kos, Ryan Hentges, CEO of Minnesota Valley Electric Cooperative; Keith Butcher, General Manager of Princeton Municipal Utilities; Steve Shurts, retired CEO of East Central Energy Cooperative; and Vernell Roberts, General Manager of Detroit Lakes Municipal Utilities.

North Carolina power operator initiated rolling outages to protect Eastern Interconnection during December winter storm

On January 3, leaders at Duke Energy announced that the company initiated rolling outages in their North Carolina service territory as issues in the state threatened the health of the entire Eastern Interconnection in December.

Duke explained to state leaders that as cold temperatures settled upon the state right before Christmas, the air was so cold that instruments froze at three

Duke-owned natural gas plants and two coal plants, reducing generation. At the same time, demand surged, leading to the institution of rolling outages in the state.

Power supplies to approximately 500,000 homes were negatively impacted on December 24. Duke officials said the power cuts were needed to preserve the integrity of the Eastern Interconnection at large.



Minnesota factory turns out first fully electric fire truck made in the U.S.



The first All-American electric fire truck, pictured here, was sold by Rosenbauer to the Los Angeles Fire Department in early 2022.

A factory in Wyoming, Minnesota, just north of the Twin Cities, has in the past year built the first fully electric fire truck in the United States.

The Rosenbauer RTX has two

electric motors that drive each axle, producing 360 kilowatts at peak performance, which is equivalent to 490 horsepower. The motors run off of a 132-kilowatt-hour battery pack.

On January 9, the truck was

demonstrated at the State Capitol grounds and Governor Tim Walz came and took a look.

The price of the truck is between \$1.6 and \$1.8 million. The truck's manufacturer, Rosenbauer, is based in Austria.

EIA reports four major weather events that caused wholesale electricity price spikes in 2022

Information from the United States Energy Information Administration (EIA) released on January 10 identified four major weather events that helped make 2022 a turbulent year for the electricity market in the United States.

The first event was in January 2022, when winter weather and pipeline issues caused a spike in New England's wholesale electricity prices to \$160 per megawatt-hour (MWh) for the month.

The next event occurred in July, when high temperatures

in Texas increased demand and simultaneously brought the state's wind generation to a standstill. The Electric Reliability Council of Texas (ERCOT), Texas' power grid operator, saw the wholesale price increase to \$182/MWh for July.

The surprising early September heatwave that hit the West Coast caused enormous price spikes for the region. The Northwest Mid-Columbia hub saw prices spike first, to an average of \$224/MWh in September. Prices soon followed in California, where prices averaged \$134/MWh for the month.

The final major weather event affecting wholesale prices was in December and also occurred on the West Coast. Winter storms caused prices to reach records in the Pacific Northwest at \$283/MWh and \$257/MWh in California.

Not only was extreme weather part of the pricing calculus, but continued problems with coal supplies prevented operators from switching to the fuel when needed. This made more-expensive natural gas the go-to generation fuel, further raising wholesale prices this year.

Iowa wind farm draws comment from environmental groups

A new wind farm being developed in Iowa is drawing comments from environmental groups and others, who feel that the energy mix of the \$4 billion project could be better directed towards other clean energy types.

The Environmental Law & Policy Center, a non-profit that focuses on environmental advocacy, is one of the groups convinced that the Wind Prime project in Iowa should be changed. As currently proposed, Wind Prime would deliver 2,042 megawatts (MW) of wind and 50 MW of solar by 2025.

The changing landscape of federal tax credits and shifting green energy efficiencies have made several groups question



the plan as currently proposed. The Sierra Club and the Iowa Environmental Council have also argued that a more nuanced mix of wind, solar, and battery storage would provide savings to

consumers and greener results for the environment.

Wind Prime is being developed by MidAmerican Energy, which is part of Berkshire Hathaway.

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Attendees learn about grant writing at Legislative Conference

MMUA's Government Relations Liaison Michael Siebenaler presented at the Legislative Conference on "How to approach grant writing," and his message was important for anyone who has ever done a grant or thought about pursuing one for their utility.

