

Baseload Projects Provide Long-Term Benefit

Baseload power generation resources are the foundation of an effective power supply. They typically operate 24-hours per day in order to cost-effectively meet the minimum, or “baseload,” demand on an electrical system.

When demand for electricity is higher, peaking resources, which are often powered by natural gas, help meet additional needs. However, though they are less expensive to build than baseload resources, they’re typically more expensive to operate. Renewable resources such as wind and solar have very low operating costs, but are weather-dependent, therefore not consistent. For these and other reasons, baseload resources remain the best choice for reliably and affordably meeting customers’ around-the-clock needs.

The WPPI Energy membership relies on a combination of baseload generators, primarily coal-fired and nuclear. These highly efficient resources help members provide customers with reliable, cost-effective power. In 2015, we implemented projects to improve two of our baseload generators, Boswell Energy Center Unit 4 and Elm Road Generating Station. As a result, Boswell emissions are significantly reduced and generation at Elm Road is more cost-efficient than ever.

Boswell Energy Center Unit 4: Environmental Retrofit

Boswell Energy Center Unit 4, located in Cohasset, Minn., was the WPPI Energy membership’s first owned generation



Boswell Energy Center Unit 4

resource, and remains our most cost-effective baseload plant. Last year, WPPI Energy and plant co-owner Minnesota Power completed an environmental retrofit of the plant. The retrofit – which was completed on time and significantly under budget – included the installation of a dry scrubber, baghouse and activated carbon injection system. These updates will dramatically reduce emissions of mercury, sulfur dioxide and particulates, and will help the plant continue to be a viable resource into the future.

Elm Road Generating Station: Fuel Blending Project

Elm Road Generating Station in Oak Creek, Wis., is recognized as one of the most modern and efficient coal-fired plants in the nation. WPPI Energy has an 8.33% ownership in the facility, which includes two 615-megawatt generating units.

WPPI Energy, along with plant co-owners We Energies and Madison Gas & Electric, made significant progress in an ongoing project to blend more affordable western coal with the eastern coal the plant was originally designed to utilize. The change has already made plant operations significantly more cost-effective. Last year, the fuel blending project saved WPPI Energy members approximately \$3.1 million.

Long-Term Benefits

The projects at Boswell and Elm Road will help ensure a reliable, affordable power supply for years to come.



A crane lifts a conveyor truss from a transfer tower to a drive tower at Elm Road Generating Station.

CapX2020 and the Joint Action Model

WPPI Energy is a proud participant in the Capacity Expansion Needed by 2020 (CapX2020) transmission initiative and part owner of one of the projects, the Hampton-Rochester-La Crosse 345 kilovolt line. CapX2020 was a coordinated effort of 11 electric utilities to meet a growing need for additional transmission capacity by building nearly 800 miles of line spanning Minnesota, Wisconsin, North Dakota and South Dakota.

Recently, researchers at the University of Minnesota (UMN) released a report about the unprecedented levels of cooperation between the people who developed and implemented the various CapX2020 projects. Upon reading this report, it struck me how some of the elements that made the projects successful – a unified vision, cooperation, equal governance and community involvement – are the same ones at the core of the joint action model and WPPI Energy.

Working Together to Meet a Common Goal

According to the study, “The CapX2020 partnership was the first instance of a large group of utilities working collaboratively to address the transmission needs of an entire region.” The people working on the project had a unified vision that “...included a common understanding of the problem and a joint approach to solving it through agreed-upon actions...” By working together, all of the participating utilities and surrounding areas were able to benefit.



Tim Noeldner, WPPI Energy's Vice President of Rates & Special Projects, speaks at an event commemorating the energization of part of the Hampton-Rochester-La Crosse line.

Similarly, joint action is made possible by local, not-for-profit utilities working together so that all may benefit. Through joint action, all participants are offered the same opportunities to own generation and transmission resources, fund and facilitate customer programs and services, access new technology and benefit from a strong political presence.

Cooperation and Combined Strength

Addressing such large scale system reliability challenges would likely have been more than any of the utilities in the CapX2020 group could do alone. As the researchers stated, “[They] recognized it would have been difficult for any of them – even [large, investor-owned] Xcel Energy – to finance and obtain permits to build the lines alone, and that they needed to work together.” Together, the utilities had the resources to finance the CapX2020 projects and the political credibility to advocate on behalf of them, ally with key stakeholders and have a positive influence on regulations.

