

A Rational Policy for Lowering Hydro Bills in Ontario

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Public angst over rising hydro bills in Ontario has intensified recently as the cost of new investment in generation capacity has come online. Over the last decade the government has contracted for more than 20,000 MW of generation capacity, including natural gas and refurbished nuclear plants as well as renewables, contributing to a near doubling of regulated electricity rates for residential households.

While the government is taking some heat for rising bills, there is a potential policy solution that is economically rational, equitable to consumers, and simple to implement. The essence of the approach is to smooth the costs of contracted generation capacity – which account for approximately 40% of electricity system costs – over a longer period of time than is currently planned, thereby reducing consumer bills in the short to medium term in return for slightly higher bills than otherwise in the long term. This is akin to household mortgage refinancing that lowers monthly payments by extending the term.

The economic rationale for such a smoothing policy is that the useful productive lives of contracted generation assets are in many cases longer than the durations of the contracts. For instance, wind power contracts are structured for 20 years, even though wind turbines and equipment may be expected to operate for 30 years or longer, assuming periodic maintenance and refurbishment is undertaken. Similarly, natural gas generation contracts are generally for 20 year periods, though in the U.S., many gas plants have been retired beyond the age of 40 years. Under 20 year contracts generator capital costs are amortized too quickly relative to the useful life, leading to higher annual capital charges than would be the case if the amortization period was extended to the full expected life span. Charges to consumers for contracted generation could hence in principle be reduced by stretching capital amortization periods to match the expected productive lives of the assets. In this way, the costs of generation charged on hydro bills would more closely reflect the true economic costs of the assets.

There are two broad approaches for the government to accomplish this in Ontario, recognizing that many new contracts with generators have been agreed since 2005.

First, the government could offer generators with existing contracts the opportunity to bid for new contracts that would supersede their current ones, stipulating that (a) the time horizon for a new contract must extend beyond the current one, and (b) the new purchase price for electricity for the duration of the new contract must be lower than the original contracted rate. If the generator and government reach agreement on new terms the new contract would replace the original one. Otherwise, the original contract would remain in force.

From the generator's perspective, this provides an opportunity to lengthen the time horizon of financial returns on their investment, and to increase the expected net present value of the project. From the government's perspective, generation costs would be smoothed over a longer period of time as determined by individual generators on a case-by-case basis, lowering average electricity bills in the short to medium term. Importantly, since the government need not accept all new generator contract proposals (due to the possibility that future demand for electricity will decrease), this process would create bidding competition between generators – competitive pressures could lead to much lower average power purchase rates in new long-term contracts.

An alternative approach for smoothing contracted generation costs is for the government to subsidize in the short to medium term a portion of annual contracted payments to generators operating under original contractual terms, and to reduce hydro bills by the corresponding amount. The subsidy each year would equal the difference in annual amortization currently charged (based on the contract duration) and the annual amortization amount calculated using the productive life of the asset. Interest rates on government debt (which would fund the short-term subsidy) are currently at historic lows, making this a relatively cost-effective strategy.

In both approaches, the quid pro quo is that consumers would pay more than otherwise in later years to reflect a longer amortization period, specifically during the years beyond the end of the original contracted period and up to the useful life of the generation assets.

What's the bottom line? My colleagues and I at the Ivey Energy Policy and Management Centre estimate the potential savings are not insignificant. In a preliminary modeling exercise, relying on publicly available data and a host of simplifying assumptions, we estimate that a smoothing policy could reduce contracted generation charges by up to \$1.5 billion in 2018, equivalent to 7.5% of total electricity system costs. The magnitude of this annual reduction diminishes gradually over time, and after 2030 bills are forecast to be slightly higher for several years than they would have been without smoothing.

While this financial engineering is not a long-term policy solution for ensuring an efficient and reliable generation sector, it would at least ease the transition for households and businesses in the province over the coming decade.

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