

More activity needed to fill in gap between energy demand, supply

Powering the growth in manufacturing in Western New York is and will continue to be a critical issue for business, industry and consumers.

Buffalo Business First invited area industry leaders to address the concerns with the energy supply both today and in the future and what the community and different sectors of the economy need to do to ensure adequate, affordable energy for business, manufacturing and the community as a whole.

The discussion was led by David Flynn, a partner at Phillips Lytle LLP and leader of the firm's Energy and Renewables Industry Team.

"You don't need to be an energy insider to understand and appreciate where we are right now with the supply of energy and where our energy needs are going," Flynn said. "How do we supply those energy needs and some of the competing interests we're all dealing with whether they be environmental, economic, geopolitical? All of these things come into play in terms of how we power our economic growth going forward."



Panelists were:

- Dennis Elsenbeck, head of Energy and Sustainability for Phillips Lytle LLP's Energy Consulting Services
- Ken Kujawa, regional director, National Grid
- David Leathers, general manager, Jamestown Board of Utilities
- Andrew Weidert, senior vice president of strategic solutions, Stark Tech

THE ISSUES

Dominant sources of energy in the region today include natural gas, some nuclear from plants in Central New York, hydroelectricity, solar and wind. They are replacing certain fossil fuels, such as coal, that have disappeared completely.

"We are in a situation where we have a lot of renewable resources but not a lot of baseload sources in the region, other than our existing hydro," Flynn said. "The deactivation of the fossil fuel power, not just in the region here but across the state certainly is outpacing the renewable energy that's being added. It is critical to understand that on a kilowatt hour-to kilowatt hour-basis solar is not the same as a baseload plant. Most renewables are intermittent in nature, and the ability to control baseload generation and have it online when it's needed is a much different and higher value energy source than certain renewable energy sources, which are dependent on the sun, daytime hours and the wind blowing. So we are becoming more and more dependent on a less and less controllable and manageable energy source."

There is increased demand coming in part from electrification efforts in New York State where newly constructed buildings will be required to run entirely on electric. That will strain the economic factors associated with the cost of construction and the cost to operate a building, especially during the temperature extremes in the winter and summer months.

Further, the new economic development opportunities of data centers and semiconductor chip factories are extraordinarily energy intensive. Hundreds of megawatts of electricity will be needed by each individual project.

"If you're looking at that in terms of increasing demand while you have a static or likely shrinking supply of energy you don't need to have your PhD in economics

to say there's a crunch that we're already starting to see," Flynn said. "What does it mean in the future and what can we collectively do to address these opposite forces that are like two trains on the same track approaching each other?"

ADVOCATE

First and perhaps most importantly, energy consumers need to be engaged with elected officials and others in positions of power in government to ensure their concerns are being heard, Kujawa said. Work one-on-one with the officials or through a trade group or the chamber of commerce.

Without hearing from the industry, the state leaders don't have a full appreciation of the impact of these decisions, such as those leading to the Climate Leadership

and Community Protection Act and the All-Electric Buildings Act, he said.

There is much concern about generation availability, transmission and distribution investments that have to be made by the electric utilities, he said. What those ultimately mean for costs is unknown.

“How is the business community being represented when those decisions are being made?” Kujawa said. “If you’re not engaged if you’re not voicing your concerns about where the energy market is heading in New York State and how it may impact your business and cost structure, you are doing yourself a disservice, because there are other factions that are out there in Albany that are advocating that the state head down a certain path when it comes to energy policy.”

Also engage with your utility early in the process of a construction project, particularly as the All-Electric Buildings Act goes into effect for new projects at the end of this year, he said.

The utilities need to know what the projects entail and what the electric demand will be so the utility can determine the delivery voltage required, and the infrastructure can be in place to meet what electric capacity needs are going to be, he said.

“The marketplace for energy infrastructure right now is very challenging. Lead times for equipment,

transformers, is two years. If you have to build a station you have to factor all those infrastructure considerations into account,” Kujawa said. “We are facing the same type of supply challenges that other industries are facing as well, and you need to make sure that you take that into account.”

NUCLEAR PROSPECTS

The governor recently announced that New York is actively exploring the potential for nuclear energy as a zero-emission solution to meet rising energy demand, and market interest in New York is high for nuclear.

Elsenbeck said manufacturing cannot succeed without it.

“Nuclear provides an opportunity at zero emission to balance the economic and environmental sustainability by looking at it from a point of view of high quality, 24/7 operation because that’s what manufacturing is looking for,” he said.

The current administration in Washington is focused on speeding up regulations, which is key toward attracting entities to establish more sites.

“In my opinion we are already way behind, and we have got to catch up,” Elsenbeck said. “Nuclear provides an answer; we have to look at it. New York has to be a leader not a follower and currently we’re a follower.”

Nuclear power has a 10- to 15-

year timeline, which doesn’t respond to today’s market demand, so bridge technologies, such as natural gas, need to be considered, he said.