"Grant writing doesn't have to be scary," says Michael. He explained that almost all grants can be found at either grants.gov for federal grants or at mn.gov/grants for state grants. Because grants and grant deadlines happen year-round, keywords or saved searches can keep quality grant opportunities coming your way whenever one is released on these websites.

Michael emphasized the importance of connecting with the grant reviewer, who may not be a subject-matter expert like the manager of a utility. For that reason, doing away with abbreviations in your writing and being very clear about what is being requested is helpful. Using a cover letter or a letter of support is another important tool in telling a utility's story to a grant reviewer.

According to Michael, another important thing to remember is the funders want to use the grants to ignite organizations into doing something great that can be continued after the

grants end. They don't want to fund projects that create a state of dependency or need for ongoing grant funding to support the project long-term.

Among the reasons Michael's position has been created at MMUA is to help members become successful at grant seeking. "This process is a two-way street," said Michael. "This means that I share grant ideas with you and you can share them with me." Michael said he can assist members with information that can put them on a great path with their grant proposals.

"The great thing about grants is that if you have completed one or two, many of the components can be reused in other grant proposals," said Michael. "This means a daunting grant writing process can sometimes be reduced to an hour or less once this initial work has been done."

In today's world, even the smallest utility can participate in the grant process and may be well positioned to collect some of the dollars floating around. "Today's grants have a strong emphasis on rural America, areas that are in poverty, environmental justice areas, or tribal communities," said Michael. "This makes large parts of Minnesota a focus for these funds."



Michael Siebenaler of MMUA gave an informative and helpful talk at the Legislative Conference.

Michael said that grant writing can become a way of life for any organization, just like filing required paperwork or reports. "No one knows your organization as well as your people," said Michael. For that reason, he

advised against using third-party grant writers for some types of grants, and instead focus on making the work an in-house cost of doing business.

With all of the federal and state money that is being made

available, now is a great time to get involved in the grant process. Michael Siebenaler is here to help and can be reached at msiebenaler@mmua.org.

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Natural gas prices drop due to warm winter

A warm winter in both Europe and North America has led natural gas prices to drop to levels not seen in years.

On January 6, the United States benchmark natural gas price fell to \$3.52 million British Thermal Units, a level which had not been reached in 18 months.

Meanwhile, the European natural gas benchmark fell to \$74 per megawatt-hour, the

lowest level since before Russia began its invasion of Ukraine in late February of 2022.

A warm winter on both continents as well as stockpiling of gas by Europeans have eased concerns about shortages, resulting in a moderation of pricing. Europe planned for the worst by aggressively acquiring liquefied natural gas from abroad and upping supplies from other Western sources.

Willie Phillips named as acting chair of FERC

On January 3, the White House named Willie Phillips as the new acting chair of the Federal Energy Regulatory Commission (FERC).

Phillips received the appointment after Senator Joe Manchin, chair of the Senate Energy and Natural Resources Committee, refused to hold a confirmation hearing to reconfirm Richard Glick as the chair of FERC.

As acting chair, Phillips is

expected to stay the course. FERC now has four commissioners, which may make consensus more difficult.

Phillips has served as a FERC Commissioner since December 2021, and previously was chair of the Public Service Commission of the District of Columbia, as well as assistant general counsel for the North American Electric Reliability Corporation.

Automakers, solar energy providers to set standards for virtual power plants

Virtual power plants (VPP), which consist of distributed power resources like electric vehicles, home solar batteries, and other power sources, have been growing quickly over the last few years.

Now, major automotive companies as well as solar energy providers are planning to establish standards for scaling up these distributed resources so

they can more effectively help the grid when they are called upon.

This initiative, called the Virtual Power Plant Partnership (VP3) and run by nonprofit RMI, includes automotive backers General Motors and Ford, technology company Google, and solar energy producers SunPower and Sunrun. Besides establishing standards, the group also plans to lobby on behalf of VPPs.

