

## 2022 Generation School provides hands-on problem solving experience Participants visit member utilities in Hutchinson, Delano, and Glencoe

MMUA held its 2022 Generation School from April 19-21 in Hutchinson, Delano, and Glencoe. Personnel from sixteen member utilities participated, as well as attendees from SMPPA and three nonmember utilities.

Day one at the Hutchinson Event Center featured welcome speeches from Mike Willetts and Paul Helling of MMUA. Brian King and Mike Wolverton from Fairbanks Morse were in attendance as trainers,



Generation School:  
see page 8 please

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## New FERC report depicts higher fuel prices and complications with energy transition

New FERC report depicts higher fuel prices and complications with energy transition.

A New FERC report released on April 21, 2022, describes an energy market in a state of flux due to heightened demand for fuel, changes in energy generation, and the impact of more extreme weather. While the overall trendlines are positive, 2021 was a bumpy year for energy in gen-

eral. Even though Minnesota avoided the worst of the direct impacts from meteorological conditions, changing energy generation and the impacts of higher fuel prices meant Minnesotans felt their effects.

Emerging from the pandemic year of 2020, demand for energy increased across almost all sectors. This was reflected in increased electricity prices in 2021, which were even more notice-

able following declining prices in the prior two years. Higher wholesale electricity prices were largely caused by elevated natural gas prices and the effects of historic winter storms.

The increase in US natural gas prices was not unique. Higher natural gas prices globally were driven by increased demand and the growth of liquid natural gas (LNG) exports abroad. The natural

gas supply was up as well, but demand outpaced supply as pandemic restrictions eased and use patterns changed. In 2021, the U.S. exported 3.6 trillion cubic feet of LNG to 38 countries, with the most going to South Korea. The United States also continues to import significant amounts of natural gas from Canada.

With natural gas being the marginal fuel source for electricity generation at most hours, higher electricity prices were bound to occur. As natural gas prices increased in the middle of 2021, power providers began to use coal as it became more economical to burn than gas. This activity caused coal stockpiles to drop quickly, and by September they were below the five-year average. MISO

quickly put into place reporting requirements so that stockpiles can be better managed in the future.

Crude oil prices increased 59% in 2021 as demand went up and oil firms kept production relatively flat. The volatility of the oil market, including the moment in April 2020 when a barrel of oil was trading for -\$37.63, sent some producers into bankruptcy. It caused many others to minimize new spending on investment and exploration, all of which reduced sources of production in 2021.

Energy generation changes also affected the market in 2021. Most capacity additions came from solar and wind, which are less reliable in meeting baseload requirements. The most retirements of

generation resources occurred as coal plants ceased operation. However, the turbidity of the year and the increased interest in coal from an economic standpoint led to the lowest retirement of coal-fired capacity since 2014.

One interesting change was that battery storage moved into fourth place in new generation, behind only natural gas, wind, and solar. Independent System Operators like CAISO have used battery storage to provide more flexibility in providing solar-derived electricity when demand is high.

Along with new investment in generation came investment in electric transmission. Over 1,000 line-related transmission projects entered service in 2021, an increase

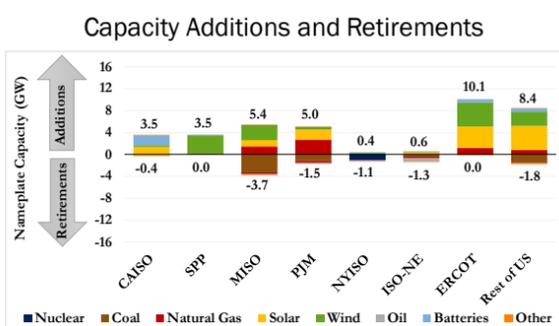
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### Increased Solar, Wind, Gas-fired, and Battery Installed Capacity





## Virtual *ROUNDTABLE*

# Electric Industry Supply Chain Issues

May 24, 2022 2:00 pm to 3:30 pm

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## SMMPA makes Sherco 3 change

Changes to SMMPA's structural ownership of Sherco 3 in Becker are paying off.

The unit now runs only when it is economical to do so and is shut down when it is operating at a loss. As a result, the unit went from a net operating loss in 2020 to a positive margin in 2021.

Sherco 3 is now treated as a single-owner unit that is much more economically sound.

In addition, SMMPA is now buying coal from Xcel Energy at significantly lower prices than it received from its previous supplier.

## Addressing labor shortage will require new approaches from MMUA and members

It's not like the labor shortage fell out of a clear blue sky.

Back when dinosaurs roamed the earth, a high school teacher showed my social studies class a population chart depicting the bulge of Baby Boomers. He asked, "What will happen when this huge group of people ages out of their earning years? What effects will occur if there aren't enough personnel to do the work that needs to be done?"

To a group of teens more concerned about winning Friday's game, it seemed pointless to wonder. Surely in thirty-five or forty years, someone would think of something.

Ah, the optimism of youth.

The decades have flown by and here we are. The long-predicted labor shortage is upon us, and it seems someone failed to do the homework. In all this time, we seem to be lacking a comprehensive approach to dealing with a lack of worker resources that is likely to get worse before it gets better.

Across Minnesota, utilities struggle with finding and retaining competent people. When our recent member survey asked about the biggest challenges municipalities are facing, workforce issues were a resounding theme. This respondent's comment sums up the sentiment shared by many others:

"The biggest challenge daily is continuing to find ways to move the utility forward to meet the demands of the

### MMUA plans "Supply Chain Issues Round Table" May 24

Supply chains around the world have been disrupted by COVID, and the electric industry is no different.

In response, MMUA is holding an Electric Industry Supply Chain Issues Virtual Round Table on May 24 from 2:00 pm to 3:30 pm. Industry experts will share their expertise and Round Table participants can share advice and information with each other.

Discussion topics include:

What is occurring in the present and future supply chain for material.

What is occurring with supply chain issues from a national perspective.

What is the MMUA-specific information we have on hand and what more do we need.

There is no cost for the event, but registration is required. Please register online at [mmua.org/event/supply-chain-rnd-tble-2022](http://mmua.org/event/supply-chain-rnd-tble-2022) or email Rita Kelly with your name, title, utility/city/company name and email address.

changing energy landscape with current staffing levels, and the lack of highly skilled employees to back-fill the organization when people are out on leave."

This is not a problem that is unique to utilities or to out-state areas. It is shared across most of the workforce, though the trades are being hit particularly hard. Decades of societal messages telling young people that economic success is best ensured by getting a college degree has wreaked havoc on recruiting and training skilled tradespeople. Many career seekers believe working in the trades pays poorly and lacks prestige.

Yet, the facts paint a different picture.

It is true in many cases that a college degree leads to good earning power. But not all degrees are created equally, there are few guarantees of high wages, and college attendance becomes more expensive every year. In 2020 (the last year for which data is available), the average Minnesota college graduate was starting life with more than \$32,000 in federal student loan debt. Many also carry private loan debt on top of that, averaging another \$30,000.<sup>1</sup> Yet the average starting salary for new college graduates in Minnesota is just \$37,197.<sup>2</sup>

1 Student Loan Debt and the Class of 2020, 16th Annual Report (November 2021), published by The Institute for College Access and Success.

