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The electrification of the economy: Ontario's 2017 Long-Term Energy Plan

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Authors: Richard Wong, Elliot A. Smith, Jacob A. Sadikman, Richard J. King, Rocco Sebastiano, Vince Mazza

Overview

On October 26, 2017, the Ontario government issued its latest Long-Term Energy Plan (LTEP) entitled *Delivering Fairness and Choice* pursuant to the *Energy Statute Law Amendment Act, 2016*, replacing earlier plans issued in 2013 and 2010. The LTEP, which includes forecasts as far as 2035, sets out the government's goals and objectives relating to the electricity sector based on the Independent Electricity System Operator's (IESO) Ontario Planning Outlook and feedback obtained through extensive stakeholder sessions, public open houses, consultations with nearly 100 Indigenous communities and organizations, more than 1,500 formal submissions, 200 mailings, and more than 2,800 online comments and submissions.

The LTEP mostly reiterates and clarifies existing government initiatives, including notably the Fair Hydro Plan and the Climate Change Action Plan, while also creating various opportunities for energy industry participants in a decarbonized economy, including through technological innovations. The plan is divided into eight chapters relating to energy accessibility, flexible energy systems, innovation, driving consumer value, conservation, climate change, First Nations and Métis leadership, and regional energy planning.

Four days after the release of the LTEP, the CEO of the IESO, Peter Gregg, announced a restructuring to refocus the organization through the following three business units: (1) Planning, Acquisition and Operations (which includes the Market Renewal Program); (2) Policy, Engagement and Innovation; and (3) Corporate Resources. These structural changes are intended to reflect a consistent, enterprise-wide approach to fulfilling its mandates, including substantial changes to the IESO-administered wholesale electricity market (referred to as "market renewal").

Rates

With a provincial election coming next June, the LTEP confirms that electricity rates are expected to remain below the levels projected in Ontario's 2010 and 2013 LTEPs. It estimates that, on average, consumer and industrial electricity rates will increase in line with inflation over the next four years, and then increase roughly 5% annually from 2021 through to 2027. These rates are largely attributable to Ontario's Fair Hydro Plan which, as of July 1, 2017, refinances a portion of the Global Adjustment and provides rebates, reducing electricity bills by 25% on average for residential consumers, small businesses and farms. In our Osler Update from March 6, 2017, we explored how the Fair Hydro Plan expanded opportunities for behind-the-meter generation. The LTEP reiterates the government's commitment to

lowering the monthly peak demand threshold for participating in the Industrial Conservation Initiative, which rewards industrial users for lowering their electricity consumption during peak hours.

Supply and demand

The LTEP forecasts adequate electricity supply in the near-term but predicts a shortfall beginning in the early-to-mid 2020s. Demand is expected to increase in tandem with the electrification of the economy, driven largely by the rise of electric vehicles and transit systems.

The LTEP indicates a need for a new transmission corridor in the northwest Greater Toronto Area, given the size of the forecasted load growth. It does not discuss the future of imports, but rather directs the IESO to begin planning for an integrated province-wide bulk power system. It also reiterates the province's Open for Business strategy, which invites consultation from the mining sector and other large industrials that operate in remote locations to discuss opportunities to improve grid connection.

As to the supply mix, Ontario currently relies on nuclear energy (53.5%), water (21.3%), conservation (8.6%) and natural gas (7.5%), with wind, solar, biomass and other energy sources comprising the remainder. This means that less than 10% of the province's electricity was produced using a directly emitting source. This is not surprising as cap and trade restrictions on fossil fuels, the province's mandated shutdown of coal-fired generation and the rise of renewable energy largely through wind and solar projects have generally reduced fossil fuel consumption since 2005 and demand is projected to continue falling. Further, on July 1, 2018, combined heat and power projects using fossil fuels will cease to be eligible for incentive mechanisms under the province's Conservation First Framework and the Industrial Accelerator Program. Meanwhile, the LTEP assumes that renewable energy generated by wind turbines and photovoltaic panels will continue to increase as technological advancements drive capital costs down.

