



Written Comments: Energy Storage

Angela Wojtowicz,
Vice President of Business Planning and
Development

February 23, 2022

Good afternoon Chairman Bellino, Vice Chairs Markkanen and Manoogian and members of the House Energy Committee. My name is Angela Wojtowicz, I am the Vice President of Business Planning and Development for DTE Electric. Thank you for providing me the opportunity to share our perspective on energy storage.

For today, I want to focus my testimony on three items:

- First, provide a brief update on DTE's progress towards our net-zero goal
- Second, share examples of how DTE is leveraging our assets to store energy and balance the intermittence of renewables
- And third, highlight the energy storage pilot proposals we recently submitted to the Michigan Public Service Commission

Let me begin with our progress toward net-zero.

DTE is committed to getting as clean as we can as fast as we can, while taking reliability and affordability into account for our customers. This commitment includes our investment in state-of-the-art natural gas generation and continuing to expand renewables, while retiring coal plants and promoting energy efficiency to reduce carbon emissions from the power sector. We also embrace our role as a catalyst for other stakeholders seeking to achieve their own sustainability goals.

In September of 2019, DTE Electric was one of the first utilities in the country to commit to a goal of net-zero emissions by 2050. At that time and still today, we have a clear line of sight to reducing our carbon emissions by 80 percent from our 2005 baseline. Our commitment also acknowledged that emerging technologies and innovation – such as energy storage - would play an important role in our journey to net-zero.

Since then, DTE Electric has increased the pace of its investments in renewables and accelerated coal plant retirements. Last year alone, DTE Electric added 535-megawatts of renewable energy. Today, our fleet of 50-plus wind and solar parks generate enough clean energy to power nearly 700,000 Michigan homes.

DTE's voluntary renewable program, MIGreenPower, also grew last year. This program now includes 48,000 residential subscribers and 450 business customers who collectively helped avoid more than 418,000 tons of carbon emissions in 2021.

Last year we also committed to ending the use of coal at our Belle River Power Plant two years earlier than previously expected. This will allow DTE Electric to achieve its 50% carbon reduction milestone by 2028 instead of the previous goal of 2030.

Over the coming years, DTE Electric will continue to analyze opportunities to advance our pace to net-zero in our generation transformation.

Let me now turn to how DTE is leveraging our assets to store energy and balance the intermittence of renewables.

Today we know that energy storage can play a key role in balancing customer demand for electricity with the supply.

In fact, the Ludington Pumped Storage Hydro plant has played this role for Michigan since it began operating in 1973. In short, water is passed back and forth between Lake Michigan and the plant's upper reservoir in a manner that mirrors the highs and lows of customer demand. In doing so, the Ludington plant supports overall grid reliability by balancing the intermittent nature of renewable energy. This type of role for energy storage will only grow as Michigan brings more wind and solar online in the coming years.



Image of Ludington Pumped Storage Power Plant

DTE's Blue Water Energy Center will also play an important role for Michigan in the decades to come. Expected to be online later this year, Blue Water will be the most efficient 24/7 power plant in the state – providing enough low-emission power to serve 850,000 homes in Michigan.

Over time, as renewable energy penetration increases, the Blue Water Energy Center could transition from a 24/7 resource to a balancing resource. The plant has the capability to quickly ramp up and down and compliment the intermittency of renewable resources and will be a valuable tool to meeting Michigan's energy needs in a reliable and affordable manner.

The last item I want to address is DTE's energy storage pilot proposals, which we recently submitted to the public service commission for review.

As the committee may be aware, DTE Electric filed a rate review last month with the MPSC. As part of the case, we included proposals for ten storage pilots that will help give us firsthand experience using different energy storage applications to meet our energy and grid reliability needs. In addition, we will be analyzing the role of storage in our CleanVision Plan which will be filed in October. We expect that batteries will have a role in our generation plan, especially as additional renewables are added to the system.

DTE aims to be a leader in the deployment of battery and other storage applications. These pilots will help us gain knowledge and experience in a number of critical areas, which include how energy storage can:

- enhance the performance of DTE's grid,
- support the deployment of renewable energy,

- and reach our decarbonization goals

These pilots are designed around various use-cases, including:

- balancing intermittent renewable energy,
- providing energy to meet peak customer demand,
- displacing potential investments in the distribution grid, and
- replacing portable generators currently on the distribution grid

I would like to highlight two of these pilots for the committee.

First, DTE has proposed a green¹ hydrogen (H₂) pilot at Blue Water, that would demonstrate the production, storage, and blending of green¹ hydrogen. Hydrogen is produced through

electrolysis, the process of using electricity to separate water into hydrogen and oxygen. When the electricity used in the process comes from renewable sources, such as wind or solar, the result is a zero-carbon energy source and is referred to as green hydrogen. DTE's proposal would produce green hydrogen at times when there is excess renewable energy and then store that hydrogen for use at a later time (similar to how Ludington stores pumped water for later use). This pilot could provide up to 8 hours of hydrogen storage that can later be injected at 2% into the natural gas supply for Blue Water



Image of DTE's Green H₂ Demonstration Pilot

The second pilot I want to highlight is a grid-scale, battery energy storage system (BESS). Our proposal would replace the five diesel powered peaker units located in Trenton with a 14 MW battery with a 4-hour storage capacity (56 MWh). The battery would charge during times of low customer demand with off-peak energy and discharge during times of high demand. As we continue to move toward meeting our decarbonization goals, energy storage will undoubtedly have a role to play. These storage pilots are critical to understanding how to best meet the requirements of the future grid and achieve the decarbonization goals set forward by DTE, the State of Michigan, and our stakeholders.

Finally, I would like to acknowledge that DTE Electric's forthcoming Clean Vision Plan will be modeling how energy storage can serve as a resource for our customers. Our goal is to develop

¹ Hydrogen producers, marketers, government agencies, and other organizations might categorize or define hydrogen according to the energy sources for its production, and they use a color code to categorize hydrogen. For example, hydrogen produced using renewable energy might be referred to as renewable hydrogen or green hydrogen. (<https://www.eia.gov/energyexplained/hydrogen/production-of-hydrogen.php>)

a plan that is inclusive of emerging technologies and flexible enough to meet the growing demand of clean, affordable and reliable energy.

Thank you, Mr. Chairman and committee members. I welcome any questions.