

NICOR GAS COMPANY'S RESPONSE TO THE ICC STAFF'S SECOND REQUEST FOR COMMENTS IN THE THERMAL ENERGY NETWORKS WORKSHOPS

Pursuant to a request from the Illinois Commerce Commission ("Commission") Staff in the workshops addressing Thermal Energy Networks, Northern Illinois Gas Company d/b/a Nicor Gas Company ("Nicor Gas" or the "Company"), through its undersigned attorneys, respectfully submits these Comments addressing Staff questions raised in the workshops.

Thermal Energy Network Workshop – Request for Comment #2

1) Project designs that could maximize the value of existing State energy efficiency and weatherization programs and maximize federal funding opportunities to the extent practicable.

Development of thermal energy networks in conjunction with other state, utility, and locally supported energy efficiency programs can maximize value and support cost savings. Weatherization programs can lower the overall energy demand for heating and cooling buildings making thermal energy networks less expensive to develop. Hybrid systems that integrate thermal energy networks with variable renewable energy resources can also be dispatchable, bolstering system reliability and resiliency. All of this can be facilitated through public-private partnerships that promote education, outreach, and workforce development.

To maximize value to customers, thermal energy networks should use project designs that integrate with other utility and government initiatives. Project designs should incorporate and consider the following features:

- Ensuring that buildings connected to the thermal energy network are highly energy efficient will lower the costs and improve the operating efficiency of the thermal network. For example, ensuring that houses connected to a residential network are weatherized and using other measures to lower heating and cooling loads (e.g., smart thermostats) will reduce the capacity of the thermal network and reduce its required investment. Weatherization also will ensure that the households and businesses relying on the thermal network for space conditioning are more comfortable and satisfied with thermal network services.
- Ensuring that there is a sufficiently trained workforce for the thermal energy network will improve the delivery of this new service. Businesses and workers required to deliver thermal networks include, but are not limited to: 1) specialty drilling services for geothermal loops; 2) specialized HVAC technicians to design and install geothermal heat pump systems; 3) weatherization and other contractors to improve the efficiency of the building stock; 4) engineering and design professionals; and 5) program and project management professionals.
- The thermal network offering should be integrated with existing energy efficiency programs providing weatherization and other measures to low-income residential

customers. These programs are currently offered through a successful partnership of Illinois utilities and the Department of Commerce and Economic Opportunity (DCEO). DCEO, in turn, deploys a combination of state and federal government funding. Utility programs are also working with the Illinois EPA to coordinate utility program delivery with expanded funding for low- and moderate-income customers now available from the Inflation Reduction Act. These low-income programs primarily deliver weatherization services, but also deliver low-cost measures (e.g., thermostats, low flow showerheads), as well as HVAC and appliance upgrades for customers with faulty equipment.

- The thermal network offering also should be integrated with non-low-income programs serving other residential and business customers. These programs are currently offered through Illinois natural gas and electric utilities. These programs deliver weatherization, energy efficient equipment, boiler system upgrades in multifamily housing, low-cost thermostats and showerheads, and many other measures. The utility programs leverage federal tax credits that are already available for residential and commercial customers and utilities are working with the Illinois EPA to coordinate utility program delivery with expanded funding targeting non-low-income customers now available from the Inflation Reduction Act.
- The thermal network offering should be integrated with the new demand response offerings being developed by Nicor Gas. Nicor Gas is developing a pilot program that leverages hybrid heating technologies and smart thermostats to provide peak demand savings. Integrating these technologies into the thermal network will further lower network capacity levels and correspondingly lower costs further.
- The thermal network offering should be integrated with existing utility and state workforce development programs. Utility programs work to increase both the number of businesses and workers available to meet the increasing demand for energy efficiency services. The utility programs focus their efforts in underserved communities to ensure that all communities served by the utility will have an opportunity to benefit from jobs and businesses created in the energy transition. The utility programs also integrate with existing state and federal workforce programs.
- Funding for thermal networks should be clearly defined, similar to how budgets are defined for utility energy efficiency programs pursuant to the Illinois Public Utilities Act (“PUA”). For example, the PUA limits natural gas utility energy efficiency spending to 2% of total revenues. The Commission should determine if budgets for energy efficiency programs serving thermal network customers should come out of these existing budgets, or if new funding should be allocated to specialty energy efficiency services serving the thermal networks.

- 2) **Whether thermal energy network projects further climate justice, emissions reductions, benefits to utility customers and society at large – including but not limited to, public health benefits in areas with disproportionate environmental burdens, job retention and creation, reliability, and increased affordability of renewable thermal energy options.**

Thermal energy networks are among technologies that could positively impact disadvantaged communities through increasing access to clean energy and clean energy jobs. Geothermal heat pumps can reduce energy consumption up to 44% when compared to air-sourced heat pumps and up to 72% when compared to electric resistance heating with standard air conditioning equipment. The higher energy efficiency of geothermal heat pumps and the inherent reliability of underground geothermal energy can reduce emissions and decrease the burden on the existing energy grid (electric and gas), which will benefit all of society. Affordability (reducing energy poverty) is a pillar of energy equity, and better understanding cost-effectiveness and the scale of adoption required to make system maintenance and operations affordable is important in order to understand if and how the projects further energy justice.

- 3) **Approaches to thermal energy network projects that advance financial and technical approaches to equitable and affordable building electrification, including access to thermal energy network benefits by low- and moderate-income households.**

In general, incorporating geothermal infrastructure as part of the planning and initiation of new construction will be more cost-effective than retrofitting premises due to changes needed to modify the existing premises and infrastructure. The capital cost associated with the installation of a thermal energy network is higher than the cost to connect end-use applications such as the air-sourced heat pumps to the electric grid, putting upward pressure on the electric grid's costs. However, thermal energy networks enable end-use applications such as geothermal heat pumps, which are more energy efficient than the conventional systems for heating and cooling of buildings. This can lower the lifecycle costs of the thermal energy systems making it affordable for low- and moderate-income households. Therefore, it is critical to perform lifecycle cost analyses to determine the equitability and affordability of the thermal energy systems for customers.

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Respectfully submitted,

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