EB-2018-0287

ONTARIO POWER GENERATION

Report of the Advisory Committee on Innovation

Submissions of Ontario Power Generation

January 25, 2019

TABLE OF CONTENTS

Introduction

In these submissions Ontario Power Generation ("OPG") presents its views on the issues raised in the Report to the Chair of the Ontario Energy Board ("OEB") published by the Advisory Committee on Innovation in November 2018 (the "Report"). These submissions set out OPG's views on potential gaps in the Report, and on priority areas for the OEB's next steps. OPG has also provided specific commentary on the recommendations in the Report (the "Recommendations") under the headings provided in the Report.

As a preliminary comment, OPG strongly supports many of the principles set out or otherwise reflected in the Report. In particular, OPG endorses the Report's emphasis on open, fair competition that maximizes the value to customers. OPG believes that distributed energy resources ("DER") and other innovative technologies will create the greatest value for customers when delivered through transparent, competitive markets.

As DER and other new technologies connect to both distribution and transmission systems, electricity grids will become increasingly transactional. The effective functioning of a DER marketplace will depend on the creation of an open, fair platform on which to offer and coordinate services. When coupled with other smart grid systems, an open platform can also enable more effective pricing mechanisms.

While DER technologies are continuing to evolve, the regulatory environments that will govern them are being established today. In OPG's view, the OEB should focus on promoting the development of a market in which DER providers and their business models can mature and compete to best serve Ontarians. In contrast, an approach that reflects the monopolistic structure of the twentieth-century power grid could discourage investment, hinder innovation, and ultimately reduce the benefit for the people of Ontario.

OPG has focused these submissions on issues where it may best assist the OEB. OPG's silence on any particular recommendation implies neither support nor opposition to that recommendation.

Gaps

Effective Innovation Will Require a Comprehensive Approach

As several parties noted in the oral comments at the consultation on January 16, 2019, the Report does not account for the need for the OEB and Independent Electricity System Operator ("IESO") to adopt a common, comprehensive approach to innovative solutions.

Since new technologies will affect all levels of Ontario's electricity market, Ontario needs an approach to innovation that encompasses all levels of the province's electricity system. OPG expects that realizing the benefits of innovation – and mitigating the risks – will require an integrated approach between the IESO, OEB, and the Government of Ontario. To leverage economies of scale and to avoid significant stranding of assets, OPG proposes that electricity resource planning should continue to be led by the IESO, reflecting the increasing roles that new technologies may play across the grid.

OPG believes that the goal of both the IESO and OEB's efforts should be to optimize the assets that serve Ontario electricity customers. Without central coordination, the proliferation of DERs may strand current assets at all levels of the provincial electricity system. As the provincial electricity planner, the IESO is best placed to assess the risk of those province-wide issues.

In OPG's view, maximizing overall value to Ontario's electricity customers should drive the OEB and IESO's approach to enabling innovation. OPG also believes that allowing DER to participate in the IESO-administered market has the potential to create significant benefit for electricity customers. Accordingly, the role of DER should also be integrated with IESO's plans for future market designs, including the market renewal project.

Priorities

In OPG's submission, the OEB should prioritize the development of clear processes, rules, and standards for the connection and cost responsibility of DER, as well as open access to information as discussed in OPG's submissions on Recommendations 1 and 3, below.

As discussed below, DER proponents currently face significant risk and administrative barriers when proposing to connect new resources to a distribution system. Until connections, costs, performance levels and information access rules are standardized and enforced, DER proponents will face significant, potentially insurmountable, barriers to deploying innovative solutions for customers.

OPG also recommends that the OEB move quickly to establish a working plan to coordinate its efforts on innovation with the IESO, as described above.

1. Providing a Transparent and Level Playing Field

Clear Processes and Rules Enable Innovation

OPG supports Recommendations 1A (*Improving transparency and consistency of the connection process and clarifying cost responsibility*) and 1B (*Establishing clear rules for DER integration into distribution systems*).