2 See ZipRecruiter data at <https://www.ziprecruiter.com/Salaries/College-Grads-Salary-in-Minnesota> Other reports exist which seem to suggest higher average wages for new grads, but these are based on reports from college placement of-

It doesn't take an MBA to see that it's going to take a lot of time for this generation of alums to dig out. Where is the prestige in being saddled with debt until your mid-forties?

Meanwhile, apprentice line workers at municipal utilities in Minnesota are earning between \$37,000 and \$91,000 per year, and journeymen are earning between \$59,500 and \$102,000 per year typically with little to no educational debt.<sup>3</sup> Professional tradespeople in other areas utilities may seek—mechanics, welders, pipefitters, and so on—also make good money. They enter the workforce and start earning sooner than college students as well.

Attracting young people to our profession should not be a hard sell. We simply have to start selling the great option that is presented by the trades in general and municipal utilities in particular. Here are some things MMUA is looking into as part of our strategic intent to be an ever-more relevant resource for our members.

-We will be forming a task force of interested MMUA member representatives to explore strategies and tactics that will increase the flow of young workers and career-switchers to our industry. If you or someone at your utility would like to be involved in this work, please let me know.

-We will cultivate alliances and partnerships with similar associations, nonprofit workforce groups, and relevant government agencies to carry out tactics that act as a

3 MMUA salary survey 2021

### From My Desk to Yours

**Karleen Kos**  
MMUA CEO



force multiplier in communicating the value of career options in our field and in our communities.

-We will explore program development and grant funding options to attract both young people and career-switchers to our industry. One of the biggest un- or under-explored avenues for bolstering our numbers is to look beyond "the usual suspects." Taking positive steps to encourage women, older workers, urban youth, and others who would not usually think of a utilities career needs to be part of our routine efforts going forward.

-We will explore program development and grant funding options to expand the

reach of MMUA's apprenticeship program. We currently have a waiting list for this popular offering, and we can do more—more quickly—with additional instructors.

The workforce shortage didn't fall out of a clear blue sky, and it won't get fixed quickly. Birth and retirement statistics suggest it is going to get worse before it gets better. But associations like MMUA exist to promote their industries and help members solve problems. I can think of few challenges MMUA could address that will make more difference to municipalities over the long term than this one. Beyond any sky is the entire universe of possibilities.

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## 2022 Minnesota Energy Factsheet outlines positive Minnesota trends

The 2022 *Minnesota Energy Factsheet*, a new report released by Clean Energy Economy MN and the Business Council for Sustainable Energy, showed several positive trends for Minnesota's energy generation and conservation future.

For one, Minnesota is becoming a state that is nearly energy independent. Electricity imports in 2021 fell to 10%, the lowest in two decades.

A big part of that is energy efficiency programs. The report notes that Minnesota has been leader in energy efficiency programs since the 1980s, and it shows. Minnesota is ninth in the country in energy efficiency, and leads the Midwest in this category.

This efficiency even extends to individual electricity use. Minnesotans use less electricity per person than the average American, helping keep energy use in check.

Efficiency efforts began in Minnesota with the Conservation Improvement Program (CIP) in the 1980s. The program motivated utilities

to spend money on energy efficiency. These efforts have been compounded by the Next Generation Energy Act (2007) which required utilities, beginning in 2010, to develop CIP plans that would achieve energy savings equivalent to 1.5% of annual retail sales each year.

In 2021, Governor Walz signed the Energy Conservation and Optimization Act. This act increased the savings goal from 1.5% to 2.5% and increased spending requirements for energy efficiency programs that serve low-income customers. Utilities were given guidelines to measure energy savings and determine their best path towards these goals.

Along with efficiency, Minnesota's focus on renewables has also been stronger than the average state. Minnesota generates 52% of its electricity from zero-carbon sources, including renewables and nuclear. Renewables alone provided 28% of Minnesota's energy mix.

The state's Renewable Energy Standard (RES) requires

Minnesota's IOUs to obtain 25% of their energy from renewables by 2025.

Wind made up the biggest renewable in Minnesota's energy mix, at 22%. Solar provided 3.2%, hydro 1.5%, and biomass 2.2%.

Correspondingly, Minnesota's power-based greenhouse gas emissions have also dropped 40% in the past decade. Power sector CO2 emissions have actually fallen 45% in Minnesota since 2005.

Coal and gas still play a large and important part in Minnesota's overall energy mix, although their percentage of the overall mix have dropped slightly in the past ten years.

Coal in 2021 made up 27% of Minnesota's electric generation mix, down from 43% in 2012. Gas made up 21% of the electricity mix, up from 13% in 2012.

Minnesota's nuclear power plants have consistently provided from 20-25% of Minnesota's overall electricity in the past ten years.

Planned closures of all three reactors in the next

twenty years will have a large impact on Minnesota's electrical mix.

However, it is important to note that by their closing dates, these reactors will have run for far longer than was initially planned. Monticello is among the oldest nuclear power plants in the United States, opening in 1971.

Minnesota's capacity build of new plants has been almost entirely renewable over the past ten years, with some new gas capacity coming online in 2017, 2018, and 2019. Almost all retirements were coal, with some gas plants as well.

No new coal-based power plants have been built in Minnesota during the past decade.

Minnesota has retired 953 MW of coal plants in the past ten years, and all coal plants located in Minnesota are scheduled to close by 2035.

These will include the Allen S. King plant in Oak Park Heights and Sherco, located in Becker.

The downside of aging/closing plants and the build-out of new facilities is seen in the rates that consumers pay for electricity in Minnesota. Rates have been rising over the last ten years,

In 2021, Minnesota consumers' electric rates averaged 11 cents/kWh, up 26% from 2012. Minnesota's electricity prices are almost identical to the national average.

Minnesota's Energy Factsheet illustrates many things that Minnesota can be proud of, as well as challenges to be faced in the future.

Focusing on the energy efficiency of consumers and producers alike is something to celebrate and continue emphasizing. Planned closures, however, are a challenge to the electricity mix and consumers' pocketbooks.

However, things overall are looking up. The fact that Minnesota's greenhouse gas emissions have never returned to pre-pandemic levels, even as the economy has rebounded, is but one hopeful sign for the future.

### DOE finalizes light bulb rules

On April 26, the Department of Energy (DOE) finalized a pair of rules that will phase out inefficient incandescent bulbs in favor of LEDs and fluorescent light.

DOE estimates that the phaseout will save Americans \$3 billion dollars every year, and prevent 222 million metric tons of carbon dioxide from entering the atmosphere over 30 years.

The rules will not apply until 2023, with retailers allowed to sell the bulbs until July of 2023.

The path of phasing out incandescent light bulbs has been a long one. The process started with the Energy Independence and Security Act of 2007, which was passed by Congress and signed by President George W. Bush.

Since then, the wattages and types of incandescent bulbs sold have slowly shrunk. The law initially planned to ban most incandescent light bulbs by 2012.

However, implementation and enforcement were delayed several times.

Incandescent bulbs are still widely used, but these rules will ensure that their long-delayed phaseout will finally occur.

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## MMUA “Stepping into Leadership” program meets in-person in Plymouth

MMUA’s “Stepping Into Leadership” program met in-person in Plymouth on April 27 and 28.

