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August 2022

NEWS

TAYLOR ELECTRIC

Cooperative

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ZUCCHINI RECIPES





TIMING AND PERSPECTIVE

Understanding EVs and the electrical grid

Kenneth Ceaglske, President/CEO

We had a great turnout for the annual meeting, it was good to see all of you that could make it. Our speaker, John Carr from Dairyland, spurred a lot of thoughtful questions. One of the questions that came up at the meeting and I see popping up on the internet is whether we should be adding electric vehicles (EV) at the same time as we are looking at capacity constraints on the grid. This is a good and valid question; at first glance, why put additional stress on a system that may be reaching limits? Timing and perspective are missing from the discussion.

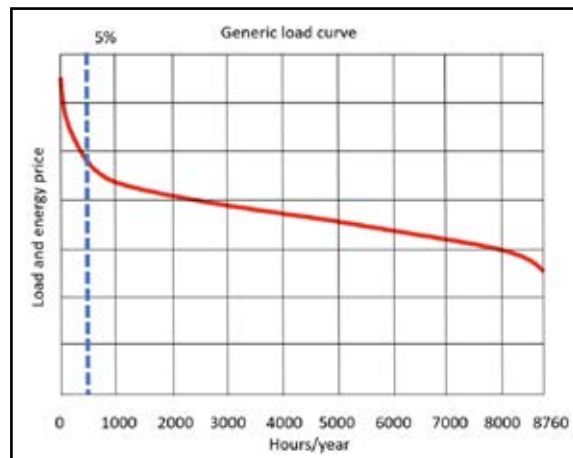
First, the grid's timing and perspective: While the voltage of power at your house on a small scale (and the grid at a much larger scale) is constant, typically around 120v to allow your lights and equipment to function properly, the load on your house (and the grid) varies with the time of the day. A graph of what that looks like is somewhat like the graph below: low at night, picking up through

the day, and high in the evening. This graph is actually the overall load on our part of the grid, so it's a combination of all of the houses, businesses, farms, etc. from North Dakota to Michigan to Louisiana. The times of concern for capacity issues are typically only on the highest few hours of the day, and to an even finer point, only those high points on a few days a year.

The graph at right is a generic look at loading for the course of a year on an hourly basis arranged from high to low. This graph looks similar when scaled up to the grid as a whole, or down to a household level. This highlights the number of hours where energy needs are very high, average, or very low. High-cost energy likely occurs in the 5% range (438 hours/year), but capacity emergencies (rolling blackout concerns) are only in the 1% (87 hours/year) or less range.

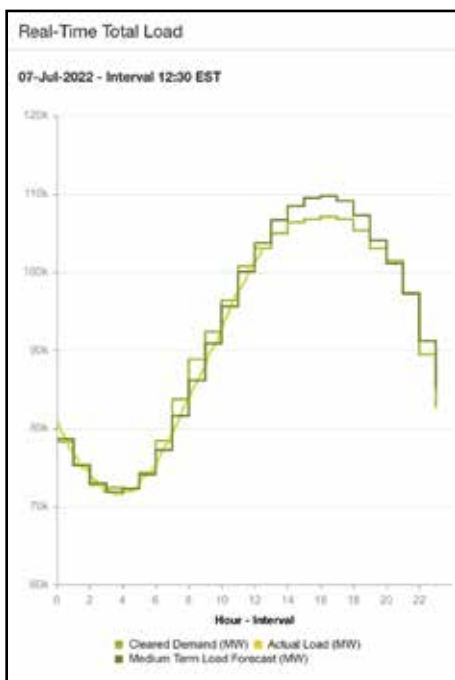
Now shift to the timing and perspective for EVs. Some may have the perspective of EV charging as the current gas stations on a "payday Friday afternoon before the long weekend," when there are lots of vehicles that must fuel up before heading out. However, EV charging is more like a (very) big cell phone battery, that if charged at night should take care of any of your daytime needs. According to the U.S. Department of Energy, 80% of EV charging will be done at home, typically at night. Looking at the first graph, the load curve, there is a lot of room in the system for loads to be added after 9:30 p.m. into the early morning hours. Also, looking at the nature of EV charging, unlike a gas pump, they fill at full rate

(high power usage, two to three times a hot water heater) until the battery is mostly full, then slow down (low power usage) to top off the battery. Using my normal daily driving of 20-30 miles, I could charge every night and would likely be in the slow charge mode. On the odd day that I do a longer distance



trip to Eau Claire or Wausau, I'd be charging in the faster range for a while that night after I got home, but would then fall off to the slower rate.

