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RE: Next Grid Illinois, Utility of the Future Study Comments

The comments below are intended to specifically address the report's premise that all electrification is beneficial. Like was demonstrated for other areas, these comments are intended to ensure there is a comprehensive understanding of the impact of electrification. In many cases, electrification may not bring about the desired impact in the most efficient manner, environmentally reasonable, or cost equitable.

- Page 22, following "well-being." By inserting "However, electrification should not be adopted as a policy in Illinois, as it would be inconsistent with our historically pro-market stance. At the very minimum, if electrification policies are considered, a careful examination should take place to ensure that the outcomes are the most energy efficient, environmentally sound, and cost equitable, in addition to ensuring that low income and other customers are not negatively impacted environmentally or in their pocket book."
- Page 176, section on Beneficial Electrification. Insert language that acknowledges that additional study and examination need to occur to determine that electrification is beneficial, will have the intended impact, and that benefits outweigh the costs for all customers impacted.
    a. "Implications of Policy Driven Residential Electrification," ICF for American Gas Association (AGA), July 2018, should be added as a reference and resource. Specifically, and contrary to some of the statements made in the Beneficial Electrification section the AGA report notes the following:
        i. Policy-driven electrification would increase the average residential household energy-related costs (amortized appliance and electric system upgrade costs and utility bill payments) of affected households by between $750 and $910 per year, or about 38 percent to 46 percent.
        ii. Widespread policy-driven residential electrification will lead to increases in peak electric demand, and could shift the U.S. electric grid from summer peaking to winter peaking in every region of the country, resulting in the need for new investments in the electric grid including generation capacity, transmission capacity, and distribution capacity

DER valuation

- Page 148, end of first full paragraph, following "equitable" insert "In determining the appropriate valuation of DER, one may consider utilizing the value of attributes method that is currently being discussed for generating assets within various markets. A study by the Brattle Group asserts that specific attributes are fundamental to the grid." Diversity of Reliability Attributes: A Key Component of the Modern Grid, The Brattle Group, May 17, 2017. https://www.api.org/~/media/Files/Policy/Natural-Gas-Solutions/20170517-API-Diversity-of-Attributes.pdf

Underscore that a specific fuel mix has not been pre-decided and that the market is still the choice of Illinois: Overall – the report continues to reflect the sentiment of only a few stakeholders that the goal of Illinois is 100% zero emissions for electricity. Toward that end, it is recommended the following language be included.

- Reflect throughout or insert on page 8: "Although FEJA increased renewable energy goals, provided subsidies to keep two nuclear plants afloat, and increased programs for energy efficiency and demand response, it did not mandate the closure of other generation sources. Nor did it mandate all electricity be produced from zero emission resources. Despite out of market payments through zero emission credits, Illinois has historically maintained a steadfast commitment to competition. Following electric utility restructuring, competition has served Illinois extremely well in determining the generation mix and shifting investment risk away from Illinois ratepayers. Any move away from this model will likely require additional legislation. Clean energy encompasses a variety of resources and technologies, of which none should be dismissed. For example, steady, reliable, natural gas DER and baseload generation is a cornerstone for continued economic success within Illinois for some of its major industries. Nothing in this report should assume that there is a specific best resource mix and it should not dismiss the use of a multitude of resources to not only promote reliability, but also reduced emissions and cost savings to customers."

Additional concerns:

- **Remove or revise (page 170);** "Replacement of fossil-fired generation in this way can bring about reductions in coal mining activities, coal generation and natural gas production and consumption for electricity generation". At the very least remove "natural gas production and consumption for electricity generation." **REASON:** As demonstrated time and time again, natural gas use for generation has aided in the rapid reduction of emissions as well as aids in maintaining needed reliability. Furthermore, natural gas for DER has demonstrated that it will be a needed resource for microgrid applications and currently is utilized in a variety of industry applications today. As demonstrated time and time again, natural gas use for generation has

resulted in the United States being the leader in world-wide carbon emission reduction. Additionally, natural gas has repeatedly proven that it is the most reliable fuel source, making it a critical component for maintaining reliability.