The 16-class series is MMUA’s newest program for leadership development in the utilities space, replacing the FirstLine Supervision program.

Attendees can expect to learn ways to improve their leadership and become a better manager. By doing so, they will learn about themselves, their personal strengths, and how to be a strong leader in many different scenarios.

Participants are required to attend all sessions. Talking to fellow participants as well as homework assigned between sessions also helps reinforce the skills being learned and applying them to everyday work scenarios.

The classes are being taught by two instructors. Dana Haagenson has spent over a decade in the software industry, and has also served as a college professor at M State. She is a certified strengths coach who has coached over a thousand individuals and teams to discover their strengths.

Steve Wischmann is the owner of Horizon Performance Solutions, a leader-

ship and organizational development company that works to build professional capacity and success in individuals and teams.

He had over three decades of service in the United States Coast Guard and also worked in the Federal Government.

Mr. Wischmann has also worked as a professor in the areas of organizational and workforce development strategies. He has an M.A. in Public Policy and Management with dual concentrations in policy analysis and public management.

He served for six years as an Adjunct Professor at Hilbert College in Hamburg, NY, teaching both graduate and undergraduate courses in business management and public administration.

The program is split into four modules: “Building Self Leadership,” “Exploring Team Leadership,” “Strengthening Team Leadership” and “Fortifying Organizational Leadership”.

Prior to class, all participants complete the Leadership Development: A Competency-Based Self-Assessment©. It is recommended that a co-worker or supervisor complete the corresponding Co-Worker As-

essment© on the participant to establish a richer performance baseline.

Participants and co-worker/supervisor will retake the assessment at completion of the series to identify professional growth.

The trajectory of the education takes participants from examining their self-leadership abilities all the way through to implementation.

MMUA is excited to see how participants are taking what they learn and then using it to strengthen themselves, their utilities, and the communities in which they live.

Group 1 and Group 2 are underway or sold out, but Group 3 of “Stepping Into Leadership” commences on October 5, 2022. Watch your email in the coming months

announcing open registration for the next group.

“Stepping Into Leadership” offers wonderful tools for personal and professional growth that everyone can benefit from. Visit <https://www.mmua.org/events/schools/stepping-into-leadership> for information.



Class participants enjoyed some conversation after another interesting session.



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## MMUA fights to make public utilities and ratepayers whole after 2021 Texas winter storm

In one five-day period in February of 2021, the winter storm that crippled Texas and its electrical and gas infrastructure sent shockwaves across North America.

For many Minnesotans, the gas shortages and supply problems that followed down south led to pain in the pocketbook up north.

“For the average municipal rate payer in Minnesota, their out-of-pocket costs went up \$350-\$500 on one bill,” says Kent Sulem, MMUA’s Director of Government Relations and Senior Counsel.

Municipal utilities did their best to cushion the blow for their customers. Some dug into their financial reserves to subsidize the cost. Some utilities were lucky—they got their gas from Canada.

However, the overall impact of the storm was hard on both utilities and their ratepayers.

This legislative session, MMUA has been fighting in

the legislature for a one-time ask of \$35 million to make both utilities and ratepayers whole. The funds will cover the 5-day incident period of the winter storm.

Customers who were subject to the spike in rates will be eligible for a tax credit, which they can collect even if the credit is larger than their total usual eligibility.

The bill was noncontroversial last session but did not end up being part of the final package approved by the legislature in 2021. This year, the proposal is part of the major tax bill, which is anticipated to pass at the end of the legislative session.

“Rates in Kansas went up 600% after the storm,” says Sulem. “Minnesota still got hit with a 350% increase.”

MMUA is fighting hard to make sure that member utilities and ratepayers don’t have to absorb all of those costs themselves.

## CenterPoint Energy rate hike held to 3.9%

Minnesota regulators have set CenterPoint Energy’s proposed rate hike at 3.9%, citing hardships felt by consumers after the 2021 Texas storm. CenterPoint had originally proposed a rate hike of 5.1%, but this was rebuffed by consumers in public comment.

Gas bills have risen significantly for Minnesota gas consumers over the past year. Many consumers were upset with CenterPoint’s requested rate increase, given their higher gas bills and CenterPoint’s relative prosperity during the same period.

In addition to the 3.9% hike which is expected to increase ratepayer revenue by 4.7% for CenterPoint, customers will be paying some \$409 million in surcharges between September 2021 and November 2026. According to CenterPoint, this will average about \$4.86 per month for residential based on their usage of natural gas. The surcharges stem from the spike in commodity prices during 2021’s winter storm.

## Biden Administration announces Rural Partners Network to link rural America with resources

On April 20, the Biden administration announced a new whole-of-government effort called the Rural Partners Network, or RPN. Led by the United States Department of Agriculture, the initiative aims to “transform the way federal agencies partner with rural places.”

With the bipartisan infrastructure law known as the ILJA, the RPN will help rural communities take full advantage of the funding provided through the law, including priorities like rural high-speed internet, clean water, clean and reliable electricity, and better roads and bridges.

The RPN is rolling out in May by partnering with counties and cities in six states, including Arizona, Georgia, Kentucky, Mississippi, and New Mexico.

By the end of the summer, RPN will expand to six more states. RPN eventually plans to expand to all 50 states, and

will also serve Tribal Nations and territories.

RPN staff will feed key data to Federal Agencies, thus allowing them to directly drive policy changes that better serve rural communities.

RPN will coordinate technical assistance, share measures of success, and align grant requirements.

Members of Congress from both parties have supported this effort, including Iowa Senator Joni Ernst, Iowa Representative Cindy Axne, and Minnesota Representative Angie Craig.

With many federal agencies participating, the many aspects of the infrastructure bill can be better understood and adapted for rural needs.

The Administration and Congressional leaders hope that RPN can serve as a model for permanent changes in how the Federal Government relates to rural America.

## Luverne biofuel plant to make sustainable aircraft fuel for Delta Airlines

Delta, headquartered in Atlanta, has committed to buy 75 million gallons of sustainable aviation fuel annually from a plant in Luverne.

The plant, owned by Colorado-based Gevo, makes aviation fuel derived from plants and waste products.

The plant was shut during the pandemic as demand for fuels decreased, but it reopened in 2021.

The contract, which starts in 2026 and runs for seven years, will provide Delta with millions of gallons of fuel as they attempt to add more renewable fuel to their energy mix.

Meanwhile, Gevo is looking to scale production at the Luverne plant. The plant started as an ethanol factory and later transitioned to making biofuels for aviation.

Delta needs 400 million gallons of sustainable biofuel a year to meet their 2030 goal of deriving 10% of their fuel from renewable sources.

Delta is working with other biofuel companies to meet this ambitious goal.



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## Additive manufacturing enters the world of wind

Have you heard of additive manufacturing? Quite simply, additive manufacturing is the industrial form of 3-D printing. This emerging technology has allowed large items to be constructed, layer by layer, either in factories or on site.

This form of manufacturing has been able to construct many interesting (and large) objects on site, including houses. Now, wind turbines are being added to the mix. General Electric had developed a method to print the bases of wind turbines on-site, allowing farm operators to cut the transportation and other associated costs of moving finished components.