FERC approves plans to clear PJM Interconnection backlog

The Federal Energy Regulatory Commission put forward its decision not to review new interconnections in the PJM Interconnection until early 2026, instead focusing on the elimination of its existing backlog.

The PJM Interconnection had 2,700 projects waiting in its queue as of early May 2022. To clear this backlog, approximately half of the projects will be expedited starting in 2023.

To prevent backlogs from happening in the future, interconnection candidates will have to proceed through a series of steps to demonstrate that their project is ready to interconnect. These will include things like showing complete control of their sites and readiness to deposit funds.

PJM operates the grid and wholesale electricity markets in 13 Mid-Atlantic and Midwestern states.

FERC and stakeholders discuss future of interregional transmission transfer

The Federal Energy Regulatory Commission's (FERC) leaders and stakeholders met in December to discuss planning regarding interregional transmission transfer, which is the ability to transmit electricity between the regional service operators.

The importance of this issue rose to the forefront after the 2021 Texas winter storm, which shut down the Texas power grid. Because the state's power grid is largely disconnected from the rest of the country, Texans didn't have the ability to draw

on regional transmission that could have saved the state a lot of grief.

Studies presented at the meeting showed that benefits from increased interregional transmission transfers could be as high as \$180 billion through 2050. Because of the financial and human advantages of increased transmission transfers, attendees also pondered the setting of minimum transfer capability requirements between grids.

These proposals brought a mixed reaction. Some stakeholders

and utilities argued that their amount of interregional transmission transfer was sufficient and that further regulation or rulemaking from FERC on the topic would be undesirable. Other stakeholders emphasized the continued danger to the grid from weather or human actions and argued for the idea of a minimum transfer capability requirement. Proponents of a requirement put forward 15 percent of peak load as a transfer capability; most current transfer capability levels fall far below this figure.

State Auditor reminds counties and towns of authority to remove snow from private property

Over the past few months, a lot of snow has fallen across much of Minnesota and surrounding states.

When snow is on private property and interfering with public infrastructure, it can sometimes be a difficult situation.

The Minnesota State Auditor reminds counties and towns that they have statutory authority to remove snow from private property. The law that governs this area is Minn. Stat. § 160.21. One caveat is that removal must not delay or interfere with the

removal of snow from public highways.

The State Auditor advises counties and towns to always consult their attorneys to ascertain the scope of allowable snow removal activities in their specific jurisdiction.



Wausau, Wisconsin becomes first city in the state to treat all municipal water for PFAS

A new water plant in Wausau, Wisconsin is helping the city address its serious per- and polyfluoroalkyl substances (PFAS) problem by treating all city water for PFAS, a first in the state.

Wausau was in a unique position, as all of its city wells were contaminated with high levels of PFAS. This fact was brought to light about a year ago, as the city was in the process of building its new water plant. Since the city had such widespread contamination, it was not possible to switch to other wells.

As a result, city residents had to use filtering pitchers until the new water plant system came online on December 20, 2022.

The water plant uses a temporary filtering system that is effective but expensive to run. It works by using a PFAS-attracting resin with an anion exchange filtering system. The maintenance cost is about \$800,000 a year, making this a short-term solution.

Within the next two years, Wausau will install a permanent solution that uses a granular activated carbon system. This

system will trap PFAS in the carbon when it is activated by heat.

These important projects have been expensive for the city of Wausau. However, increased knowledge about PFAS and the widespread contamination of the city's water supply made whole-city water remediation necessary. Wausau plans to take what it learns and share it with other communities also dealing with widespread PFAS contamination.

Biden administration releases blueprint for transportation decarbonization

On January 10, the Biden administration released its first blueprint for the decarbonization of the transportation sector, which it plans to accomplish by 2050.

On a basic level, the blueprint lays out three strategies for decarbonization of transportation: increasing convenience, improving efficiency, and transitioning to clean options.

- Increasing convenience will mean creating land use, zoning, and planning laws that are centered on the goal of making jobs, schools, crucial services, and entertainment more proximal to where people live.