With respect to nuclear energy, the Ontario government has pledged to refurbish 10 of its 18 nuclear generation facilities by 2033, representing 9,800 megawatts of capacity. The Bruce and Darlington refurbishments are underway, and the LTEP explains that the outages resulting from the refurbishments will likely cause supply pressure and drive demand for other more immediately available electricity generating sources like natural gas generation.

Overall, the current supply mix represents a substantial change from that in the 2010 and 2013 LTEPs, owing largely to the elimination of coal-fired facilities and the rise of their replacements.

Competitiveness, innovation and technology

The LTEP specifically contemplates Market Renewal, which is aimed at transforming Ontario's wholesale electricity market by moving away from long-term electricity contracts and towards more competitive mechanisms – for example, procuring capacity needs through incremental capacity auctions. The move towards capacity auctions aligns with the Climate Change Action Plan, which foresees that competitive bids from renewable and other alternative energies will facilitate the move away from carbonized fuels. Under such auctions, generators, demand response providers, importers and emerging new technologies alike are intended to be eligible to participate. This is expected to result in cost savings of $5 billion between 2021 and 2030. The 2017 LTEP includes other steps to increase competitiveness, like funding international demonstration projects to attract foreign investment, and developing

more competitive procurement processes for building transmission lines, among others.

As for innovation and technology, the 2017 LTEP proposes to expand investment in energy storage, smart meters and grids, transactive energy, blockchain integration and more. It also calls for greater consideration of new energy categories like renewable natural gas and power-to-gas processes. As a result of these innovations and technologies, the LTEP expects consumers to become more dependent on distributed energy resources and less dependent on local distribution companies. The LTEP also heavily weighs the electrification of transportation, planning for 2.4 million electric vehicles by 2035 and the electrification of the GO rail system and other light rail transit in Hamilton, Mississauga, Kitchen, Toronto and Ottawa.

A focus on consumers

The LTEP emphasizes consumer education, protection and choice in the energy sector. On the consumer education front, the LTEP proposes to redesign electricity bills to make them easier to read and understand, and expands the Green Button Initiative, which gives consumers the ability to access and manage their energy and water data for conservation and management purposes. It also provides for enhanced metering, incentives for adopting smart meter/grid technologies and demand response programs that reward users for reducing their electricity usage when needed. On the consumer protection front, the LTEP gives the Ontario Energy Board (OEB) greater authority over “sub-metering” companies, which are responsible for more than 326,000 condominium and apartment units in more than 2,500 buildings, aiming this new power at ensuring fair and reasonable energy costs on multi-residential properties. The LTEP also directs the OEB to review and improve the quality assurance standards that utilities have when dealing with customers. On the consumer choice front, the LTEP calls for pilot project alternatives to the current “time-of-use” pricing. It also proposes to allow third-party providers to be able to own and operate net-metered generation systems.

The building sector

The LTEP does not itself provide for any new building of infrastructure. It does, however, encourage the construction of near/net zero energy and carbon emission homes and buildings by expanding the Green Ontario Fund, promoting an emission-free building sector. It also proposes to expand net metering options in order to give building owners greater access to renewable energy generation and storage.

First Nation and Métis involvement

The LTEP draws particular attention to the unprecedented levels of First Nation and Métis involvement in the energy sector, including the development of several major transmission lines and more than 600 wind, solar and hydroelectric generation projects across Ontario, which account for more than 2,200 megawatts of clean energy capacity. The LTEP also contemplates the potential connection of as many as 21 remote First Nation communities to Ontario’s electricity grid, and will work to engage in consultations on how to improve the IESO’s Energy Partnership Program, which connects First Nation and Métis communities with partner organizations to build out renewable energy and transmission projects.

Conclusions

While the LTEP reaffirms the government's direction towards a decarbonized and electrified economy, it is clearly planning for market renewal, engagement of future technologies and increasing competitiveness, all of which will create opportunities for those shaping this evolution. As far as the next concrete steps, the IESO and OEB have been directed by the Minister of Energy to execute the LTEP, starting with preparing and submitting implementation plans for review by January 31, 2018.