In a statement, Danielle Merfeld, Chief Technology Officer of General Electric Renewable Energy, said that it was "particularly important to continuously improve the ways we design, manufacture, transport, and construct the large components of modern wind farms."

At their new research facility, General Electric is using a revolutionary 3D printer to accomplish this heavy-duty printing. The printer itself is as tall as a three story building and can print tower sec-

tions as tall as twenty meters.

Amazingly, the printer can print in excess of ten tons of real concrete an hour. It is also the first 3D printer in the world to have two X-axes on the printer.

Lund-Nielsen, Founder and General Manager of GE partner COBOD, said that "With the multiple functions of this printer, the printer can be better described as a multifunctional construction robot than a printer."

At a ribbon cutting ceremony at the facility on April 21, Department of Energy Deputy Assistant Secretary for Renewable Power Alejandro Moreno said,

"Reaching the Biden administration's ambitious goals of carbon free electricity by 2035 and a net-zero economy by 2050 will require vastly more wind energy capacity. We're proud to partner with GE Renewable Energy on this innovative 3D printing technology which has the potential to be a game changer in how we harness this resource. With American-made taller towers assembled on site we can cut costs, overcome logistical hurdles, and accelerate progress toward our goals."

A grant from DOE has

helped to support research at this new site, where twenty-plus people are working on this project.

In April, General Electric Renewable Energy took another step forward with the development of a revolutionary Artificial Intelligence/ Machine Learning tool to speed up logistics for new wind turbine deliveries.

Logistics can end up being between 10 and 15% of the total cost of a wind turbine installation.

The new modelling includes historical data, industry data, information about existing and potential suppliers, locations, cost, shippers, regulations and other key factors.

A reduction of logistics costs would bring about billions of dollars in savings for the industry and also make installation go smoother.

GE leaders feel that these new processes, working together, are the next step in making wind turbine installation more approachable for a variety of different customers, including governments, cooperatives, and investors.

With the world's climate change targets approaching fast, it is innovative concepts like additive manufacturing

and AI that will make a difference.

Wind turbine manufacturing and installation will need to ramp up to hit the mark,

and additive manufacturing will have to enter other renewable areas to make the difference required.

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# Generation school success

*continued from front page*

with Brian King giving an interesting talk about trends in engine operations and maintenance.

Wolverton said, “Fairbanks Morse is increasing its emphasis on its role as a military contractor, so its military commitments are leading to a contractual expansion of its training activities, such as at their operation in Beloit, Wisconsin.”

Activities then moved to the Hutchinson Diesel Plant, for a tour of their facilities. Hutchinson has two Worthingtons that have been decommissioned, as well as a newer Wartsila and two 10 MW Caterpillars that were installed in 2018, among others.

After an evening reception, Day two focused on hands-on training in Delano and Glencoe. Thomas Tramel from Cyprus Engine Accessories presented on a Fairbanks Morse and its injection timing and crank timing, among other topics.

The Delano crew also gave a tour of the operations, including two newer Caterpillars with computerized controls that can be started and synced at the same time.

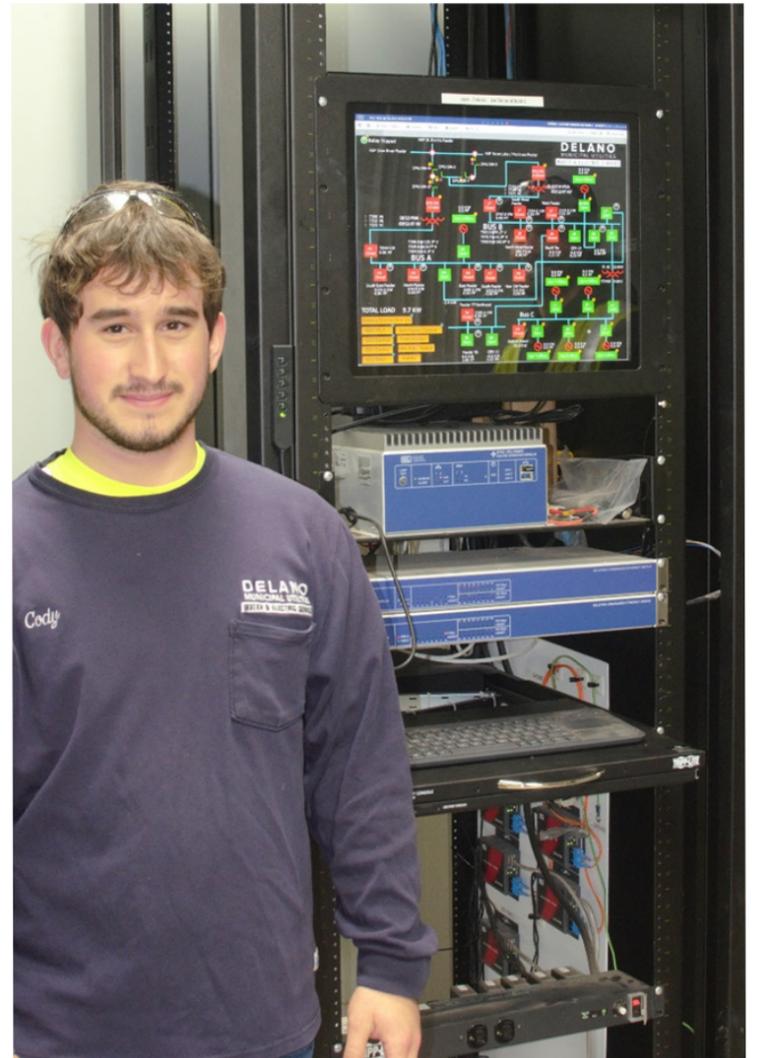
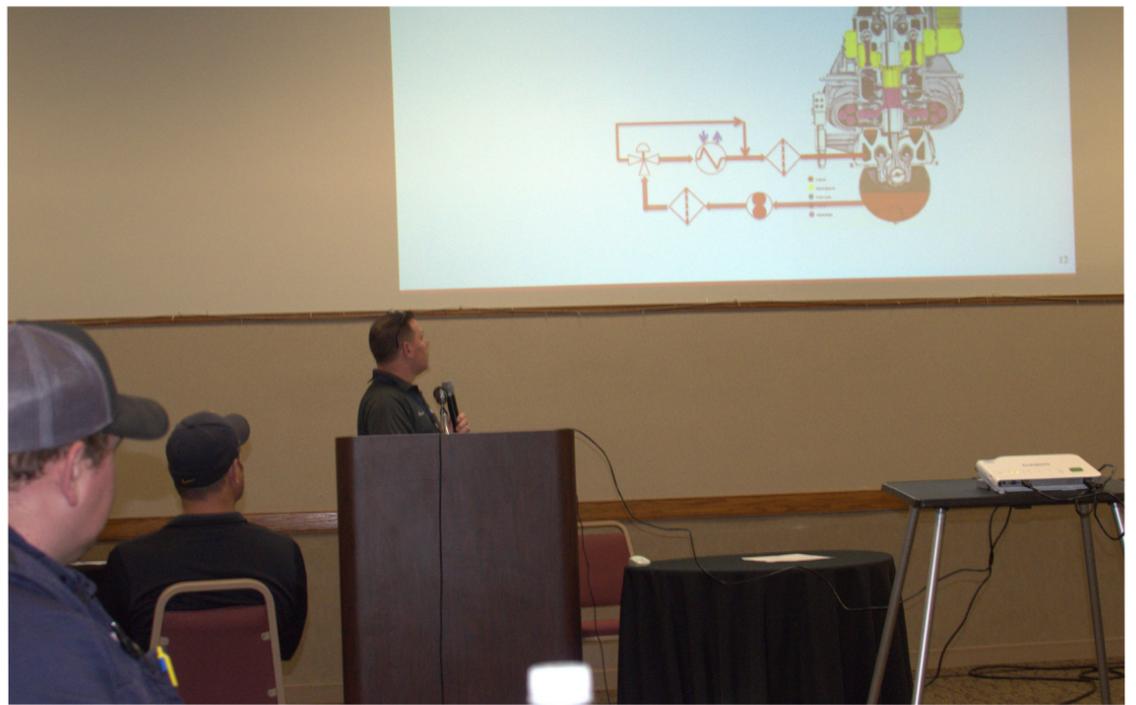
In Glencoe, Brian King and Mike Wolverton presented on a Fairbanks Morse, while

