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November 13, 2020

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Illinois Commerce Commission
527 E. Capitol Ave.
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Re: Rocky Mountain Institute's comments in response to 20-NOI-03: Notice of Inquiry Regarding Rate Design and Affordability with respect to Transportation Electrification and Other Beneficial Electrification

Executive Summary / Recommendations

In order to meet Illinois's climate commitment to the Paris Agreement, it is necessary to electrify buildings and transportation. Electrification can also provide additional benefits for the electric grid, for customers, and for workforce development, and should be a strong priority in any decarbonization plan.

In the comments below, we make the case that building electrification is a crucial decarbonization strategy and should be considered when determining new rate design and additional incentives for beneficial electrification. We will provide recommendations for good rate making to support both building and vehicle electrification.

Ensuring successful building decarbonization will require a range of policies and programs from many stakeholders. Rocky Mountain Institute's recent report, Regulatory Solutions for Building Decarbonization: Tools for Commissions and Other Government Agencies, outlines ten key strategies commissions should consider as states decarbonize. Updating electric rate design is one important lever to support electrification.

Rates should be easily understandable, with programs and technologies that allow all customers to take advantage of time-varying rates. Well-designed rates can support both beneficial electrification of buildings and transportation, providing benefits for the environment, health, and customers.

In addition to rate design, the Illinois Commission should consider how building electrification can be a key decarbonization strategy and support other positive outcomes, including working with the Board of Health and additional air quality experts to establish and enforce indoor air quality standard. Poor air quality increases the risk of COVID, making this a pressing issue.

What types of beneficial electrification other than adoption of EV's should the Commission be examining?

The Commission should examine and support building electrification alongside transportation electrification; decarbonization requires moving away from direct combustion of fossil fuels across all sectors. As we will illustrate in our comments, building electrification also offers significant 1. environmental, 2. health, and 3. cost benefits to ratepayers. By addressing the regulatory barriers to building electrification, including rate design and program creation, the Commission can further incentivize adoption of clean electric building equipment.

1. Environment: Governor Pritzker joined the United States Climate Alliance and committed to the Paris Agreement in January 2019, committing to 26-28% economy-wide reductions from 2005 levels by 2025. Shifts in federal policy would also require additional climate action—President-Elect Biden's climate plan calls for building decarbonization through deep retrofits and appliance electrification specifically. By mobilizing quickly on electrification today, Illinois can ensure they are prepared for future federal action that would require deep decarbonization.

In 2017, Illinois buildings directly emitted 35.4 million metrics tons of CO_2, and 18% of energy-related emissions came from the direct combustion of fossil fuels in buildings. Fortunately, there are carbon-free alternatives to burning fossil fuels in buildings for heating. Modern electric heat pumps can provide comfortable heating and cooling to Illinois homes and businesses without producing on-site CO2 emissions. These technologies are powered by electricity and transfer heat into a building from the outside air (air-source heat pumps) or from underground (ground-source heat pumps). Technological advances have enabled air-source heat pumps to operate efficiently in temperatures as low as -15F, and they are able to use conventional electric heating at even colder temperatures. The dry bulb design condition for Chicago is -15F according to ASHRAE 2017,[1] meaning that buildings built to this standard should rarely expect to shift into resistance heating mode. Operating efficiencies at 5F are far higher; NEEP's Cold Climate ASHP list includes thousands of devices that operate at a COP of 1.75 at 5F.[2] Cold climate heat pumps operate successfully in Chicago's climate and should not be reason to delay a transition to heat pumps. Ground-source heat pumps' performance is even less sensitive to cold temperatures, as they draw heat from underground and can operate efficiently regardless of outside temperature. Ground-source heat pumps can also be configured as district heat solutions, with multiple buildings sharing underground infrastructure to transfer heat from the earth. Heat pumps, both ground-source and air-source also provide air conditioning, increasing access to highly efficient cooling.