- Improving efficiency will expand access to efficient mass-transit options as well as make all forms of transportation more efficient.
- Transitioning to clean energy will entail the evolution of all American transportation types to electric or clean fuel options.

The report notes that the third point, transitioning to clean energy options, will be the main driver behind the decrease of carbon emissions in the sector long term, with the first two supporting the objective.

The blueprint also puts forward quantifiable goals for the years 2030, 2040, and 2050, leading

up to the full decarbonization of transportation. Some of the goals for the year 2030 include:

- Work with international companies and foreign countries to set defined targets and standards that will drive the decarbonization of international shipping and aviation.
- Invest in and demonstrate clean technologies that can be used in the transportation sector.
- Provide incentives for greater use of efficient travel modes.
- Partner with communities to create more transportation

convenience for all citizens when designing new areas or redeveloping old ones.

The new plans also put forward defined targets for the decarbonization of different transportation types. The targets for 2030 include:

- 50 percent of new light-duty vehicle sales being zero-emission by 2030.
- 30 percent of medium and heavy-duty truck and bus sales being zero-emission by 2030.
- Aviation emissions reduced by 20 percent by 2030.

The blueprint has mutability built into it, so that it can be modified as the transition away from carbon continues in transportation. Its “whole of government” approach will likely continue the methods that have already been seen in the past few years: public/private partnerships, collaborations between governments and local entities, and funding for research that will drive progress toward the decarbonization of transportation. With transportation accounting for about one-third of greenhouse gas emissions, the blueprint charts a path for decreasing this impact over the succeeding years.

America's largest-ever clean energy manufacturing project announced

A subsidiary of South Korea-based Hanwha Corporation, Hanwha Q Cells, has announced plans to invest \$2.5 billion in the construction of a new solar panel and component plant in Georgia, as well as the enlargement of solar production at an existing plant.

The expansion will also create 2,500 new jobs.

The plants will have ambitious production goals. Hanwha's new plant will manufacture 3.3 gigawatts (GW) of solar components and panels a year, while increased production at its existing plant will assemble an additional 2 GW of solar panels a year.

The new plant will begin production in late 2024. Both world supply chain issues and investments emerging from the Inflation Reduction Act (IRA) are seen as movers behind this project.

Minnesota-North Dakota gas pipeline sees delay

A 14-mile natural gas pipeline connection that will connect Minnesota's Viking Pipeline to Grand Forks, North Dakota, has hit a delay that will slow its construction.

Paperwork errors were found in an application that will need to be fixed before funds are awarded for the project.

The pipeline is needed in order for Grand Forks to access the gas supply it requires for further growth and development.

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Minnesota Biofuels Association releases annual assessment

The Minnesota Biofuels Association (MBA) released its annual report in late 2022, with an emphasis on their success in promoting and expanding the use of E15 (Unleaded 88) in the state.

E15 is an ethanol blend that can be used in most passenger cars and trucks produced after the year 2000. Because it has a higher ethanol content (10.5 percent to 15 percent) than standard E10, which has an ethanol content of approximately 10 percent, E15 is a greener choice that also can be cheaper than standard gasoline.

Before 2019, E15 was not sold from June to September due to the fuel's formation of ozone (smog) in the summer months. A new EPA rule allowed E15 to be sold year-round from 2019-2021, until the rule was retracted in court.

In 2022, the Environmental Protection Agency granted a waiver so that E15 could be sold

throughout the summer due to high gasoline prices and supply shortages related to the war in Ukraine.

As a result of the emergency waiver and the establishment of more E15 infrastructure over the past few years, sales of E15 in Minnesota reached their highest levels on record. Sales of E15 passed eight million gallons per month for five months last year, which had never been accomplished in a single month previously.

Minnesota continues to add to its biofuel fueling infrastructure, and now leads the nation with 422 gas stations that offer E15. Almost 13 percent of all transportation fuel was ethanol in Minnesota in 2020, which is also the highest in the country.