Larry Wheeler of Wheeler World, Inc. shared his knowledge of Cooper engines by going over a variety of topics related to maintenance, fuel injector testing and dual-fuel.

King showed that many things can throw off the timing on the Fairbanks Morse, including lower cranks, cams, tappets, and pumps. Glencoe Light & Power staff ran the Cooper and Fairbanks Morse engines and gave a tour of the control room.

Day three wrapped up at the Hutchinson Event Center, where Randy Goeke of ALP Utilities spoke about a mechanical failure and what they learned from the event. Dave Wells of L&S Electric then gave a presentation on Generator Testing and Maintenance. Generation School concluded with an important discussion of takeaways for the future led by Paul Helling.

As always, Generation School was a great place for hands-on learning, meeting colleagues from other municipal utilities, and talking to industry experts. There was a lot of knowledge and equipment on display, and MMUA thanks all the participants and presenters that helped make Generation School a success.



**Top:** Generation School participants examine a Worthington at Hutchinson’s power plant.

**Middle:** Brian King of Fairbanks Morse presents on engine operations and maintenance.

**Bottom:** Generation School participants work on a Fairbanks Morse at Delano Municipal Utilities.

**Front Page:** Generation School works on injection timing on Glencoe’s Fairbanks Morse

Cody Schrupp from Delano Municipal Utilities shows the computerized controls of Generators 10 and 11 in Delano. Running Caterpillar engines, the controls can start the engines at the same time as well as sync.

## FERC report

continued from front page

from 2020. Most transmission work was done to upgrade line and replace aging infrastructure, with about only 20% of projects involving the building of new lines. Extreme weather hit the American energy market hard in 2021. For many Americans, the hot summer of 2021 increased electricity demands compared to 2021.

The February 2021 winter storm in Texas had severe repercussions not only for the people in its path but also for the larger energy market. Natural gas prices set an all-time record, causing the International Exchange to change its software to allow offers above \$999/MMBtu. The spike in demand was unparalleled, and along with the previously discussed factors set natural gas up for high prices through the end of 2021.

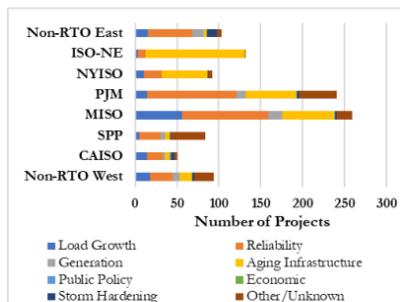
Other extreme weather events included a severe drought in the western

United States that caused hydro generation to drop by 14% compared to 2020. Hurricanes also played a role in affecting power generation with 2021 being the third most active hurricane season on record. Hurricane Ida, which hit Louisiana in August, caused \$2.1 to \$2.6 billion in damages to the electrical system, the worst-ever such costs for the utility Entergy.

For many reasons, 2021 was a year of flux. Perhaps the most interesting fact looking forward is that the things are still very much on the same path as they were prior to 2021. Solar and wind generation are growing while coal plants continue to retire from service. An aging grid continues to be repaired and upgraded. Gas pipelines and generation continue to serve as a bridge to a renewable future.

### Growing Transmission Investment

2021 Line-Related Transmission Projects within Order No. 1000 Planning Regions



4/21/2022

Source: North American Electric Transmission Project Database, The C Three Group, L.L.C.

The number of transmission projects due to reliability and aging infrastructure is put into stark relief by this graph. MISO, notably, had over 50 projects related to load growth in 2021. (FERC)



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## Lineworker Appreciation Day marked April 18

It took one very big storm for many Americans to learn how important lineworkers are to them.

When Hurricane Sandy hit in 2012, the damage was so great that 67,000 lineworkers responded to repair damaged infrastructure. That was over half of ALL lineworkers in the United States, who number around 115,000 strong.

Spurred on by this amazing effort, the 113th Congress passed a bill in 2013 declaring April 18 as *National Lineman Appreciation Day*.

Lineworkers have been on the job since the 1840s, when the first telegraph lines began to be seen along roads and railroad tracks.

The demand for lineworkers has grown continuously since then, as more and more Americans connected to the grid and new technologies emerged.

Today, they work on a diverse set of lines both above ground and underground.

Being a lineworker is a dangerous job and requires both mental and physical strength. Just like utilities in general, lineworkers do amazing things everyday that are often taken for granted.

That is why it is so important to honor lineworkers every day, but particularly on their own special day—April 18.

## Grid operators make EPA comments

EPA Dockets revealed that the PJM Interconnect and MISO made public comment on EPA plans to enforce 2015 coal ash regulations.

The Biden Administration has begun to enforce coal ash regulations, including the regulations related to the landfilling of coal ash. Many landfills that deal in this kind of waste have been ordered to begin closing.

Although these efforts are positive and long overdue, the PJM Interconnect and MISO noted in public comment that EPA action could lead to a loss of generation ability.

PJM noted that "The EPA... should prepare to offer extensions to the extent necessary to address grid reliability issues."

MISO noted that "already

dangerously thin coverage of demand in certain subregions..." could be impacted by this ruling.

The EPA has been granting utilities time to come into compliance with these regulations, but in 2022 began taking a stronger enforcement stance.

Subsequently, an organization representing electrical utilities filed suit over this action.

A filing by environmental groups argued against these comments and urged the EPA to deny extending deadlines for the use of unlined coal ash pits.

They noted that timelines have come and gone and that the end of coal ash landfilling is long overdue.

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## Nominations sought for full slate of MMUA awards; board election in August

MMUA's Nominations and Awards Committee is accepting nominations for MMUA awards. The deadline to submit a nomination is June 30.

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

Nomination forms can be downloaded from [MMUA.org](http://MMUA.org) at the Awards and Recognition page on the 'About' menu. All nominations will be considered by MMUA's Nominations and Awards Committee and the awards will be pre-

sented at the MMUA Summer Conference in August.

Here is a brief summary of the awards for which we are accepting nominations.

Please consider recognizing the accomplishments of a member of our community by submitting a nomination.