- **Remove or revise (page 185):** "Such care is needed in the continuing integration of deeper penetrations of DERs in their various technology forms, the movement toward electrification supplied by low carbon resources such as wind, solar and nuclear energy and the development of sustainable pathways to decarbonization." **REASON:** As a deregulated state, the resource mix is in Illinois is determined by the marketplace, not through a centralized planning process (e.g., integrated resource plan). The resource mix will be determined by the lowest cost set of resources needed to meet reliability needs, irrespective of resource fuel or technology type. Additionally, when talking about "low carbon" resources, there is no reason to exclude natural gas as the shift from coal to natural gas has driven massive emissions reductions in the power sector. The report makes no effort to define "low carbon" resources.

- **Remove or revise (page 170):** "As a result, there are reductions in the peak and total demand for electricity in the bulk grid and corresponding reductions in emissions and pollution under conditions that the renewable energy generated by DERs displace polluting energy sources and do not simply offset other sources of low- or no-carbon energy – both renewables and nuclear – in the grid." **REASON:** Again, it is implied that natural gas is not a "low carbon" source of energy. It is not clear what the definition of "low carbon" is – rather, it feels like an attempt to only classify nuclear and renewable energy resources as low/no carbon. Relative to other fuel sources (e.g., coal) natural gas is a low carbon fuel source and should be considered as such in the report. As noted above, the switch from coal to natural gas has helped produce massive emissions reductions across the electricity sector.

- **Remove or revise (page 8):** "Nuclear plants are under competitive pressure from low natural gas prices and new variable output generation from solar and wind facilities. The enactment of FEJA represents the strong support of the continued operation of Illinois nuclear plants by Illinois legislators in light of the reliable baseload power they provide, thousands of long-term jobs and a very large source of carbon-free electricity." **REASON:** Natural gas is a source of reliable baseload power and environmentally cleaner than other sources. This statement gives the impression that the legislature's action was choosing one specific resource over all others. In fact, FEJA was not primarily focused on reliability. Rather, it was focused on a shift to clean energy, out of market payments to nuclear, and creating new jobs.

- **Remove from page 209:** Moreover, Illinois with the largest nuclear fleet in the nation generates considerable portion of carbon-free electricity, in addition to that generated by green RERs. **REASON:** This doesn't make sense given the proceeding discussion, which is all about grid-mod. This is likely a carryover from some of the various editing. Remove as it seems unnecessary and out of place.

Cold weather and pipelines

- Page 175 continuing paragraph at the top of the page makes mention of cold weather causing failing pipelines. As an educational reference for the audience, this paragraph should include a reference to the Natural Gas Council examination on the system in extreme weather events. Weather Resilience in the Natural Gas Industry, August 2018, RBN Energy https://drive.google.com/file/d/1gdyLshGFbAOLERXpf4Ss-IemFTfNmUV5/view

Other comments below are just acknowledging general fact and add clarity.

- Page 41 and page 158, on discussion of EV's ability to discharge back to the grid or participate in ancillary services market. Acknowledge that batteries as they are today are not designed to discharge back to the grid or participate in the ancillary services market. Add " However, we should carefully consider that companies, like GM, have publicly stated that accepting that EVs can be an extra source to the grid does not recognize current battery limitations as well as customer warranties that may be nullified if used in that manner."
- Page 129 – It is a little misleading to simply say "In some locations, grid-scale battery storage is already competing with natural gas plants to serve peak loads under certain conditions." On cost alone, this is not true. At the very least, the report should indicate this is true only where policy preference makes it the case (i.e., the ability for battery storage to directly compete w/ nat gas is to meet peak load purely "policy-driven" today). "Under certain conditions" is too vague and the referenced report is difficult to easily interpret.

Respectfully Submitted,

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