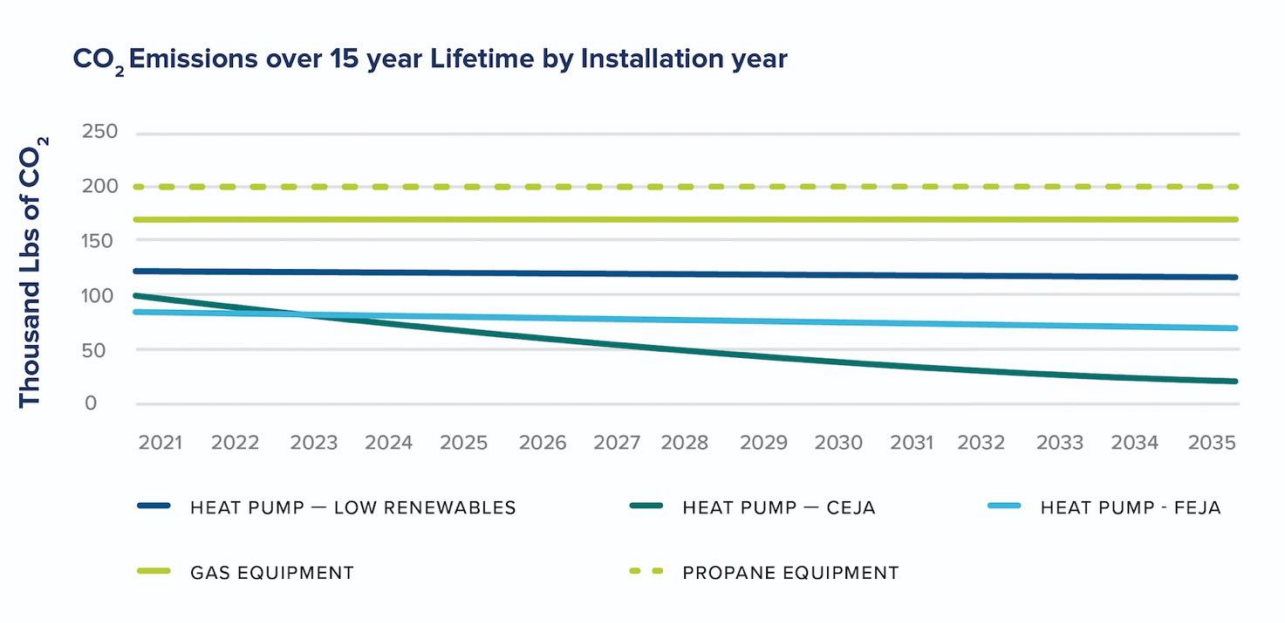
New analysis from RMI and Elevate Energy shows that electrification helps Illinois meet its climate goals, even with a range of assumptions about Illinois's grid.[3] Even in a "low renewables" scenario for future electricity generation, heating buildings with heat pumps rather than gas furnaces leads to a cumulative 36% reduction in carbon dioxide emissions by 2050 compared to the current model of heating Illinois homes with gas and propane. If Illinois's grid aligns with the Future Energy Jobs Act (FEJA), heat pumps reduce emissions by 66% over the same time. A more aggressive renewables scenario, with 100%

[1] http://ashrae-meteo.info/v2.0/
[2] https://ashp.neep.org/#!/product_list/
[3] https://rmi.org/insight/building-electrification-helps-illinois/

renewable grid in 2050, as has been proposed, would reduce emissions by 86% compared with a gas or propane alternative.

Even with the current grid mix, installing a heat pump today will save emissions over the lifetime of the equipment. Given a heat pump's 15-year lifetime and the rate of grid changes, installing a heat pump today is an emissions-saving intervention. As seen in Exhibit 1, electrifying a home in any year after 2020 has significant emissions savings over the heat pump's lifetime.

Exhibit 1:



Source: RMI & Elevate Energy analysis

There are other decarbonization pathways for buildings focused on biomethane, synthetic methane, and hydrogen distributed to buildings – which may be referred to as "renewable natural gas". However, studies by the American Gas Foundation, Sierra Club, and the Natural Resource Defense Council, all show that "renewable natural gas" is unlikely to address building emissions at scale, given the limited supply of biomethane and high costs of synthetic gases. [4] Even in the most optimistic scenario outlined by the American Gas Foundation, "renewable natural gas" can meet at most meet 12% of total U.S. gas demand by 2040.