- System Innovation Award. This award is given to a utility that has demonstrated leadership and innovation in customer service, energy efficiency or renewables, technology, or other areas.

- Public Service Award. This award is given to a state, or federal elected or appointed official who has been a strong

supporter of MMUA and its members.

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

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

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

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

### Board of Directors

Serving on MMUA's Board of Directors is an honor, as well as a great opportunity for professional growth. No seats on the Board are opening this year, but we do have two appointed seats to be voted on this year.

Please return the completed award nomination

forms, by June 30 to Theresa Neddermeyer via email ([tneddermeyer@mmua.org](mailto:tneddermeyer@mmua.org)), fax (763.551.0459) or mail to 3131 Fernbrook Lane N., Suite 200, Plymouth, MN 55447.

If you have any questions about the nominations process or what service on the board involves, please contact MMUA Chief Executive Officer Karleen Kos. She will be happy to discuss the role of the board members and the time commitment involved. [kkos@mmua.org](mailto:kkos@mmua.org) or call her at 763.746.0701.

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## Business Roundtable unveils new "roadmap"

The Business Roundtable, an organization composed of the CEOs of some of the biggest companies in the nation, unveiled a new "Energy Roadmap" on April 26. The plan was designed to meet the energy needs of business during this challenging time.

The roadmap asked for an enlarged natural gas infrastructure in order to better serve the needs of Europe during the Ukrainian War.

It also looked towards supporting the goal of doing more onshore and offshore drilling, as well as onshore and offshore wind and solar.

The Roundtable noted that business needs "a market signal" in order to confidently invest in renewable energy and emerging technologies like advanced nuclear and hydrogen.

The roadmap highlights flexibility in the energy mix, such as the construction of pipelines that could be used to move natural gas, biogas, or hydrogen that was created from captured carbon emissions.

The Roundtable is also in favor of tax credits that help the renewable energy sector, including electric vehicle tax credits and investment credits for solar projects.

The roadmap made it clear that energy stability, reliability and a wide mix of energy resources are important to American business, especially with global political destabilization and the impacts on energy supplies that result.

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## Grid security exercises prove communication is key

The power of communication and coordination was clear in NERC's biennial security exercise, GridEx VI, which was held November 16-18, 2021. Two different exercises were held: The Executive Tabletop for senior government leaders and industry executives, and Distributed Play for utility organizations across North America.

This event was captured in a detailed report released in April by NERC and E-ISAC, the Electricity Information Sharing and Analysis Center.

Over 88 company leaders and government entities participated in the Executive Tabletop Scenario, while 293 utility organizations participated in the Distributed Play Scenario.

The Executive Tabletop simulated a multi-day attack that split the Western Interconnection into two parts, followed by attacks on electrical and natural gas infrastructure. Telecommunications and wind generation were also affected. Complicating matters were the many de-

fense-critical customers put at risk by the attack.

Distributed Play placed players in a difficult simulation where a nation-state actor attacked the grid with cyber and physical attacks over a two-day period. Using this baseline, organizations received information from experts and were encouraged to modify the scenario to meet their unique operational needs.

Some unique scenarios that Distributed Play players met head-on included pipeline and liquid natural gas (LNG) facility attacks, generation unit outages, and social media threats.

Executive Tabletop participants found that communication of operational status was difficult during the exercise, particularly because of the large number of stakeholders that were looking for information.

NERC and regional entities can address this by reviewing their crisis management plans and determining their capabilities in extremes.

Another challenge the exercise was meant to address included information sharing during crisis conditions. Without thorough planning, it is difficult to know what can safely be shared and with whom.

Increased coordination between different utility industries was also seen as crucial for moving forward. Natural gas, telecom companies, and electricity providers can plan for operational issues that overlap between them or unnecessarily snowball into a major crisis.

For the Distributed Play participants, surveys showed that they were pleased with the experience and the tools that were provided by the GridEx Team. This provided them a compelling simulation that was realistic and engaging.

One critique for future use was that planning materials, while excellent, were published late, therefore making their effective use harder.

Notably, NERC itself participated in Distributed Play,

providing an excellent real-time experience for their team.

Overall, the experience taught participants that being on the same page with others and planning on many fronts are crucial for crisis management. With the conflict in Ukraine and other global threats, the reason for these exercises could not be clearer for the Electric Reliability Organization (ERO):

"Because nearly 400 million citizens in North America are counting on us!"

### Rose Creek Wind seeks permit

Rose Creek Wind Farm in Mower County has applied to the PUC for a permit to decommission the existing Rose Wind facility and replace it with a new facility of the same name.

Eleven turbines will be removed and replaced with six or seven turbines in different sites. The nameplate capacity of the facility will remain at 17.4 MW.

## Randall, Minnesota shows power of municipal utilities

The small town of Randall, Minnesota owns all of its utilities, including electric, natural gas, sewer, and water. That fact, along with the cohesiveness of the community, allowed Randall to quickly address the after-effects of an unexpected accident.

On April 5th, a driver hit a power pole near Randall. The accident caused a short power outage for city residents, as well as some other unexpected consequences.

The biggest problem was that the crash caused one of the three phases of electricity to be dropped. This caused a surge through the other two phases, damaging electrical infrastructure and Randall's water treatment plant.

Matt Pantzke, City Manager, was contacted by the elementary school. A transformer that served the school was taken out and appeared to be smoking. It being emergency protocol to evacuate the school, schoolchildren were immediately sent to the neighboring church.

City utility staff in cooperation with Minnesota Power sprang into action. Paint had burned off the transformer, but it was performing well on a low-voltage test. To be safe, Minnesota Power provided a used transformer that was swapped in for the damaged one. The school had electrical service in time for the next day.

Pantzke emphasized how MMUA education helped. "Maintenance Supervisor Patrick (Kalis) attended the MMUA program...it reinforced the value of having him trained. He quickly de-energized the transformer and oversaw the testing of it." The water treatment plant was also affected. Keith Evans, Randall Water and Wastewater Operator, was crucial in this scenario.

Using a generator, he avoided sewer backups when the lift stations stopped functioning. The well pump and booster pumps were also knocked out by the surge.

Overall, the city came through this crisis well.

"Randall is a town of 650 people where everyone knows everyone," said Pantzke. "It helped expedite everything."

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## Driving towards ZEV adoption in Minnesota

More states have taken the step of moving to Zero Emissions Vehicle (ZEV) rules, including Minnesota. In 2021, Minnesota, Nevada, and Virginia joined the ZEV program, which now counts 18 states as considering or already implementing the program.

What does ZEV mean? Quite simply, it is a rule that requires a certain percentage of automobiles sold in Minnesota to be zero emissions vehicles. Starting in 2024 and affecting vehicles built in 2025, the ZEV rule will have a carbon offsetting effect on the gasoline vehicles that are sold.

The percentage of vehicles

and support, the organization provides tools and support for entities to move their fleets to zero emissions. Since Minnesota has limited oil and gas resources, citizens of our state spend about \$11 billion a year on fuel that comes from out of state. With the adoption of ZEVs, these dollars can instead be spent with local utilities and on other things. SMMMPA, among others, agrees. Their planning sees zero-emission vehicles as good for the economy and the environment. SMPPA's efforts include the adoption of Level 2 charging at its headquarters, an 80% carbon-free energy portfolio by 2030, and making its new fleet vehicles electric. SMPPA is also doing outreach to the public about the benefits of electric vehicles—and even promoting electric vehicles through planned ZEV car sharing.

