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RE: Docket No. QO22080540 – New Jersey Energy Storage Incentive Program

Vicinity Energy Inc. (Vicinity) is pleased to submit the following responses to the New Jersey Board of Public Utilities (NJBPU) in reply to the Request for Information pertaining to Docket No. QO22080540 – New Jersey Energy Storage Incentive Program (NJ SIP).

In October of 2020, Vicinity released our 2050 Net Zero Carbon Roadmap. With this plan in place, we are confident we can make unique and vital contributions to the state's carbon reduction goals**.** Vicinity's roadmap to net zero carbon emissions by 2050 is not only consistent with the goals of the State of New Jersey's Energy Master Plan (EMP), but we are also exploring strategies to further align with Governor Murphy's more recent accelerated goals for net zero by 2035.

Vicinity Overview

With 19 district energy systems in 12 major cities, including Trenton, Vicinity is the largest provider of district energy solutions in North America. We produce and distribute steam, hot water, and chilled water through a network of underground pipes to over 230 million square feet of building space, eliminating the need for on-site boiler and chiller plants in individual buildings, improving overall efficiency, lowering carbon footprints, and increasing reliability.

One key advantage of district energy systems is their flexibility and adaptability. These systems are designed to be nimble and agile, capable of accommodating various fuel sources. As cities transition towards a carbon-free future, district energy systems can seamlessly adapt to the changing energy landscape. They are not limited to a single energy source and can integrate renewable energy technologies such as wind and solar. This flexibility enables district energy systems to play a crucial role in decarbonizing urban cores.

Moreover, district energy systems can leverage existing infrastructure to eliminate CO2 emissions at a significantly lower cost compared to alternative approaches. By utilizing the already established district energy infrastructure, the transition to decarbonized energy becomes more feasible and cost-effective for more facilities and therefore, more people. This affordability factor allows for a more inclusive approach to decarbonization, ensuring that even communities with limited resources can benefit from reduced carbon emissions.

The backbone of Vicinity's decarbonization plan is to electrify our operations by generating steam using electric boilers and heat pumps and procuring renewable electricity from the grid as our primary fuel source. The electrification of individual buildings in Trenton will be an incredibly challenging and

expensive task in the time frame required. By connecting to the district energy system and using our electrical steam – or eSteam ™- product, building owners will have the ability to successfully meet federal, state and local regulations and have access to 100% renewable, carbon-free thermal energy.

Vicinity in Trenton

Vicinity owns and operates the Trenton District Energy System, distributing reliable chilled and hot water–to critical buildings, including the Statehouse, Culture Complex, Justice Complex, Mercer County Criminal Courthouse, Mercer County Civil Courthouse, Mercer County Community College, New Jersey State Prison, Cure Insurance Arena, NJ DEP, new Tax Building, Labor & Industry, City Hall and other residential and commercial buildings.

Vicinity's facility in Trenton has operated since 1984 and continues to provide energy services under a series of long-term agreements. Beneath the streets of Trenton, Vicinity's robust underground district energy network of piping consists of 12 miles of hot water and 4 miles of chilled water piping. The piping network distributes reliable hot and chilled water for heating and cooling to more than 12 million square feet of building space in downtown Trenton. The energy is produced from combined heat and power (CHP) and a state-of-the-art chilled water facility. The facility was previously granted EPA's ENERGY STAR Award for leading the industry in producing and selling energy-efficient products and services and developing and adopting strategies that substantially save our homes, buildings, and plants. All these efforts contribute to reduced emissions and create a healthy environment. By combining the production of thermal energy and electricity into one process, CHP results in the most efficient use of fuel to generate electricity and condition buildings, using far less fuel than when heat and power are produced separately. CHP is also highly resilient, providing uninterrupted thermal energy and power in the event of a grid failure. In addition to improving Trenton's critical energy infrastructure and reducing its carbon footprint, with district energy, individual buildings do not require onsite equipment–freeing up space for building amenities, eliminating the risk of onsite combustion, and reducing upfront capital and ongoing operations and maintenance (O&M) costs.