He added that bridge technologies, some of which include fuel cells or linear generators, are low emission, available and stackable, so they’re modular. All of those options are behind the meter, eliminating the three-year process with the independent system operator.

“We’ve got to focus on nuclear, but we also have to really bring ourselves up to speed on bridge technologies,” Elsenbeck said. “They’re a true solution today.”

UTILITIES AS PARTNERS

It is important for companies and businesses to communicate to the utility their required or desired decarbonization or electrification objectives as soon possible in the planning of a project, Leathers said, because megawatts are not limitless and infrastructure upgrades take time.

Many large manufacturing industrial customers aren’t aware of the long lead time needed to upgrade electric service, he said. If utility staff are involved early in the planning process, there is greater opportunity to be creative with different approaches, options and alternatives and for the company to understand the challenges on the utility’s end.

It is difficult for the utility to define a solution in a short period of time for large requests, such as five or 10 megawatts

more by data centers and other high-megawatt users, he said.

“Customers often are asking for a lot more capacity than they’re actually going to use. They’re very conservative in their engineering and their planning, and for us to be in the discussions on that helps us better understand what they really need to be supported,” Leathers said. “As a municipal distribution utility, the more information we can get the sooner in the process we can get it, we want to be viewed as a partner for them, so that they can ultimately find an acceptable outcome.”

REDUCING CONSUMPTION

Manufacturers should aim to reduce energy consumption without sacrificing productivity and resiliency by taking a team approach, Weidert said.

In his role at Stark Tech, Weidert is responsible for shaping and executing strategies that help organizations achieve ambitious sustainability, resiliency and operational performance goals.

“You need the engagement from the utility to understand what’s available, what risks might be out there,” Weidert said. “You need your consultants to be able to work with you to understand what you might be able to leverage to fund some of these initiatives, and you need your building consultant to work with you in regard to how you can improve your facility.”

The first critical step is to get a

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solid overview in what Weidert calls a facility road map to understand utility consumption and where the opportunities are “to turn small dials or large dials are at your facility and be able to improve energy efficiency,” he said.

In doing this, many facilities find they have end-of-life and inefficient equipment, which presents an opportunity to improve resiliency by putting in new more energy-efficient equipment and not compromise downtime, he said.

“If you do it right, getting that facility road map is the first critical step where you start getting a good understanding of your facility, your campus and where your main utility consumption is coming from,” Weidert said.

CLCPA

The Climate Leadership and Community Protection Act is a transformational law in New York that is going to impact everyone who uses electricity. For businesses, it is akin to a raw material. For utilities, the CLCPA, as well as the All-Electric Buildings Act, means having to meet an aggressive timeline.

School buses, new cars, new construction and heating will all drive demands on the electric system within the next five years.

“We have to increase the pace and the scale at which we’re investing in our infrastructure in order to meet what we anticipate being increased electric demand on our system,” Kujawa said.

In February 2024 National Grid announced an initiative, Upstate Upgrade, in which it is investing \$4 billion in its upstate New York transmission system, rebuilding substations and 1,000 miles worth of transmission assets. The utility recently had a distribution rate increase, which will support the upgrades.

The utility recently introduced increased delivery voltage to Larkinville and is about to rebuild six transmission lines in the Batavia area to help meet the new goals and standards.

“We’ve been going full throttle trying to understand where we need to make our investments in order to support what the state is looking to accomplish through the CLCPA and the All-Electric



Buildings Act,” Kujawa said. “We are not sitting on our hands, but it takes a lot of time effort and money in order to be able to pull off these investments.”

Elsenbeck said the state’s growth has been steady because it previously never had transmission or distribution capacity.

“New York has never been able to capture economic cycles over the year,” he said. “We’re now talking

about the new cycle which is AI, data centers, semiconductors and advanced manufacturing. If we do not start defining that transmission capacity for economic growth is our problem to solve for, we are going to have the same conversation 15 and 20 years from now.”

He said rather than meeting the objectives of the state, the model should flip to the needs of the market, and manufacturing needs to help drive

the conversation.

In Jamestown, leaders are out in front of being prepared and supportive of the state’s efforts, Leathers said. They have embarked on several initiatives: They have installed distributed solar to try to boost certain areas in their system, completed a study of the school bus fleet for preparedness to electrification and applied for grants to look at capacity upgrades for available development sites.

“We’re actually looking at our district heating system and to see how we utilize and potentially expand the district heating system so that customers and companies can decarbonize without strictly going to electrification,” Leathers said.

It is clear initiatives need to continue, because there is no turning back on the state’s objectives, Weidert said.

“When you envision what we’re talking about and where we are today, there is no backspace button on the keyboard. We are moving forward and going through with the next step and the next step,” he said. “I think advocating and being a voice and certainly talking to the people who can be a voice for you is going to be a big piece, but the backspace button is gone.”