After all, more ZEVs will mean more dollars in the pockets of utilities as well as hard-working Minnesotans.

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## EPA proposes tighter controls on nitrogen oxide

On April 6, the EPA proposed in the Federal Register a new rule that would require fossil-fuel burning power plants in 25 states to participate in an allowance based ozone-season trading program by 2023.

The goal of the program is to reach the EPA's 2015 National Ambient Air Quality Standard for ozone of 70 parts per billion.

The ozone season runs from May through September 30. Previously, 12 states including Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania,

Virginia, and West Virginia participated in the Group 3 trading program.

With the new rule, Minnesota would be one of the 25 states. Currently, Minnesota is not covered by any nitrogen oxide ozone season trading program.

The plan is subject to "good neighbor" requirements that will help prevent upwind states from interfering in the air quality goals of states that are downwind from them.

Industrial sources of nitrogen oxide, such as pipelines, kilns, industrial furnaces, and other sources will be also be subject to the rule.



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## SMMMPA earns 4th consecutive Governor's Safety Award

SMMMPA was recognized for excellence in workplace safety and health during the 2022 Minnesota Safety and Health Conference, held May 3-4 in Prior Lake.

SMMMPA was one of 191 employers to be honored at the conference.

SMMMPA earned the Governor's Safety Award, which has been awarded for 88 years. Even more impressively, this is their 4th consecutive win of this prestigious award, which goes to recipients who have achieved outstanding results in safety.

After two years of meeting virtually, the Minnesota Safety and Health Conference met in-person to discuss the continuing safety issues of slips/falls, and repetitive stress injuries, among others. Managing pandemic-related stress and health and wellness strategies were also on the docket this year.

The Minnesota Safety and Health Conference is organized by the Minnesota Safety Council, which since 1928 has worked to increase safety on our roads, in our workplaces, and in industrial settings.



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Austin residents will be receiving calls to raise awareness of pipeline safety. Austin Utilities began a telephone survey on April 25 to gauge public awareness in compliance with federal safety regulations. The survey is done every four years, with the 2018 survey showing a better than 90% understanding of basic gas safety by respondents.

The *Austin Daily Herald* reported on April 26 that the Mower County Board ratified an emergency declaration for Taopi. The declaration will free up emergency funds for the city. Taopi was hit by a damaging EF2 tornado on April 12.

The new Baudette/ Rainy River international Bridge in **Baudette** has earned a National Recognition Award for exemplary engineering achievement. The award was presented at the American Council of Engineering Companies' 55th annual Engineering Excellence Awards.

The project included over ninety stakeholders and was built to meet international needs and border security requirements. Completed in October, 2021, the 1,350-foot-long bridge includes two travel lanes and accommodations for pedestrians and bicycles.

## Around the State



American Rescue Plan Act funds totalling \$700,000 will help reduce water costs in **Baxter**. Needed repairs and upgrades to Baxter's water treatment plant would have seen water costs increase. With this funding, staff costs on the project will be offset and residential water costs will be held down.

In addition, on April 25, **Baxter's** water treatment plant began serving the public again after an overhaul.

Reconstruction of Minn. Hwy. 86 in **Lakefield** began April 18 as crews begin work on 1.3 miles of the highway. The project will include grading, pavement, utility replacement, lighting, drainage, and sidewalk reconstruction. Minn. Hwy. 86 will be closed during construction and detoured. Construction is expected to be complete by mid-November.

Reconstruction of Minn. Hwys. 15 and 60 near **Madelia** began April 18. Crews plan to pave seven miles of roadway with concrete overlay from the interchange between Highway 15 and 60 south of Madelia to the interchange north of the city. Eastbound lanes will be completed first, with westbound lanes schedule to be constructed in 2023. Detours and head-to-head configurations will be used during the project.

**Marshall Municipal Utilities** received two national awards from APPA. Their first-place Safety Award of Excellence for 2021 acknowledged Marshall's strong commitment to safety on the job. Marshall Municipal Utilities also received a reliability award. MMU had no power outages last year, which General Manager David Schelkopf described as "...a really major achievement."

**Owatonna Public Utilities** received a RP3 (Reliable Public Power Provider) designation, in addition to recognition for safe operation and power reliability from APPA. Owatonna had no OSHA Recordable Injuries in 2021. Excluding major weather events, the average Owatonna resident only had 9.6 minutes of electrical outage in 2021.

**Redwood Falls** was awarded \$1,063,951 by the Minnesota Department of Employment and Economic Development (DEED) to fund the construction of new streets and utilities within a new industrial park. The first phase of the park will include 20 acres and 3 lots.

According to the city, the park could bring as much as \$4,000,000 in private investment and create 50 new jobs. Three other Greater Minnesota cities were also granted infrastructure funds through this program.

**Rochester Public Utilities** held their 20th annual Arbor Day celebration on April 29 at Silver Lake Park. Chainsaw carvers and Smokey Bear were there to entertain the public. Free food, giveaways, family activities and live music made for a wonderful event.

RPU line crews also partnered with Rochester Parks & Recreation on a tree planting for "The Right Tree in the Right Place" program on May 5. This is an annual event to ensure the right kind of trees are planted in the right place for that tree.

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On March 29, wind power for the first time surpassed both nuclear and coal to be the 2nd largest American energy source on that day, said the U.S. Energy Information Administration. The milestone was set for a second time on April 12. These changes illustrate an interesting tipping point in America's energy generation mix.

On April 18, *Utility Dive* reported that hackers now have the ability to gain full-system access to industrial controls through newly developed malware. Designed to impact energy infrastructure, particularly liquid natural gas (LNG) production, the malware was most likely developed by Russia. Although the malware was caught early and had not yet been deployed, experts say the program will take years to recover from.

California is targeting the sale of electric cars to triple in the next four years, in an attempt to speed up the phase-out of new gasoline automobile sales in the state. The rule would have ZEVs (Zero Emission Vehicles) make up 35% of of cars sold in California in 2026, compared to 12% in 2021. With this change, California will be on track to hit 100% ZEV sales by 2035.

The State of Washington is also making aggressive changes to its ZEV planning, with Governor Jay Inslee signing a bill with the intent that every vehicle sold in the state would be electric by 2030. Regulators have until the end of 2023 to solidify the plan.

Through its Public Utilities Commission, the City of San Francisco announced a plan to reduce the city's carbon footprint and provide access to clean energy for low-income residents. Eligible residents will receive a 20% discount on clean energy, as well as assistance with existing solar installations, heat pump water heaters, and more. These steps will help San Francisco reach its twin goals of 100% renewable energy in the city by 2025, as well as net-zero emissions by 2040.

see facing page

# Professional Services Directory

## Equipment and Supplies

Global demand for oil for 2022 should be lower than demand was in 2019. The War in Ukraine, China's COVID-19 battle and other factors should somewhat mitigate the higher prices from the first half of the year.