MBA plans to continue educating legislators and the public about the benefits of biofuels for a variety of uses, as well as pushing to make E15 gasoline available year-round on a permanent basis.

Minnesota PUC approves route for first carbon-capture pipeline, environmental review remains



On January 5, the Minnesota Public Utilities Commission (PUC) approved by a 5-0 vote the route for the first proposed carbon capture pipeline in Minnesota.

The Summit Carbon Solutions pipeline will run from the Green Plains Ethanol Plant in Fergus Falls to North Dakota, where it will be connected to a network of carbon capture pipelines covering

some 2,000 miles in five states. If completed, the pipeline is expected to collect carbon emissions from the ethanol plant and pipe them to North Dakota, where the liquid carbon dioxide will be stored underground.

Still to be completed is an Environmental Impact Statement (EIS) for a 28-mile span of the pipeline in Minnesota so the plan can be reviewed from an environmental perspective. The PUC also approved this measure on a 5-0 vote after lobbying from a variety of organizations and individuals. Other proposed portions of the future pipeline that are envisioned for west-central and southern Minnesota have been excluded from the EIS at this time.

The pipeline is part of a series of carbon capture projects being developed by Summit Carbon Solutions that will cost \$4.5 billion to construct.

United Kingdom and Germany set daily wind power generation records days apart

The United Kingdom (UK) and Germany set new wind power generation records on December 30, 2022, and January 4, 2023, respectively, as wind generation becomes a growing part of the countries' energy mix.

The UK produced 20.91 gigawatts (GW) of wind power on December 30, which on that day meant renewable energy and nuclear generation accounted for 87.2% of total power. Germany produced 50.23 GW of wind power on January 4.

The two countries are moving forward aggressively on renewable energy in the face of Russian natural gas cuts and world climate change goals.

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COVID wastewater testing from Chinese flights to begin at Canadian airports



Beginning in late January, flights arriving in Toronto and Vancouver from Chinese destinations will have their wastewater pumped and individually tested for COVID-19.

This project will allow the airports to analyze the level of COVID that is entering the country, as well as where in China COVID prevalence is higher.

Scientists at the Centers for Disease Control (CDC) are also considering similar wastewater analysis in the United States.

Many countries in the West, such as Canada, the United Kingdom, and the United States, have mandated negative COVID tests for all passengers traveling from China. These moves have come after China lifted its "Zero COVID" policy and the disease began to rapidly spread in Mainland China and Hong Kong.

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Holtec International files patents for system of converting coal plants to nuclear

Holtec International, a company that designs and manufactures parts for nuclear reactors, has announced the filing of provisional patents for a system that will allow for the conversion of coal-fired power plants into a small modular nuclear plant.

The innovation centers around the use of multi-stage compressors that are able to take the low-pressure steam of a small modular nuclear plant and convert it to the pressure and heat needed for the generator of a typical coal-powered plant. By accomplishing this, most of the existing infrastructure at a coal plant can stay in place while the fuel for generation



evolves to a carbon-free source.

Holtec, whose patents support its existing SMR-160 light-water modular reactor, sees the benefits of this idea as two-fold. Existing coal-fired sites can

continue operation with much of their infrastructure intact, saving money and negating the need for additional land acquisition and the construction of new power plants. Another benefit is that much of the power plant's existing workforce can stay employed, preventing job losses from the energy transition.

The SMR-160 can also deliver steam at any pressure, opening up the opportunity for the system to provide steam to industrial settings or district heating systems. The small modular nuclear plant is proceeding through various stages of the licensing process in Canada, the United Kingdom, and the United States.

New deposits of rare earth metals discovered in northern Sweden

On January 12, representatives of the Swedish government and Swedish state-owned mining company LKAB held a press conference to announce that more than one million tons of rare earth metals have been discovered in the northern part of the country.



Rare earth metals are a crucial component of electric vehicles and wind turbines.

The discovery is in the Kiruna area, which is the northernmost city in Sweden and is located in Lapland province.