One of the most significant business risks facing DER proponents is the potential for wide variation in the process for connecting new resources to distribution and transmission systems. There is no clear standard for the process or timeline by which DER should be connected, or for who bears certain costs. These challenges exist both between different distributors, and even between projects within a single distributor's service territory. This uncertainty directly affects customers – if customers can't be certain when DER can be brought on-line (or what their costs will be), that uncertainty could significantly depress their willingness to adopt innovative energy solutions. As suggested in the Report, the OEB could significantly address this risk by establishing a standard, province-wide interconnection process, along with service delivery standards for that process.[1]

OPG expects that the details of a future DER connection framework will be addressed in subsequent OEB proceedings. Accordingly, it would be premature to propose a specific set of

[1] Such standards should apply to both for the timeliness and quality of service provided by a distributor.

processes or rules in these comments.[2] However, at a high level, OPG expects that an effective platform would also likely include access to anonymous customer data, and standards on the interconnection of customer DER devices. It may also need to include modified codes of conduct between distributors and unregulated affiliates to prevent cross-subsidization and cross-promotion.

Encourage Collaboration Where Appropriate

Recommendation 1 emphasizes collaboration between distributors and DER proponents in several contexts.[3] In OPG's view, collaboration is effective when it occurs in the context of a clear set of rules and responsibilities. The Report's objectives are unlikely to be met if connection standards or the technical integration of DER are left to the parties to negotiate, since the outcome of any given negotiation will necessarily be uncertain. Put another way, the rules and responsibilities of the different parties should be established on a generic basis, and the parties should be encouraged to collaborate on *how* to meet those standards in the context of a given project.

Commitment to Competition

The role of distributors will need to evolve to accommodate DER and other innovative energy solutions. The Report identifies this need in Recommendation 1D (*Re-examine regulatory restrictions on utility business activities and review the separation of regulated and competitive services in light of new technologies and service expectations*). OPG is concerned that any changes to the role of regulated distribution business should be made in a way that enables innovation, but avoids expanding the scope of historic monopolies.[4]

Much has been written on the transition from Local Distribution Companies ("LDC") to Distribution System Operators ("DSO"), and that transition is well underway in several jurisdictions. Some may suggest that distributors should evolve further, into Load-serving Entities ("LSE"), which would be responsible for procuring supply for customers within their monopoly territory, either through contract or direct ownership of energy resources. In OPG's view, adoption of an LSE model requires a thorough and detailed analysis in order to demonstrate whether this model provides any material benefit to customers given its potential to cause significant negative effects in the larger Ontario power grid (including but not limited to the potential for significant stranded assets).

Distributors should be permitted to participate in DER markets only through independent affiliates. For example, if distributors were allowed to include merchant storage capacity within their regulated businesses, they could have a significant advantage over unregulated competitors, whose storage would not be backstopped by ratepayers. Similarly, distributors should only be allowed to participate in emerging markets outside of their regulated business, such as electric vehicle charging, through an independent affiliate.

---

[2] For example, it may be more efficient to establish a single, province-wide platform for DER transactions, as opposed to requiring each distributor to establish their own platform. On the other hand, larger urban centres or regions may have distinct needs that could justify multiple platforms. Those details would need to be resolved collaboratively by the OEB, IESO, and appropriate industry parties.

[3] For example, the Report suggests that the connection process should encourage "collaboration between utilities and proponents on configuration alternatives" (page 6) and the "facilitation of bilateral commercial arrangements" is a means to effectively integrate DER into a distribution system.

[4] Some of OPG's comments on this recommendation may overlap with Recommendation 2 (*Removing Disincentives to Innovative Solutions*).

As an alternative to incorporating DER into rate base, some jurisdictions have adopted a range of hybrid approaches, allowing distributors to compete with independent businesses in certain areas. In OPG's view, these approaches are not effective because they still allow the distributor to exert power in new markets based on its direct relationship with customers in the regulated market. As a result, third party competitors may be discouraged from entering the market.[5]

OPG believes that customers and the province will benefit most from an electricity framework that properly compensates monopoly distributors for their significant (and evolving) role as market facilitators, but also strictly limits the activities of those regulated businesses to that role. Expansion of monopoly distributors into competitive markets has the potential to distort competition and ultimately reduce or eliminate the benefits that innovative solutions could generate for the people and businesses of Ontario.