The idea that we're stronger together is a core value of WPPI Energy and other organizations built around the principles of joint action. WPPI Energy's 51 members pool their financial resources, skills, and political acumen to develop a diverse and flexible set of power supply resources and cost-effective support services for members and customers.

Self-Governance

The CapX2020 group decided self-governance by an elected leadership team was the best way to promote equality. Each utility chose a delegate for the leadership team. The team (with legal counsels) worked together to write governing rules that would be fair for all – from big investor owned utilities to small municipal utilities – in matters of cost allocation, voting structure, project allocation and other logistics.

WPPI Energy is also self-governed by an elected leadership team - the Board of Directors. The Board is comprised of one delegate and one alternate from each member utility. This group of members – not a board of investors, not me, not any of the executive staff – gives the final vote on all major WPPI Energy decisions.

Community Engagement

The CapX2020 projects were generally well-received by the



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Member Spotlight: Columbus, Wisconsin

For many of the people at Columbus Water & Light (CWL), Columbus is not just the city where they work; it's where they made the memories that shaped them into the people they are today. Growing up in Columbus, they waited eagerly for ice cream treats from Mullins in the summer, attended events at the park pavilion and watched fireworks during the city-wide Fourth of July celebration.

Columbus residents have a deep appreciation for the past, and the city certainly has a wealth of intriguing history. The city houses the Farmers and Merchants Union Bank, the last of eight “jewel box” buildings designed by famed architect Louis Sullivan, built in 1919. The Christopher Columbus museum features relics from the 1893 World's Columbian Exposition (World's Fair) in Chicago. The downtown is so historic it was even selected as a filming location for the period film *Public Enemies*, which stars Johnny Depp as the Depression-era bank robber John Dillinger.

A Growing Community

However, while history is an important part of Columbus' identity, the city is also growing and changing. When CWL office manager Nancy Olson was a child, she says Columbus was such a small community that “you used to know everyone in the town.” With a current estimated population of around 5,000 residents, that's no longer the case. Columbus is home to a number of growing businesses, such as Enerpac and American Packaging. Several established businesses are also located in Columbus, including Lyco Manufacturing, Hughes Company, GAR Plastics, GD Roberts, Shopko, Ace Hardware, Pick n Save, True Value Hardware and Sentry Foods.

New Technologies at Columbus Water & Light

Just as the town has changed, so has the utility. CWL was founded in 1898 by the



The City Hall building is one of many historic sites in Columbus, Wis.

Photo by David Carlson

citizens of Columbus. Over the years, CWL staff have adopted several changes to incorporate new technologies.

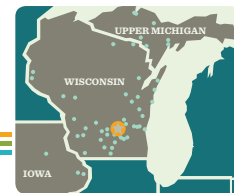
“We used to write payroll checks by hand,” Olson says with a chuckle. “Our meter readers used to travel out to every meter and manually write down meter readings in a book.” The utility staff later changed to handheld methods for meter reading and most recently, to Advanced Metering Infrastructure (AMI).

CWL implemented AMI throughout nearly its entire customer base with help from WPPI Energy's shared meter tech program and revolving loan fund.

AMI has made field work more efficient. “Meter reading used to tie up two linemen at the beginning of each month,” says CWL superintendent Eric Anthon. Now these functions can be handled remotely, which makes the process much faster.

AMI has also made office functions more efficient. During a storm or other outage, employees are able to access information about which houses don't have power and provide timelier, more accurate updates on

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COLUMBUS FAST FACTS

County: Columbia

Number of electric customers:
2,792

Member website:

www.columbuswaterandlight.com

Did you know?

- Heather Miller-Koch, a Columbus native, gave a strong showing in the Heptathlon event at the 2016 Olympic Games in Rio de Janeiro.
- Columbus is called the “Red Bud City” in honor of the many colorful trees lining its streets.
- The Columbus train station is a stop on the Empire Builder Amtrak route that connects Chicago, the Twin Cities, Spokane, Portland, and Seattle. The station serves over 20,000 travelers each year.

power restoration. They can also provide much more detailed data about electricity usage, which can help customers identify fixable problems, save money and reduce their energy consumption.