[4] https://www.gasfoundation.org/wp-content/uploads/2019/12/AGF-2019-RNG-Study-Full-Report-FINAL-12-18-19.pdf
https://www.sierraclub.org/maine/blog/2020/07/sierra-club-report-myth-renewable-natural-gas
https://www.nrdc.org/experts/merrian-borgeson/report-renewable-gas-pipe-dream-or-climate-solution

Ensuring that electric rates are not a barrier to the adoption of electric heat pumps will help to avoid further investment of gas or propane infrastructure, which lock in emissions for the lifetime of the device. In contrast, electrifying buildings can set Illinois on a path to zero-emissions buildings, as the electric grid becomes increasingly clean.

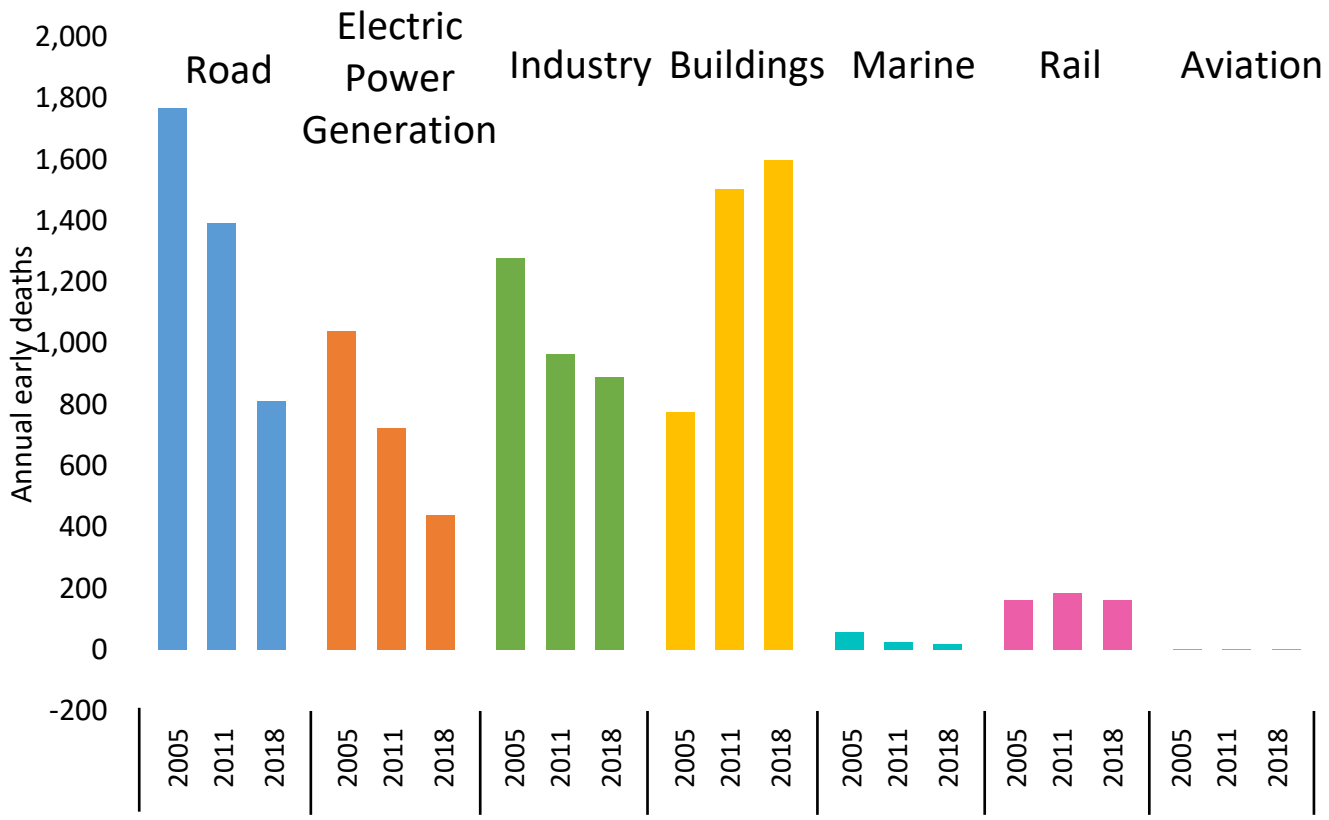
2. Health: Building electrification can also provide important health benefits for indoor and outdoor air quality (IAQ and OAQ). We spent over 90% of our time indoors, increasingly so during the COVID-19 pandemic, making indoor air quality an important component of health. As part of a broader transition away from natural gas and other fossil fuels in buildings, heat pumps can improve the health and safety of homes across Illinois. Natural gas combustion produces nitrogen dioxide (NO2) and other pollutants which are harmful to human health. Indoor cooking with gas is particularly problematic as these pollutants are often not vented outdoors and contribute to elevated pollution levels indoors which can exceed the safe standards set by the EPA for outdoor exposure[5].