What makes the discovery all the more remarkable is that rare earth metals are currently not mined in Europe at all,

leaving the continent dependent on other parts of the world for the metals.

LKAB will begin the paperwork for mining the metals this year, but it will take approximately 10-15 years for active extraction to begin taking place.



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Wind farm approved for Hughes and Hyde Counties in South Dakota

On January 5, the South Dakota Public Utilities Commission (PUC) approved a permit for North Bend Wind Project, LLC.

The 3-0 vote allows permitting for a wind farm that will consist of up to 71 wind turbines to be located in Hughes and Hyde Counties in central South Dakota.

The wind farm, which is expected to open by the end of 2023, will generate as much as 200 megawatts of output. The cost of the project is currently estimated at approximately \$265-280 million.



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Alexandria Light and Power finalized the sale of its fiber internet network to Arvig on January 18. The network serves about 130 business customers in Alexandria. Arvig, based in Perham, Minnesota, provides telecommunications services to customers in more than half the counties of Minnesota.

Blue Earth's post office may be renamed to honor Representative Jim Hagedorn, who was born there and lived in the city during his time in Congress. Current 1st District Representative Brad Finstad has introduced legislation in Congress to make the change.

Blue Earth's City Council also discussed funding to improve its current water treatment facility.

Buffalo City Administrator Laureen Bodin has retired. Bodin spent 42 years with the city, including over 30 years as Assistant City Administrator.

Detroit Lakes Public Utilities returned more than \$74,000 in energy efficiency rebates in 2022 to more than 100 residential and commercial customers.

East Grand Forks Water and Light will be replacing the majority of the utility's water meters in a project that will start in early 2023 and continue through the end of the year. Most of the utility's water meters have reached the end of their useful life and require replacement.

Olivia City Administrator Tesa Tomaschett has been offered the post of County Administrator for Swift County.

Owatonna Public Utilities (OPU) recycled Christmas lights free of charge for residents in the month of January. **OPU** also hosted an annual housing summit on January 20 so that landlords can learn from each other and find methods of helping renters.



Otter Berry Farm near **Perham** was the site of a stop on a United States Department of Agriculture tour, which has seen representatives from 30 foreign governments visit farms and agricultural locations around the state.

Pierz mayor Toby Egan resigned due to recent health events.



state of Minnesota with fun events and hockey games.

Shakopee will also see its Amazon sorting center close at the end of March, which will result in the loss of 680 jobs. The city's larger Amazon fulfillment center will remain open.

Thief River Falls was named a "Bicycle Friendly Community" by the League of American Bicyclists. According to the organization, Minnesota is the fifth-most bicycle friendly state in the country.

Shakopee has been chosen as the host site of Hockey Day Minnesota in 2025. Hockey Day Minnesota is an annual event hosted by the Minnesota Wild that celebrates hockey in the

Cow manure will become renewable energy in northwest Iowa

Because of the local dairy industry, Sioux Center, Iowa has a renewable form of energy in abundance: cow manure.



Thanks to a new project, this waste product will be put to innovative use: supplementing the community's natural gas supply.

Sioux Center will build a pipeline from surrounding dairy farms that feed into a digester, which will scrub the waste and turn it into natural gas. Once the process is complete, the resulting product will go directly into the city's natural

gas distribution system.

The project's partners include large local dairy farms and Novilla RNG, which has built similar projects in other states. The company is paying \$5.2 million to construct the 8-mile gas line. The pipeline's construction will start in spring of 2023.

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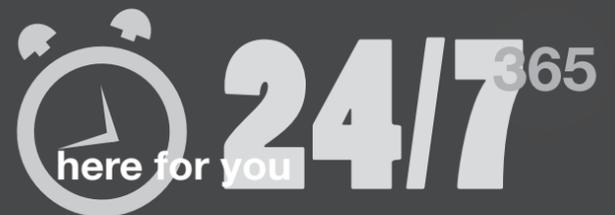


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The United States government issued a six-month license to Chevron Corporation to engage in expanded activities at four Venezuelan joint ventures in which it is participating. One of these actions will be the arrival of a tanker of crude oil in the United States: the first time such a shipment has been made from Venezuela in nearly four years. Chevron is one of the last American oil companies still operating in Venezuela.