Efficient Energy Use

Over the past few years, CWL has completed several projects to help the city use energy more efficiently. They were the first in Wisconsin to convert their community's streetlights to LEDs. They installed charging stations for electric and hybrid vehicles, converted lighting to more efficient options in three public parking lots and replaced the city's fleet with electric and hybrid vehicles.

CWL currently offers rebate and incentive programs for residential customers who invest in an efficient air conditioning unit, high-efficiency washer, qualifying shade tree or professional central air conditioning unit tune-up. CWL also offers bonus rewards to customers who participate in the Focus on Energy Small Business Program.

Values That Stand the Test of Time

While there have been a lot of changes over the years, the family values at the heart of CWL's operations have stood the test of time. The 14 CWL staff members know they have to work together in order to get things done. They communicate well, do things as a group, and try to maintain a work-life balance that supports individuals as people, not just as workers.

Energy Services Representative Anna Stieve has worked with CWL for nearly a year. In that time, she's observed the level of respect staff members have for each other.

"They're like a family," she says. "They all seem to like each other and get along well."

A Bright Future

With several projects in the works – a new Ottery Brothers building, Ford dealership, fire station, updated park pavilion and underground electrical infrastructure – Columbus has much to look forward to in the future. For the people of Columbus, these changes are all new opportunities to make memories in their home town.



The Farmers and Merchants Union Bank was used for a bank robbery scene in the movie Public Enemies, starring Johnny Depp. Photo by David Carlson

WPPI ENERGY NEWS

WPPI Energy Members Modify Contracts

In March, 49 members, representing 98% of WPPI Energy's total load, closed out a process in which they made modifications to their all-requirements power supply agreements. The modifications resulted in terms extending through 2055, and will allow WPPI Energy staff and members to prepare for potential Clean Power Plan regulations; consider competitive, long-term power supply options; meet evolving technology needs and provide exceptional programs and services well into the future.

WPPI Energy's 2016 A Bond Issuance Closes

WPPI Energy's 2016 A bond issuance closed on April 27. WPPI Energy issued bonds totaling approximately \$75.6 million of par to advance refund a portion of the 2008 A bonds. The resulting net present value savings was approximately \$9.8 million or 12% savings of the refunded bonds.

WPPI Energy Evaluates Renewable Energy Proposals

WPPI Energy's request for proposals (RFP) for approximately 100 megawatts of nameplate electric generating capacity from



Pictured from left to right: Jim Brooks, Alderperson and Utility Committee Chair, and Mark Sendelbach, Superintendent of Evansville Water & Light (EWL), prepare to modify EWL's all-requirements, long-term power supply agreement.

wind or other renewable resources closed in July. The RFP sought proposals from qualified bidders for power purchase agreements of 20 years or longer, with initial energy delivery beginning sometime between mid-2018 and late-2020. WPPI Energy is now evaluating the proposals.

MEMBER NEWS

Members Named to NREL Top 10 Lists

River Falls Municipal Utilities, Stoughton Utilities and Waterloo Utilities received recognition from the Department of Energy's National Renewable Energy Laboratory (NREL) for their renewable energy leadership in 2015. NREL evaluated utilities' renewable or 'green' power programs and released lists of the top 10 utilities in different categories. WPPI Energy members made several of the lists. See their rankings at <http://apps3.eere.energy.gov/greenpower/resources/tables/topten.shtml>.

River Falls Municipal Utilities Receives APPA Award

River Falls Municipal Utilities (RFMU) was awarded the 2016 Award of Continued Excellence in Innovation and Commitment to Energy Efficiency



and Renewable Energy from the American Public Power Association's Demonstration of Energy & Efficiency Developments (DEED) program. The

award recognizes continued commitment to DEED and its ideals, including supporting research, development and demonstration, improving efficiency, exploring renewable resources, and supporting public power. RFMU provided three scholarships to students attending the University of Wisconsin – River Falls and supported them in their research projects.

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Community Solar Gardens up and Running

The community solar garden pilot projects in River Falls and New Richmond are up and running. The gardens use arrays of solar electric panels to generate approximately 250 kilowatts of renewable energy. Local residents, businesses, and non-profit organizations served by the two utilities are eligible to subscribe to receive energy from the gardens.