According to an MIT study, published in Nature, combustion emissions from buildings (gas, wood, oil, etc.) were responsible for nearly 1,600 early deaths in the state of Illinois in 2018. As seen in Exhibit 2, buildings were the leading source of early death from air pollution in the state, greater than transport, industry, and electricity generation.[6]

Exhibit 2:

[5] https://rmi.org/insight/gas-stoves-pollution-health/

[6] Irene C. Dedoussi, et al., Premature mortality related to United States cross-state air pollution, 578 NATURE 264 (2020), available at https://doi.org/10.1038/s41586-020-1983-8



Furthermore, because heat pumps provide both heating and cooling, and because modern cold climate heat pumps generally offer more efficient cooling than a standard air conditioner, increased adoption of heat pumps can also expand access to low-cost air conditioning and improve comfort in hot weather. This will become increasingly necessary as climate change increases the frequency and intensity of extreme heat events.

The Illinois Department of Public Health is legally authorized and directed to define IAQ standards and develop guidelines. The Commission can work together with the Department of Public Health to create a comprehensive strategy to avoid the negative impacts caused by burning gas. Indoor air quality issues disproportionately affect Black communities—which are also the communities hardest hit by the COVID-19 pandemic, making improved air quality an important priority to reduce risk and inequity. The Commission should consider how rate design can support improved air quality through building electrification.

3. Cost benefits: Building electrification can also save customers money.

Today, heat pumps can offer cost savings in several situations. The customers and buildings which represent the greatest opportunity for cost savings include those in new construction along with existing buildings currently using electric resistance or propane heating and when further gas investment can be avoided.

- **New construction:** In new construction, all-electric homes with heat pumps are usually lower costs than homes with gas or other fossil fuels. This is mostly based on lower upfront cost of installing a heat pump (as opposed to both a gas furnace and air conditioner) and avoiding of running gas to and through the building. RMI's 2018 analysis showed that building all-electric new construction in Chicago is cheaper than installing both gas and AC equipment, and also avoids the cost (and potential stranded asset risk) of new gas service lines.[7] More recent analysis for Minneapolis and Columbus, Midwestern cities with similar climates to Illinois, confirm that all-electric new construction is more cost effective than gas, in both lifetime cost and upfront cost.[8]
- **Electric resistance**: The efficiency of heat pumps always reduces energy bills compared to older electric resistance heating technologies (e.g., electric baseboard heat). As a result, even when there is a high up-front cost to installing a heat pumps, heat pumps tend to have a good payback for these electric resistance customers. Programs aimed at upgrading existing electric heating customers to modern heat pumps can be highly valuable to heating sector decarbonization even though they do not displace direct fossil fuel use, as they reduce electricity demands and grid impacts and help develop local markets and supply chains for cold climate heat pumps.
- **Propane and heating oil:** Heat pumps are generally cost effective as a retrofit for customers using propane or heating oil. Despite the significant up-front cost, energy savings due to the high cost of propane and heating oil make investment in heat pumps a good payback for these customers.
- **Avoided gas infrastructure:** The most attractive opportunities for cost-effective gas-to-heat pump switching include those in which gas infrastructure investment can be avoided. Such scenarios include new developments in which the cost of extending the gas delivery system can be avoided; proposed gas capacity expansion projects, in which new gas storage facilities or pipelines are proposed to meet rising demand; or even gas main replacement projects, in which replacement of old infrastructure could be avoided by serving affected customers with heat pump solutions instead. In all these cases, heat pumps serve as "non-pipes alternatives" and may be lower cost investments than traditional gas infrastructure. This opportunity is especially relevant in Chicago where People's Gas is currently planning to spend billions on pipe replacement and improvement through the Qualified Infrastructure Program, resulting in an increasing affordability crisis for natural gas. Building electrification offers an opportunity to avoid these investments and save money. Rather than replacing pipes in a costly manner, homes can be electrified, avoiding costly capital investment and saving money for all gas ratepayers. This applies to proposed gas service extensions to communities like Pembroke Township as well, where rather than investing $8.2 million to build a new gas pipeline to this community,

