INDUSTRIAL GAS USERS ASSOCIATION (Hopkins)

Answer to Undertaking from Ontario Energy Board (Board)

Undertaking:

J5.2

Dr. Hopkins to provide supplementary responses, if any, to the Board's inquiry about lessons learned regarding energy transition in other jurisdictions.

Response:

Process

Substantively engage stakeholders

Processes that either do not involve stakeholders or do not take their input seriously are brittle. I detailed suggestions regarding stakeholder engagement and buy-in in interrogatory response N.M8.PP-1. Even the Massachusetts process, which had very active stakeholder engagement (including multiple rounds of meetings to understand and provide input to the consultants' modeling process), was in the end frustrating to stakeholders because the consultant scenarios and assumptions did not fully integrate their suggestions. This led to a lack of trust among stakeholders in the conclusions drawn based on the consultants' analysis, which in turn has led to efforts to circumvent or direct the regulatory process through legislative action.

Avoid competing models

If the regulator, policymakers, utilities, and stakeholders can all buy into and understand a single modeling process, this can avoid the prospect of competing models that happen to support the pre-existing perspectives that different entities brought to the process. Steps toward this end include integrating stakeholders into the modeling and scenario development process (as discussed above) and regulatory leadership for modeling processes (as I detailed in N.M8.PP-1).

Analysis

Incorporate customer perspectives

One area where analyses across multiple jurisdictions have fallen short is in the incorporation of customer perspectives. Specifically, models tend not to take account of customer behavior when presented with numerous alternatives for the systems in their buildings. For example, analyses may assume that building owners will choose a more expensive technology without a plausible model for what incentive payments or other inducements might cause them to make that choice. Or analysis may assume that customers would be willing to maintain existing equipment and pay ongoing costs for the ability to use that equipment, even when much more cost-effective options are available to them. Understanding and incorporating customer impacts and perspectives is also an essential step to account and adjust for the equity and justice implications of different approaches to energy transition.

While there are frictions in customer adoption of new technologies, and customers are not fully rational economic actors, pathway and regulatory analyses that do not at least address the implications of customer choice (and make clear what assumptions they use to support the reasonableness of a given scenario) are suspect. While I have not yet seen customer surveys incorporated into modeling structures, I think that carefully designed and unbiased surveys could be an important tool to partially address this common shortcoming.

Integrate regulatory and pathway analyses

Most jurisdictions begin with pathway analysis: how much of what technology, deployed by when, results in a given outcome in terms of energy consumption or emissions. Unfortunately, many energy transition processes have not taken the next step to understand the interaction between those high-level results and the regulatory analysis of the infrastructure, depreciation, business models, rates, risk allocation, and other regulatory processes and structures for the electric and gas utilities that will serve that transforming system. This regulatory analysis is necessary for at least two reasons. First, it is needed to better integrate the customer perspective. Because customers pay utility bills resulting from the regulatory process, understanding what those bills will look like and what options customers have depends on understanding what the regulatory analysis shows—and this should inform assumptions about the reasonableness of the pathways. Second, regulatory analysis is needed to inform regulators and utilities what impact the pathways will have on the utilities' capital and operational plans, what risks the utility and ratepayers would face, and how those risks might be mitigated.

Integrate electric and gas analyses

While the discussion in this docket has rightly focused on energy transition and the gas utility, both pathway and regulatory analysis should be undertaken for both electric and gas utilities in an integrated manner. To the extent that electrification is a pathway to decarbonization, resulting in increased electric sales and changes in the timing and amount peak demand, this links the two systems together. In its Natural Gas Fact Finding process, the Oregon Public Utility Commission identified the need for integrated electric and gas system planning as a key takeaway (and then hired consultants to recommend changes to the electric and gas planning processes to facilitate joint decision-making). This integration also ties back to taking customer choices into account. This is because competition between electric, gas, and hybrid options will be informed by the bills and rates that customers would face under each choice—which depend on the investments, sales, and regulatory structures for each utility.

Policy

Seek policy clarity

While market forces will drive some amount of change in building systems, and thus impact emissions, there are system-level choices required that go beyond and shape customer choice. These choices need to be made separately from the market. Here, collective decision-making through the democratic process is necessary because of the implications for shared infrastructure. Specifically, customer choice about how much gas to use and whether to maintain connection to the gas system to use it impacts all users of the gas system. Customers may choose to use gas if it can be delivered at one price, but not if they have to pay a higher price to maintain the system

because their neighbors have made other choices. Decisions about the funding, utilization, and maintenance of the shared gas system asset, therefore, are best made through mechanisms other than individual decisions.

Some U.S. states have made choices about the future of the gas assets, although even in those states it remains an unsettled and contentious issue (primarily between the gas utility and other parties). California has begun pilots to study strategic gas system decommissioning, in partnership with the dual-fuel utility Pacific Gas & Electric. Washington, DC, has explicitly adopted electrification as its preferred pathway to decarbonization, but its gas utility has not yet changed course to reflect this policy choice. Meanwhile, Massachusetts is pursuing a phased approach, seeking to deploy hybrid heat pump systems to capture their immediate emission reductions, and then envisioning a transition to more complete electrification in a later phase. There, further policy choices loom regarding the best way to address leak-prone cast-iron pipe replacement given this pathway choice.

Recognize that time constraints drive the need to act in the face of uncertainty

While specific policy clarity regarding the gas system is rare, as of now, that does not change the fact that federal, state, and provincial net zero targets are less than two equipment replacement cycles away for space heating, and close to that for water heating. This means that any change in equipment to decarbonize—whether it is a change to electric, hybrid, or hydrogen-ready—needs to be deployed at rapidly increasing scale in the immediate term. One implication of this is that long-lived end-use technology options that depend on scale and infrastructure to meet decarbonization objectives and are not ready for deployment today likely need to be set aside. This is a key part of why I believe that hydrogen will not be widely deployed for building uses (as detailed in N.M8.ED-7). A second implication of this limited timeframe is that both regulator and utility need to be taking actions to rapidly scale promising technologies and understand how to adapt business models and regulatory practices to account for their deployment. Because it takes time to turn over the stock of building equipment, even rapid market share growth for a given technology takes a full stock turnover lifetime to have comparable impact on the installed stock, and therefore on sales of different fuels. This gives some time for business model and regulatory process development, although as the results in N.M8.ED-5 show, deferring some changes for even a few years can have substantial impacts to narrow the range of possible future actions that avoid or mitigate risks. I elaborated on the need to act, learn, and iterate in a 2021 white paper for the Colorado Energy Office entitled *A Framework for Long-Term Gas Utility Planning in Colorado*.[1]

[1] Available at https://www.synapse-energy.com/sites/default/files/Long-Term_Gas_Planning_in_Colorado_21-086.pdf.