STATE ENERGY POLICY UPDATES

Michigan

New PSC Commissioner Appointed

Gov. Rick Snyder announced Rachael Eubanks of East Lansing has been appointed chairwoman of the Michigan Public Service Commission. Eubanks will fill a partial term left vacant by former chairman John Quackenbush, and will serve until July of 2017. Her appointment will need to be confirmed by the State Senate.

MMEA Fall Conference

The Michigan Municipal Electric Association will host its 2016 Fall Conference Oct. 5-7 at the Hilton DoubleTree Hotel in Holland, Mich. The conference will include the General Membership Meeting (Oct. 7), breakout sessions, a visit to the new Holland Energy Park and vendor exhibits. Visit www.mmeanet.org.

Energy and Technology Committee Passes Energy Bills

The Michigan Senate's Energy and Technology Committee recently passed the following legislation, which awaits further action on the Senate floor:

- New reporting would be introduced to ensure Michigan can meet its capacity needs with local, in-zone generation.

- The current 10% electric choice market would remain in place, but with additional requirements for alternative electric suppliers.
- The Michigan Energy Optimization program would be eliminated by 2019, replaced by efficiency-based financial incentives for rate-regulated utilities.
- The current 10% renewable portfolio standard would be eliminated, replaced by a 35% clean energy goal for 2025.

Wisconsin

WPPI Energy Annual Conference

WPPI Energy's 2016 annual conference took place September 15-16 in Green Lake, Wis. The conference included presentations on timely topics, a customer panel, keynote speech by futurist Rebecca Ryan, awards banquet, and Board of Directors meeting.

Iowa

IAMU Energy Conference

The Iowa Association of Municipal Utilities (IAMU) will host the 2016 Energy Conference November 29-30 at the Prairie Meadows Event Center in Altoona, Iowa. The conference will include presentations, best practices, and member case studies. Visit www.iamu.org.

Stoughton Trailers: A Brighter, Cleaner Place to Work



Pictured from left to right: WPPI Energy Services Representative Cory Neeley, Stoughton Utilities Director Bob Kardasz, Brodhead Mayor Douglas Pinnow, Stoughton Trailers President Bob Wahlin, Stoughton Mayor Donna Olson, Former Evansville Mayor Sandy Decker, WPPI Energy President and CEO Mike Peters.

When Don and Carol Wahlin started their small family business in 1961, they probably didn't imagine it would become one of the largest employers in Southern Wisconsin. However, Stoughton Trailers – a manufacturing company that produces equipment for conventional and intermodal freight transportation – now employs thousands of people every year.

Though the Stoughton Trailers 'family' has grown, employee safety is still a top priority. The company recently made 20 energy efficiency updates across all nine of its facilities, which are located in the Wisconsin communities of Stoughton, Evansville and Brodhead. The projects included lighting upgrades, air compressor improvements, ventilation-system improvements, and the installation of variable-frequency drives for the company's dust collectors.

The costs were partially covered by a combination of incentives and other energy efficiency funding from Wisconsin's Focus on Energy program

and the WPPI Energy RFP for Energy Efficiency program. In total, Stoughton Trailers received \$315,000 in funding.

"...The financial incentives were really helpful. We're grateful for everyone's help," said Sam Woodford, lead safety engineer at Stoughton Trailers.

Stoughton Trailers was eligible for the Focus on Energy incentives because all three of the company's public power utilities – Stoughton Utilities, Brodhead Water & Light and Evansville Water & Light – contribute funds to the statewide program. The company was also eligible for the WPPI Energy RFP program, because all three utilities are members of WPPI Energy.

WPPI Energy's Cory Neeley is an energy service representative for Stoughton Utilities, Brodhead Water & Light and Evansville Water & Light. He worked closely with the Stoughton Trailers team, all three utilities and a representative from Focus on Energy to identify and

connect Stoughton Trailers with opportunities for improvements and savings. Neeley estimates that over the lifetime of the upgrade projects, Stoughton Trailers will save more than 22.8 million kilowatt-hours of electricity and 3.5 million therms of natural gas. This translates to a fiscal savings of more than \$4 million for the company and has great benefits for the cities as well.

"Industrial businesses like Stoughton Trailers are among the biggest users of energy in our communities, and they're also often some of the largest local employers," said Stoughton Utilities director Robert Kardasz. "Helping them save makes them more competitive, supports the local economy and reduces demand on our system."