[7] https://rmi.org/wp-content/uploads/2018/06/RMI_Economics_of_Electrifying_Buildings_2018.pdf
[8] https://rmi.org/insight/the-new-economics-of-electrifying-buildings

investments in weatherization, advanced heat pumps, and/or local renewable energy could provide energy cost savings to residents and businesses.

Building electrification is beneficial 1) for the environment, providing significant carbon reductions compared to fossil fuel devices; 2) for health, by avoiding the pollutants caused by combusting gas; and 3) for customers, as electrifying can save customers money in many different scenarios. Just as the state is considering how rate design should support transportation electrification, the Commission should consider how to support electrification and provide these benefits to Illinois residents.

Should electric rate designs be used to encourage the use of each such other form of beneficial electrification? Why or why not?

Yes, rate design should be used to encourage beneficial electrification. For all the reasons listed above, building electrification is a crucial component of an overall decarbonization strategy, and can provide significant additional benefits to health and customers. Rates must be thoughtfully designed to support building electrification and realize these benefits. Well-designed time-varying electric delivery and supply rates can provide savings to customers and support smart load growth and grid infrastructure. Further, smart rate design does not require a cost shift onto customers without heat pumps. Rather, well-designed rates will simply allocate costs more fairly, as well as reduce overall system costs through time-varying rates and load shifting.

Good rate design shouldn't simply encourage building electrification, but should support electrifying in a manner reduces bills and supports the grid. If rate design does not incent customers to shift load from times of high-cost electricity to times of low-cost electricity, increased building electrification could significantly increase the peak demand, requiring costly infrastructure or generation upgrades that translate to higher rates for all customers. Further details are discussed below.

Do current electric rate designs present a barrier to the adoption or use of each such other form of beneficial electrification in a manner that supports (environment, reducing grid costs, supporting reliability/resilience)? If so, how?

Environment

Current residential electric delivery service rates are based on the monthly volume of kWh sold, without accounting for the time energy is used, or the cost to the grid. This structure discourages the use of high efficiency heat pumps, which consume annually more electricity (frequently during winter nights) but use less energy during the current system daytime summer peak, when electric supply is most polluting and most expensive. The current volumetric electric delivery service rate structure therefore does not encourage the use of less polluting heat pump technology.

Modern heat pump technology, including variable speed air source heat pumps and ground source heat pumps, is much more efficient than typical air conditioning technologies, including window units. New heat pumps therefore have a much lower summer peak profile due to this increased efficiency. Heat pump water heaters can also be "super-heated" during times of low-carbon or low-cost electricity (e.g.,

during the night with abundant wind), such that the device does not need to use electricity at times when the grid's carbon intensity is highest. Flat volumetric rates for supply and delivery do not reward customers for the peak reduction that heat pumps can offer, or to use more electricity at times of low-carbon electricity. Time-of-use (TOU) rates can incent customers to use their devices optimally.