Should I decide to take a trip outside my normal battery range of 100-150 miles one way, then I would need to locate a charger on the route. If I'm going to La Crosse for a Dairyland Power meeting, for example, I could easily make it there on a full charge and find a hotel or parking lot with a charger for the night. If it were a day trip instead of an overnight, then I might have to find a fast charger along the way. This is the one scenario where I may be charging at a time when the system is at peak load, but only on the most extreme days of the year. Referencing my comments on the second graph, for it to be a problem to the grid, it would have to happen in



Continued on page 17

TAYLOR ELECTRIC MEMBERS GATHER IN-PERSON FOR 86TH ANNUAL MEETING

After two years of outdoor, drive-in style annual meetings due to COVID, Taylor Electric Cooperative returned to an in-person format this year, with approximately 225 members and guests gathering June 28 at the Stetsonville Community Center. Members were treated to a chicken dinner with all the fixings.

President and CEO Ken Ceaglske reported on a positive 2021 for the co-op, with a slight decrease in kilowatt-hour sales matched by slightly lower expenses, and favorable conditions at Dairyland Power leading to more than \$200,000 in Power Cost Adjustment credits that were passed on to members directly through bills. Ceaglske also noted that the co-op returned nearly \$450,000 in capital credits last year, bringing Taylor Electric's total capital credit retirement to date to \$8.5 million. In addition, favorable financial markets allowed the co-op to refinance a few loans, which will result in long-term savings.

Ceaglske also credited the co-op's new digger derrick truck, on display in front of the Community Center for members to see, with enabling crews to complete line construction and replacements/upgrades much more quickly and efficiently than they could have otherwise.

Reliability had been on track to be at record levels until December's freak storm with ice and high winds that toppled trees from well outside the right-of-way, tripling the co-op's outage time in just three days.

Looking ahead, Ceaglske cautioned that although the co-op's financial outlook for 2022 is good, the markets have changed since the early months of the year, and the co-op will be looking into a cost-of-service and rate-structure study this fall.

Guest speaker John Carr, VP of Strategic Growth at Dairyland Power Cooperative, addressed those changing markets. He explained how the regional energy market MISO,



Board Chairman Brian Hallgren presented a plaque to JoAnn Smith for 15 years of service as a director.

of which Dairyland is part, operates, and how the drive to reduce carbon emissions has led to a rapid pace of coal plant retirements. This coal, he added, has been largely replaced with natural gas, which is subject to volatile price swings, and renewable sources such as wind and power, which are intermittent, leaving the region vulnerable to rolling blackouts this summer.

Carr emphasized that blackouts are not imminent, but rather the chance of them occurring are greater this summer than they were last summer.

He also emphasized that the situation underscores the need for a methodical, long-term plan for transitioning to a lower-carbon future. "Moving too fast has consequences," he said.

Carr's presentation generated a slew of thoughtful questions from members ranging from the potential of hydro and nuclear to the effects of the growth of EVs on the energy industry.

Director elections resulted in one new board member, as JoAnn Smith reached her term limits. Board Chairman Brian Hallgren presented a plaque to Smith thanking her for serving 15 years as a board member. Incumbent Lisa Kohn was returned to her seat for another term, and David Makovsky was newly elected to a three-year term.

Members also passed three bylaw amendments.

Prizes included a \$100 electric bill credit, Parkfest tickets, and various gift certificates from local businesses. Medford Motors brought in a Ford F-150 EV Truck as well as the Ford Mustang Mach-E for members to view and ask questions.