Most importantly, these updates will provide an even better workplace for employees. "These changes have resulted in a cleaner, brighter and safer facility," said Stoughton Trailers President Bob Wahlin.

Continued from page 2

public, due in large part to the group's intentional community engagement. They solicited feedback early and often, hosted numerous open houses and held meetings "anytime anyone wanted one," according to Mark Nisbet of Xcel Energy. Local landowners provided valuable information about irrigation system plans, airports and future developments that helped the CapX2020 group determine project routes.

Similarly, the WPPI Energy membership makes many decisions based on customer feedback from surveys, meetings, events, and communications. This has resulted in programs tailored to fit customers' needs and interests, changes in the way the utility communicates with customers, the addition of renewable energy customer programs and more.

The unified vision, cooperation, fairness and thoughtfulness at the heart of the CapX2020 initiative changed the story of the region's future. Instead of transmission overloads, outages and voltage problems, residents now have a stable electrical system that will help their local utility access renewable energy, provide reliable service and buy energy at a more economical rate now and into the future. These same qualities are what WPPI Energy was built upon and what will keep it strong in the future. Our members are united, because they understand the challenges that lie ahead and recognize the benefit of working together to meet those challenges. Together, they own a diverse energy portfolio, maintain a strong political reputation, provide best-in-class customer services, self-govern and build connections with community leaders and customers. Together, they are well-prepared for the future.

Upcoming Technical Training Courses

Seventhwave Training | seventhwave.org/education/events

Commercial and Industrial Hydronic Heating Systems

September 27 • Beaver Dam, WI

Commercial and Industrial Hydronic Heating Systems

September 29 • Middleton, WI

Energy Efficient Foundry Operations

October 27 • Location TBD

Focus on Energy Training | focusonenergy.com/about/events

Motors and Variable Frequency Drives

October 3 • Madison, WI

Introduction to Energy Management

October 3 • Madison, WI

Intermediate Energy Management

October 4 • Madison, WI

Operations and Maintenance

October 11 • Green Bay, WI

Operations and Maintenance

October 12 • Eau Claire, WI

Strategic Energy Management

October 13 • Eau Claire, WI

Energy Efficiency Improvements for Industrial Refrigeration Systems

October 19-20 • Green Bay, WI

Process Heat and Recovery

November 1 • Milwaukee, WI

Introduction to Energy Management

November 1-2 • Milwaukee, WI

Strategic Energy Management

November 10 • Milwaukee, WI

Energy Service Representatives: Connecting Utilities and Customers

Who They Are

Energy Service Representatives (ESRs) are the Jacks and Jills of all trades. Part industry experts, part diplomats and part road warriors, ESRs are the link connecting member utilities with customers, statewide efficiency programs and WPPI Energy staff. They provide a wide variety of services, including: strategic energy assessments for customers, customer communication during a power outage, support of local economic developments, coordination of energy presentations at schools and customer program management.

Each ESR serves 1-5 communities, and their services are crucial for members and their customers.

“Without our ESR Anna Stieve’s assistance, some of the customer projects

might not happen,” says Brett Schuppner, general manager for Reedsburg Utility Commission. “She helps us provide customer services that wouldn’t be economical for us to provide on our own.”

Customer Connections

Customer satisfaction is one of the most important benchmarks of success for WPPI Energy member utilities, and the ESRs have made a significant difference in this area.

“Having an ESR has been a huge asset to the City of New Richmond and our utility customers,” says Jeremiah J. Wendt, Director of Public Works for the City of New Richmond.

Part of the Team

ESRs have regular contact with utility staff and travel to the communities they

serve each week. Many utilities see their ESR as a member of the team.

“Brett Niemi is an important asset and member of our family at the L’Anse Electric Utility. His positive attitude and eagerness to assist helps us do our very best for the community, and helps our community feel the benefit and value of their utility,” says Bob LaFave, village manager of L’Anse, Mich.



The WPPI Energy ESR Team. Pictured from left to right: Wes Arndt, James Schwingle, Clinton Cry, Anna Stieve, Tom Westhoff, Lisa Miotke, Jeff Forbes, Steven Engebos, Frank Barth, Cory Neeley, Melissa Schmitz, Mike Hodges, Beth Carlson, Mike Gentry, Brett Niemi, Eric Kostecki. Not pictured: Greg Hoffmann.