Vicinity will transition its operations to include an increasing percentage of electrically generated steam to produce eSteam ™. eSteam ™ is a carbon-free renewable energy product where Vicinity will purchase renewable electricity from the grid, import the power to its facility through the co-located electric substation, and convert the power into steam utilizing an industrial scale heat pump.

Responses to NJSIP

Vicinity is supportive of the NJBPU's efforts to incentivize energy storage as it further aligns the state with our own greenhouse gas (GHG) reduction goals by incentivizing utilities to purchase renewable power during non-peak times, when prices are low. More specifically, **Vicinity supports the inclusion of thermal storage as a qualifying electric storage technology in the development of an energy storage incentive program.**

Similar to electric energy storage systems, thermal energy storage systems allow Vicinity to procure the greenest, most affordable electricity when it is available (typically overnight, offshore wind). Currently, Vicinity supplies several buildings in downtown Trenton with reliable cooling and chilled water services – offering a cost-effective alternative to replacing, operating, and maintaining in-house cooling equipment. By reducing electricity use during peak demand, Vicinity takes pressure off the electrical grid when power usage is at its highest, while also helping to reduce costs for customers.

Because there is a several-hour disconnect between our morning peak steam generation and peak renewable generation, our future plans to further decarbonize our district energy system will include the installation of up to 1,000 MWh of thermal storage. Using molten rock technology, thermal storage will allow us to mitigate the cost and carbon content of electrified steam by procuring renewable energy during the overnight hours when demand is low and storing it in the thermal battery until district heating demand is high, typically the early morning hours as buildings heat up for the workday. As a result, Vicinity will dramatically lower the average cost of renewable thermal energy for our customers.

As the state is already aware, additional clean energy resources are likely to be needed to ensure there are sufficient balancing resources available when intermittent renewable energy is not available.

Request For Information Questions

1.1 and 1.2: What are the advantages and disadvantages of utility control versus non-utility control of energy storage systems? For Distributed resource Performance-based Incentives, should responding to a utility signal be compulsory or voluntary?

The response of a Distributed resource to a utility signal should be voluntary. Vicinity is concerned that utility control of the energy storage system may limit financial incentives that distributed resources could otherwise earn. Distributed resources will have made financial commitments and should retain the ability to oversee the operation of its storage system to optimize returns on its investment, while simultaneously minimizing carbon emissions. Utility control could also dissuade investment in energy storage systems due to the fear that utility control could negatively impact financial returns. Lastly, Vicinity is concerned that utility control of energy storage systems could lead to market manipulation and unfair market advantage.

2.2 and 3.10: Should the proposed first-come, first-served application process be changed to a "First-Ready, First-Served" process? Should energy storage owners be permitted to opt in, or be subject to utility control, in order to be eligible for Distributed performance incentives?

Vicinity supports changing the language from "first-come, first-served" to "first ready, first-served", as we believe the latter phrasing better emphasizes the importance of preparedness. The State of New Jersey has set one of the most ambitious storage targets: 600 megawatts by 2021 and 2,000 megawatts by 2030. Unfortunately, the State fell short of meeting the 2021 target. It is now imperative for the State to consider all available resources, including utilities. If they are deemed "ready" to contribute, then they should have the opportunity to participate in the incentive program. This approach is vital to ensure the State is successful in achieving its 2030 target and it is also for these reasons that owners of energy storage should be permitted to voluntarily opt-in in order to be eligible for Distributed performance incentives.

Conclusion

Vicinity's district energy system is critical to helping the State of New Jersey achieve its GHG reduction goals. While our customer base consists of several vital institutions with mission-critical energy requirements, the environmental benefits extend to all corners of Trenton, including the environmental justice neighborhoods that are disproportionately affected by fossil fuel pollution.

In closing, Vicinity thanks the NJBPU staff for the opportunity to provide responses to the proposed NJSIP and for demonstrating leadership on energy storage. We share your commitment to addressing climate change and achieving net zero carbon emissions and, as usual, welcome the opportunity to discuss our responses in greater detail.

Respectfully,

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