Grid costs

Flat residential electric delivery and supply rates do not send price signals that allows customers to lower cost or decrease carbon and could cause load growth to happen in less beneficial ways. While heat pumps today will reduce demand during the grid peak and add demand during low-usage times, flat volumetric rates cannot provide any benefit to the heat pump customer for this important grid service. All residential customers, regardless of whether they have an EV or live in an all-electric home, should have access to alternative TOU delivery and supply rates to ensure that heat pump and EV customer bills more accurately reflect the costs and benefits of their use of the grid.

Current residential electric delivery service rates are based on the monthly volume of kWh sold rather than on direct cost-causation of each customer, which would correlate to times of the electric distribution utility's peak demand. This delivery rate structure thus discourages the use of high-efficiency heat pumps, as discussed above, and therefore unnecessarily builds grid costs.

Residential supply and delivery time-varying rates, which may include time-of-use (TOU), critical peak pricing (CPP), or dynamic hourly pricing programs, can address this mismatch by more accurately charging customers for their costs. While many existing TOU rates only apply to supply charges, TOU rates should be applied to both energy and delivery charges, as the cost causation of both generation and distribution varies with time. Time-varying volumetric rates provide useful market signal to customers to shift load towards times of low-cost electricity.

In their heat pump analysis, the New York Start Energy Research & Development Authority (NYSERDA) examined the expected increase in electric bill for new heat pump customers, and the increased grid cost as a result of that customer's new electric load.[9] This analysis showed a significant "inverse cost shift, where the increase in bill vastly exceeded the additional grid costs, meaning that heat pumps customers disproportionately pay for infrastructure costs, effectively subsidizing customers who are not all-electric. Rates should more accurately reflect the costs and benefits that heat pumps can provide to the grid.

Reliability and Resilience

As discussed above, flat rates for supply and demand do not address peak issues, or encourage customers to reduce system peak. Reducing the peak demand through smart rate design can reduce strain on the electric grid, thereby supporting system resilience. Time varying rates can support this peak demand reduction.

[9] https://www.nyserda.ny.gov/-/media/Files/Publications/PPSER/NYSERDA/18-44-HeatPump.pdf
http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B39306BBE-C9B0-4B15-AA48-59B980BD6AC1%7D

If you are in favor of providing incentives through electric rate design, what specific electric rate designs can be used to motivate the use of each such other form of beneficial electrification?

[see below]

What specific electric rate designs can be used to motivate the use of each such other form of beneficial electrification?

Building electrification will lead to an increase in electric load, but demand flexibility and smart devices can allow some of that growth to happen in times of lower-cost energy. Smart devices can be programmed to use more electricity at times of low-cost electricity.

As Illinois moves towards its targets for decarbonized electricity, the amount of variable renewable generation will grow, increasing the need for variable load that can match this renewable generation. Time-varying rates can help address this issue by encouraging customers to shift usage towards high-renewable times. Both supply and delivery rates should be time-varying, to maximize the benefits to environment, grid, and customers—and to more accurately reflect the costs of providing electric service at different times.

Smart rate design can also offer savings to customers. RMI analysis shows that retrofitting single family homes in Oakland, CA with heat pumps on a TOU rate with a 3:1 peak-to-off-peak ratio for supply and delivery could offer 10% lifetime cost savings compared to homes on flat rates.[10]

Illinois already has time-varying electric supply rates, including ComEd's hourly pricing and time-of-day pricing.[11] Such rates can improve affordability of building electrification while reducing negative impact to the grid. Analysis from Energy Future's Group, as referenced in NRDC's comments in this inquiry, shows that hourly pricing rates offer savings to electrified customers even without smart devices or demand flexibility. Devices that shifted load towards times of low-cost electricity would provide further savings.

For example, devices programmed to work with ComEd hourly pricing can support electrification by shifting customer load to times of lower-cost electricity. Demand flexibility programs could provide further benefits to customers who enroll in load management programs, as we have seen for window AC units elsewhere.[12]

The commission can further explore these rate design opportunities for all-electric customers by looking to some examples of innovative rates for EV, including SoCal Edison and PG&E's subscription rates.