The multinational energy company Shell nearly reached a deal in 2022 to sell its Norwegian oil and gas fields in Norway. Company leadership says oil production peaked in 2019 and that Shell is gradually transforming itself into a renewable energy company.

Japanese scientists have begun investigating the emerging science of generating electricity from snow. Researchers are planning to power a turbine with the energy that is produced when liquid cooled by snow is vaporized by the heat of the surrounding air.

The Illinois Department of Health has started a new website that will provide the public with information about COVID wastewater levels in Chicago and across the state. Samples are taken twice a week and analyzed at the University of Illinois Chicago.

A report from the Rhodium Group, a nonpartisan research firm, said that carbon emissions in the United States went up 1.3 percent in 2022 from the previous year. Transportation and industrial emissions rose 1.5 percent and 1.3 percent, respectively, even as carbon emissions from power plants fell.

Reuters reported on January 11 that the American clean energy revolution is being stifled by something that is affecting many sectors: not enough workers. Some employers are even having to draw trainers and workers from other countries in order to meet demand.

Time reported that an uptick in attacks on the nation's power grid seems to be mostly originating with domestic terrorists, who are learning from previous attacks in order to create damage and receive media attention.

Energy Intelligence forecasts that OPEC+ will be focused on having a world oil price target of \$80-90 a barrel this year, as global recession fears and

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1 www.bls.gov/oes/current/oes499051.htm | 2 www.bls.gov/oes/2017/may/oes499052.htm | 3 www.bls.gov/oes/2017/may/oes472152.htm

the green transition impact the market.

Pakistan experienced its second major outage in five months on January 23, when an overnight energy-saving measure failed. When the system was unable to be restarted, the grid failed, with as many as 220 million people left without power.

In 2022, China once again led the world in the dollar amount of its yearly clean energy investments. The nation spent \$546 billion, compared to the United States, which spent \$141 billion, and the European Union, which invested \$180 billion.

Reporting during the Minnesota legislative session noted that nearly 300,000 households in Minnesota still lack access to internet that has 100 megabits per second download speeds. This is the speed required to stream, use video chat, or play games online without slowdowns.

On January 24, the Minnesota Public Utilities Commission approved a rate increase of 9 percent for Minnesota Power. The average residential customer's bill will increase by 2 percent above the interim rate currently being paid.

On January 26, the United States Department of Energy announced that it would make \$100 million in funding available to expand U.S. biofuels production.



On January 31, General Motors (GM) and Lithium Americas Corporation announced that they will jointly invest to develop the Thacker Pass mine in Nevada, which is the third largest lithium source in the world and the largest in the United States. GM will make a \$650 million equity investment in Lithium Americas as part of the deal.

Xcel Energy declared an "Energy Action Day" on January 31 as cold weather hit the state. The utility called on customers to reduce and shift their energy usage the evening of January 30 and into January 31.

ERCOT fights for immunity from lawsuits in wake of 2021 winter storm

The Electric Reliability Council of Texas (ERCOT), which operates Texas' power grid and supplies power to more than 25 million customers, went before the Texas Supreme Court on January 9 to argue that it is a governmental agency and cannot be sued.

The issue rose to the fore after the 2021 winter storm that wreaked havoc in the state and caused damage to people's lives and the economy. For this event alone, \$3.2 billion in claims have already advanced through the legal system.

However, attorneys for ERCOT argued before the bench that ERCOT is a governmental agency and is thus immune to

lawsuits. One previous ruling had agreed with this appraisal, while another argued that ERCOT was a membership-based non-profit and not a government agency.

Attorneys for ERCOT argued that since the Texas Public Utilities Commission (PUC) had authority over ERCOT, the PUC was the correct venue for claims to be addressed. In an amicus brief, the Office of Texas Governor Greg Abbott concurred with ERCOT's position.