Left: Incumbent Lisa Kohn was re-elected to another three-year term. Right: David Makovsky is the newest board member of Taylor Electric Cooperative following the annual meeting.



Top row: Taylor Electric's new digger derrick truck was on display outside the Stetsonville Centennial Hall for the annual meeting. Middle row, left: Guests were also able to get a close-up look at a couple of electric vehicles, including the Ford F-150, courtesy of Medford Motors. Middle row, right: Co-op employees helped serve up the chicken dinner. Bottom row, left: CEO Ken Ceaglske reported on the past year as well as the year ahead, and guest speaker John Carr, VP of Strategic Growth at Dairyland Power (bottom row, center), discussed the current energy markets. Bottom row, right: Board Vice Chairman Chuck Zenner catches up with a member.

Timing and Perspective

Continued from page 15

the 1% of hours that are in the highest peaking times. With a gas vehicle, when I stop for fuel, I generally fill it to the top. With an EV, the perspective shifts to having enough energy to get home

with some cushion. If I were to need to charge on the trip home, I could stop in Eau Claire, for example. I wouldn't be staying there for a full charge, but likely just more than enough to make it home. The energy on the home charger is likely 1/5th the cost of the public chargers.

In the end, due to the timing of EV

charging vs. the grid activities, EVs shouldn't make the peak day challenges significantly worse. They will actually help by using energy at a time when it is cheaper to generate, and more kWh sales will allow utilities to spread some of their costs across more units of energy to help hold the line on costs.

SENDING A CHILD TO COLLEGE? DISCUSS SAFETY FIRST

When you are shopping for dorm room supplies, décor, snacks, and other back-to-campus items, take a moment to discuss safety tips with your child before hugs and goodbyes.

Here are some safety topics to help keep your college student safe.

Electrical Safety Tips:

- When shopping for items that run on electricity, look for a safety endorsement label, such as UL (Underwriters Laboratories).
- Do not put a cell phone under a pillow or place it on or under bedding. It could overheat or catch fire.
- In the dorm or apartment, make sure outlets near water sources are equipped with ground fault circuit interrupters (GFCIs). If they are not, contact the resident assistant, campus housing staff, or landlord. (Look for a test and reset button on the face of the outlet.)
- Use power strips with an over-current protector that will shut off power if too much current is drawn.
- Avoid overloading extension cords, power strips, or outlets.
- Do not hang decorative lights with nails or tacks; always use plastic hooks.
- Do not run electrical cords across traffic paths or under rugs.

General Safety Tips:

- Find out what type of public safety department is on campus and how it functions; ask which services the department offers and the steps it takes to prevent crime.
- Locate emergency call buttons or phones across campus in case of an emergency.
- Walk with a friend, especially at night.
- When attending events or parties, go with at least one person you know and trust. If your friend leaves, do not stay.
- Always be aware of your surroundings.
- Avoid being distracted (listening to music, texting, and so on) while walking on campus.
- Find out what types of mental health services or counseling the campus offers.

To learn more about electrical safety tips, go to SafeElectricity.org.



SHARE THE ROAD

with Farmers

Farm season means sharing the road with large farm equipment, which can be wide and slow. Farmers must move slowly in large equipment, but public roads are often the only way to get from point A to point B.

When you find yourself following or meeting large farm equipment on the road, take a deep breath and **do the following to keep everyone safe:**

- 1** Be alert and cautious, and give large farm equipment and other slow-moving vehicles space.
- 2** Do not pass in a "No Passing Zone," or in any area where it is not safe to do so, such as intersections, bridges and railroad crossings, among others.
- 3** Make sure the tractor is not trying to make a left turn before you pass on the left.
- 4** Do not tailgate. Following too closely means you could be in the operator's blind spot.
- 5** Be careful when you do get the chance to pass. Oftentimes, farmers will move their equipment over when it is safe to do so.

Source: Texas Table Top (Texas Farm Bureau) SafeElectricity.org

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