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[10] https://rmi.org/wp-content/uploads/2018/06/RMI_Economics_of_Electrifying_Buildings_2018.pdf
[11] https://hourlypricing.comed.com/live-prices/
https://www.comed.com/WaysToSave/ForYourHome/Pages/TimeofDayPricing.aspx
[12] https://www.coned.com/en/save-money/energy-saving-programs/smart-air-conditioners/faq

How do electric rate designs used to incent customers … affect the affordability of electric service for other electricity users?

Time-varying rates will be more equitable than flat volumetric rates, as they more accurately reflect the cost to provide electricity to customers by charging higher rates in peak or grid-constrained times. By charging customers more during peak times, customers have the incentive to reduce load at that time, thereby reducing system peak and additional infrastructure costs for all customers. At the same time, as discussed in the following section, TOU rates must be sure to be coupled with support and protections for LMI customers who may not have the technology or ability to shift demand.

In a summer-peaking system, the increased load from building electrification would come from new heating load in the winter. Rather than increasing system peak, new electric load would increase system utilization rate of infrastructure, which is beneficial from a cost perspective. While significant load from building electrification could eventually switch the system to a winter peak, in the near term, electrification would be beneficial from an infrastructure cost perspective.

As discussed previously, NYSERDA research shows a clear "inverse cost shift."[13] The increase in bills for new heat pump customers is vastly more than the increased cost to the utility to provide that service; customers shifting to heat pumps would be paying on average between $2,000 and $12,000 more than the increased cost to the utility. In a decoupled system, this increased revenue to the utility would result in reduced future rates for all customers—in essence, without addressing the inverse cost shift, heat pump customers are subsidizing non-electric customers.

Please identify how your recommended rate design changes may affect low to moderate income citizens.

As stakeholders develop new programs and rate design, the impacts of these programs on vulnerable communities must be carefully considered, and those perspectives need to be included in public processes. Inclusive public process may require a shift from traditional, legalistic, formal utility proceedings. Increased collaboration, stakeholder education, and a neutral facilitator can help to ensure that nontraditional voices are meaningfully included in the public process of designing rates that affect their own communities.

When designing rates, stakeholders must consider what the impact of extreme scenarios. For example, if a time-varying rate has a large peak to off-peak (POP) cost ratio, what would be the bill impacts of a very cold day where heat pumps operate at low efficiency? All customers must have access to affordable heat, and should not have to choose between heat and food. Heat pump initiatives should also consider programs to help LMI customers finance the up-front costs of heat pumps, to ensure they are not left behind in a gas transition.

At the same time, creating new rate designs appropriate for a highly-electrified future will require a willingness to test new concepts. In order to successfully pilot new rates and programs, safeguards need

[13] http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B39306BBE-C9B0-4B15-AA48-59B980BD6AC1%7D

to be in place to ensure that customers are not unduly exposed to bill risk. There are precedents for ensuring that new rates have backstops. ComEd also has a "bill protection" pilot program, guaranteeing savings to select customers to sign up for an hourly timing pilot.[14] Xcel is piloting a TOU rate, with bill protections for customers whose bills increased more than 10%. Low-income customers were protected for the full duration of the pilot.[15]

As utilities put residential delivery TOU rates into place, supplementing the existing residential supply TOU rates, they should explicitly craft more generous low-income heat pump programs (both space heating and hot water) to encourage early adoption of heat pumps in low income communities. Low-income communities must share in the benefits possible through TOU rates.

Are there examples of other mechanisms that may be used in conjunction with rate designs (e.g., pairing load management with rate design) that would result in each such other form of beneficial electrification adoption or use in a manner that would be in the public interest? If so, please explain.

Thoughtful time-varying rate design should be coupled with smart, flexible devices enrolled in demand management programs in order to maximize benefits to customer, to grid infrastructure, and to the environment.