The Texas Supreme Court had an opportunity to rule on ERCOT's status in 2021 but did not do so. A decision in 2023 is expected by July.

South Korean scientists develop polymer capable of filtering 99 percent of microplastics and VOC contaminants

Research published in the journal *Advanced Materials* revealed that scientists at the Daegu Gyeongbuk Institute of Science and Technology in South Korea have created a porous polymer material able to filter microplastics and volatile organic compounds (VOCs) from water.

The new polymer has several advantages over existing technologies. Current filtering technologies of this type have been more expensive and require thermal energy. The new polymer is not only inexpensive and doesn't require thermal energy, but it is also able to filter 99.9

percent of VOCs and microplastics at high speeds.

The team, led by Professor Park Chi-Young, is confident that this technology will be able to be adopted by a variety of water providers.

Wisconsin declares second energy emergency in a month due to severe winter

Wisconsin Governor Tony Evers signed an executive order on January 6 that put into place the second energy emergency declaration in a month.

Severe winter weather has made the distribution of heating oil and propane difficult across much of the state. The

second executive order, which succeeds the previous order of December 22, will exempt fuel carriers from specific state and federal requirements, as well as allow for out-of-state mutual aid efforts to proceed faster.

The second executive order will remain in force for 30 days.



CenterPoint Energy consolidates management structure

CenterPoint Energy, based in Houston, Texas, started 2023 with the announcement that the company will be streamlining and consolidating various parts of its management structure.

All parts of the company's natural gas business, which serves 4.2 million customers in six states, including Minnesota, will now be under the same leadership umbrella. CenterPoint is also consolidating its Houston Electric and Indiana Electric businesses under the same leadership.

In a statement, CenterPoint emphasized the continued importance of its Regulatory Services and Government Affairs team to the overall direction of the organization. CenterPoint also noted several promotions and leadership changes taking place at the beginning of the year, including the previously announced promotion of Jason Wells to President and Chief Operating Officer of the organization. CenterPoint's CEO, Dave Lesar, remains in his role.

PJM Interconnection sees near-25 percent generation shutdown during late-December storm

The PJM Interconnection, the Regional Transmission Organization for thirteen eastern states and the District of Columbia, experienced a near-25 percent generation shutdown on the morning of December 24, 2022.

The event brought the system close to experiencing rolling

blackouts.

A drop in temperatures and an increase in electrical demand helped fuel the problem. As temperatures dropped sharply, several gas-fired plants were unable to come online and were also unable to give PJM sufficient notice of their issues. Low pressure and various technical

challenges due to the cold rendered these plants inoperable. Approximately 70 percent of the 46 gigawatts in outages came from natural gas plants.

PJM plans to study the event further and release a full analysis in April 2023.

Upcoming Events

Electrical Skills Training for Water/Wastewater Operators

March 14-15
MMUA Training Center

This course is offered as supplemental training for water/wastewater operators and support staff. This comprehensive electrical training program can benefit non-electricians to improve skills and gain competency. Learn more by visiting www.mmua.org/event/elec-skills-www-2023.

Substation School

April 4-6
Arrowwood Lodge at Brainerd Lakes
Baxter, MN

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

Generation School

April 18-20
Hutchinson Event Center and
Glencoe Light & Power Plant

This school offers hands-on training on Fairbanks Morse, Cooper/Enterprise, and Caterpillar engine sets. This is ideal training for well-seasoned operators or for those who are new to the power plant. Please visit mmua.org/event/generation-2023 to learn more. Register by March 18 for best rate.

Underground School

May 9-12
MMUA Training Center
Marshall, MN

Whether you are a seasoned journeyman looking to stay current or are an apprentice just starting out, this school offers something for everyone. Individuals will rotate through six sessions, covering a variety of topics that can enhance safety and improve efficiency. To learn more, visit mmua.org/event/underground-2023. Rates increase after April 7.

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