A weekend blizzard on April 23-24 took down hundreds of electrical poles in western North Dakota and Eastern Montana—among the worst damage ever seen in that part of the country. The *Bismarck Tribune* reports that 15 crews will be working to repair damage from the storm, which at one point caused 18,000 customers to lose power.

On April 27, Russia cut off gas supplies to two European Union members, Poland and Bulgaria. Poland and Bulgaria have been cooperating in European efforts to help Ukraine in their war against Russia. Although the two countries won't face any immediate energy issues, the move was declared as "black-mail" by EU Commission President Ursula von der Leyen.

Minnesota Attorney General Keith Ellison filed suit against four Utah-based companies, claiming that they violated consumer protection laws and used deceit to push Minnesota residents into expensive solar contracts.

The *Seattle Times* reported that Trident Winds, a wind energy developer based in Seattle, submitted a lease request Monday to the Bureau of Ocean and Energy Management on April 25 to build a floating offshore wind farm about 43 miles off the coast of the Olympic Peninsula, near Grays Harbor. The project, which is called Olympic Wind, would provide 2,000 megawatts of clean energy to 800,000 homes. Construction is planned to begin in 2028 and the wind farm would become operational in 2030.

On April 21, FERC proposed greater state involvement in regional transmission and cost-sharing across regions. FERC noted that the involvement of states could heighten consumer protections, increase grid reliability, and lead to better long-term transmission planning.

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*Business Wire* reported that Duluth-based energy company ALLETE as an Honor Roll company with Special Distinction. ALLETE is only one of thirteen large Minnesota companies with women representing at least 30% of corporate directors and 30% of executive officers. Seven

of eleven board directors are women, while six ALLETE executive officers are women. Moody's Investors Service has also identified ALLETE as having the most gender diverse board of 45 utility companies in its study.

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1 www.bls.gov/oes/current/oes49051.htm | 2 www.bls.gov/oes/2017/may/oes49052.htm  
3 www.bls.gov/oes/2017/may/oes47152.htm

## Electrical vehicle market update illustrates EV keys to success

The recently released Electrical Vehicle Market Update highlighted the ways in which electric vehicles will have the most success in the marketplace.

The factors identified by the report included affordability, charging stations, aftereffects of COVID, price parity in the market, declining battery costs, electrification of the fleet, EV specific brand development, manufacturer commitments, and model availability.

**Affordability** continues to be a large problem for electric vehicles. In 2022 there are projected to be only three EV models that cost less than \$30,000 before tax credits. However, if EV production scales up and there are decreases in price inputs, prices should decline.

**Charging stations** continue to increase in number and become more ubiquitous all across America. Public Power and other utilities have been at the forefront of making charging an option wherever you go.

As EVs are increasing looking the like the wave of the future, automobile manufacturers are joining in acquiring stock in companies that make charging equipment. Many automobile companies are actively trying to expand their charging station grids.

For instance, GM plans to connect GM owners with over 60,000 charging stations strategically arrayed around the United States. GM's Ultium Charge 360 plan is a four-part plan that is planned to take care of customer access, payment, and EV charging at

home and in public. Real-time charging information will also be provided to customers.

For EVs to be a success, these activities on the private and public entities will have to continue and grow.

**Effects of COVID** will continue to affect many industries for years to come, include the burgeoning EV market.

During the worst of the pandemic, the greater auto industry was struck by workforce issues, supply chain issues including shortages of microchips, and halted operations.

One bright spot was that as overall automobile sales shrank, EV sales continued to grow year over year.

However, if after-effects of the pandemic continue to impact the larger economy, including the automobile industry, all bets are off.

**Price parity** of electric vehicles with internal-combustion engine vehicles is largely dependent on the price of batteries, which is rapidly decreasing. It is estimated that the two types of vehicles will reach price parity when battery pack prices fall below \$100/kWh, which is estimated to happen by 2025.

**Declining battery costs** make up most of the drive towards all-important price parity, this is a huge part of unlocking the larger EV puzzle. Battery costs have already fallen dramatically—almost 90% in ten years. New products such as SSB's (Solid State Batteries) are also causing a technology-shift in this process.

Companies like Quantum-

Scape are creating high-power batteries that could see vehicles attain amazing benchmarks like 80 percent longer range than current batteries, in addition to 80 percent charging capacity in 15 minutes.

**Electrification of the fleet** is another important structural factor for increasing the penetration of EV's. Fortunately, some big fleet customers are already getting on board. Federal Express has committed to making its entire fleet electric by 2040. Wal-Mart is also moving toward electrifying its fleet, declaring that by 2040 its entire vehicle fleet, including six thousand trucks, will be zero emission. Unilever, the international consumer products company, has committed to complete electrification of its 11,000 vehicle fleet by 2030.

**EV-specific brand development** will have the strong ability of showing consumers how committed automakers are to EVs and how permanent these changes will be.

This has been precipitated by positioning certain high-end brands, such as Cadillac and Lincoln, as completely EV early on. With many automakers, their premiere car lines will lead the way as the entire company transitions to a completely EV future.

**Manufacturer ommitments** to electric vehicles have been large and mostly unwavering, which is a good sign for the sector. Auto manufacturers are set to spend more than \$515 billion from now through 2030 in the development of new

electric electric vehicles.

A positive consequence of these commitments is the construction or renovation of many American auto plants. An estimated \$75 billion will be spent, with the plants expected to employ between 24,000 and 30,000 workers.

Some of these projects include a billion-dollar Mercedes-Benz plant and a new 5.6 billion dollar plant being built by Ford in Tennessee, which will build the electric F-150.

**Model availability** is perhaps the most important part of the EV story. After all, if the vehicles Americans want aren't available in EV form, EVs probably won't succeed.

At least in the medium to long-term, EV model availability should not be a problem. Several major car companies have committed to making their entire fleet electric in the next fifteen to twenty years.

By 2025, approximately 109 battery electric and plug-

in hybrid vehicles will be available to American con-

More SUVs and full-size trucks are also joining the electric fleet.

Ford Motor Company has already introduced several electric trucks and is hoping to beat its competitors to the punch.

"We're not joking. We think this is as big a product as when the Model T came out for us," said CEO Jim Farley, referring to the new electric F-150.

EVs still have a ways to go with their adoption by the general public. However, the commitment of countries around the world in meeting carbon limits is a strong incentive for carmakers.

Their international businesses are dependent on meeting these needs. It is impressive how quickly both technology and industry have responded in meeting targets that a few years ago looked almost impossible.



### Upcoming Events

## Minnesota Public Power Walleye Tournament

June 4, Rush Lake, Ottertail MN

The deadline to register is May 18 or when registration is full. Proceeds benefit Minnesota's three technical college lineworker programs.



## Summer Conference

August 22-24, Madden's Resort, Brainerd

This year's program is under development, but Madden's is ready to take your reservations. For more registration information, go to the Summer Conference link in the MMUA Events > Calendar > August webpage.

Reserve your room now!



## Minnesota Lineworkers Rodeo

September 13, MMUA Training Center, Marshall

Display your skills and learn from others at this competitive but fun event. As with all our events, building relationships with other industry professionals is also a big part of this get-together.

Mark your calendars now!

## Overhead School

September 13-16, MMUA Training Center, Marshall

Mark your calendars now!