Smart technology is already in use for existing appliances. EV load shifting is discussed further in later sections. Heat pump water heaters, in particular, can offer easy load shifting with no change in experience to the customer. In the Midwest, with abundant wind power during the night, water heaters would superheat water when demand in low and wind generation is high in the night, and then shift off in the morning. Indeed, water heaters have been used to shift load in Minnesota. Green Mountain Power in Vermont and Sonoma Clean Power in California are among the utilities who have demand flexibility programs for heat pump water heaters. While the new installation of electric resistance devices should not be encouraged, ensuring current electric resistance loads are grid-connected can provide benefits to the grid.

Shifting space conditioning loads is more challenging than water heating loads, but still offers significant possibility. Especially in aggregate, small changes in set point could together decrease system peak in times of stress.

Rate Design Impacts on Electric Vehicle Adoption and Use

Maximizing the benefits of EVs to utilities and consumers will require ways to influence charging so that it happens when grid power costs are lowest. Charging at those times will help to maximize the utilization of grid assets, particularly renewable energy generators, limit the need for distribution system upgrades, and avoid having to invest in additional peak generation capacity. Many EVs come equipped

[14] https://www.citizensutilityboard.org/blog/2019/10/17/win-for-consumers-and-energy-innovation-il-launches-dynamic-pricing-pilots/
[15] https://www.utilitydive.com/news/has-xcel-minnesota-designed-the-ideal-residential-time-of-use-rate/513235/

with charging timing features, and residential customers should have access to TOU rates that apply to both supply and delivery charges that allow them to manage their charging in beneficial ways.

Regulators and utilities should offer dedicated tariffs for EV charging stations and allow the meter inside the charging station to be used for measuring usage, rather than requiring a separate utility meter to be installed. Separating the metering of EV charging from the rest of the house is important because it will encourage customers to adopt or program a charging schedule in accordance with the price signals of the dedicated TOU tariff for EVs, without worrying about the impact that charging the EV will have on the bills for the rest of the house, or vice-versa.

Good tariff design for low-power Level 2 charging stations, where cars are plugged into them for hours at a time, should employ a TOU rate design for both supply and delivery reflecting accurate power costs at each hour of the day, and offer compensation for charging network operators who can respond to demand response events and other grid conditions.

Commercial Charging Station Providers

For public direct current fast chargers (DCFC) stations, time varying rates are less appropriate and useful, as charging companies are not willing to pass along the time-varying price signal to customers. Load shifting for DCFC chargers is also less likely; because these chargers are generally used "on the road", customers inherently need immediate, quick charging.

Flat volumetric rates are therefore more appropriate for public DCFC stations, without demand charges. In most cases, demand charges should be unnecessary. While charging companies revenues scale with the number of users; demand charges are especially challenging to new charging infrastructure that has not yet reached a sustainable utilization rate. Where demand charges are deemed to be necessary, it is essential that they be designed to recover only location-specific costs of connection to the grid, not upstream costs of distribution circuits, transmission, or generation. Analysis on the impacts of different rate designs for DCFC, including an innovative rate designed by RMI, can be found here, in analysis conducted for the Colorado Energy Office: https://rmi.org/insight/dcfc-rate-design-study/

Recommendations

- The Commission should consider the full suite of benefits that building and transportation electrification can provide for the environment, for health, for customers, and for the grid. Rate designs should seek to reflect the true costs and benefits of newly electrified loads.
- Time-varying rates, including TOU, critical peak pricing, and dynamic pricing, should be widely available and coupled with the programs and technologies to allow customers to easily shift load.
- In addition to rate design, many critical issues need to be addressed now surrounding the role of gas and implications of electrification on the future of the system. Other states have opened proceedings to examine the future of distributed natural gas, including California, New York,

Massachusetts, and Colorado; Illinois should follow suit and open a proceeding to investigate the long-term role of natural gas in Illinois's energy future.

- RMI's recent report, Regulatory Solutions for Building Decarbonization, appended to these comments, outlines the wide range of questions and considerations that commissions need to address in order to successfully decarbonize.

Rocky Mountain Institute thanks the Commission for the opportunity to submit comments on rate design and affordability for electrification. Should the Commission have any questions about our comments, please reach out to Mike Henchen at mhenchen@rmi.org.

Attachments

Regulatory Solutions for Decarbonizing Buildings, Rocky Mountain Institute report, 2020.