2. Removing Disincentives to Innovative Solutions

Fair Remuneration for the Right Solution

OPG supports Recommendation 2A (*Remunerate utilities to make them indifferent to conventional or alternative solutions*). Distributors should be fairly compensated for adopting the energy solutions that best serve their customers' needs and preferences, and the calculation of that compensation should not bias the distributor toward one solution over another. If a capital investment in the conventional distribution system is not the best solution to meet customers' needs, distributors' remuneration should not favour that investment.

In OPG's view, it is likely too early to know whether basing regulated revenue on a distributor's total expenditure (or any other specific approach) would achieve those goals. The calculation of any new form of remuneration would need to be carefully reviewed to ensure that no type of solution is artificially advantaged, and that distributors are fairly compensated.

OPG also suggests that OEB also consider how the adoption of DER could be inhibited by the existing electricity pricing structure. The current pricing structure is largely based on the assumption that electricity flow is uni-directional. As DER begin to proliferate, it will be important that legacy pricing structures do not become undue barriers to innovative energy solutions.

Encouraging Innovative use of Utility Assets

OPG generally supports Recommendation 2D (*Consider timely funding mechanisms to encourage utility innovation that provides near term customer benefits*). In particular, OPG agrees with the Report's conclusion that uncertainty over whether new approaches will be approved in a rate-setting proceeding can introduce risk for a regulated firm, and that greater certainty would remove barriers to innovation.[6] Customers and regulated firms would both benefit if Ontario's

[5] As an example, Georgia Power launched a rooftop solar consultation business in the summer of 2015, under which the distributor would advise customers on solar photovoltaic (PV) options, giving customers the option of installing PV through the distributor's unregulated business or through other certified installers. The results were poor for the distributor and private competitors: the distributor saw very few installations in the first year (five completed installations out of 10,000 inquiries), and private PV providers stayed out of the state because of the perception that the distributor was "trying to stifle competition." [Source: Greentech Media, "Georgia Power's Rooftop Solar Program Signs Up Only 5 Customers."]

[6] Report, p. 13.

regulatory framework provided greater incentives to make innovative use of historically regulated assets.

OPG believes that regulated entities can innovate in historically regulated areas without expanding the scope of monopoly activity. While emerging markets based on new technologies should be kept competitive, the OEB should also take steps to incent innovative use of assets that have historically been regulated. Earnings-sharing mechanisms should be designed to be asymmetrical, protecting customers from unprofitable initiatives. Such a framework would provide regulated entities with a meaningful incentive to make more innovative use of their legacy regulated assets.

Participation in Broader Electricity Market

At an aggregate scale, DERs can make a valuable contribution to the broader electricity market. As the OEB considers new forms of regulation, it is essential that DERs do not become "captive" to the distributor in whose service territory they are located. In some cases, DER may be of value to the broader electricity market, but of less obvious value to the distribution system. If Ontario is to maximize the value of DER, distributors must not exercise complete control over DERs in their territory.

3. Encouraging Market-Based Solutions and Customer Choice

Open Access to Information is Critical

OPG agrees with Recommendation 3: effective markets for DER and other innovative energy solutions will rely on open access to standardized distribution system information. Access to system information is critical to identifying and deploying optimal solutions for customers and system needs.

Through their operation as distributors, Local Distribution Companies ("LDC") naturally amass significant data on energy consumers' usage and needs, and on the operating conditions of the distribution system. Open and standardized access to such data is critical to enabling an efficient and competitive market for DER. In effect, the development of open energy markets will require that distributors evolve from a focus on distributing electricity to a facilitation role that enables a multi-directional electricity platform. Open, standardized access to information about that platform will underpin the market for many innovative solutions.

Adopt a Market-Based Approach to Distribution Capital Planning

As DER become more advanced and widely available, there will likely be an increasing number of instances where DER solutions can defer or avoid the need to more expensive conventional "wires" solutions to distribution system needs.[7] OPG proposes that the OEB should consider establishing and enforcing standard processes to ensure that distributors select the optimal solutions to satisfy customers' needs and preferences. OPG also proposes that the OEB establish requirements to ensure that those DER investments are identified and procured in a transparent and fair manner to maximize value for customers.

[7] Consolidated Edison's Brooklyn Queens Demand Management Program (BQDM) is often cited as a successful example of such a solution. In the BQDM, ConEd proposed to defer construction of a $1.2B substation through a combination of customer-side and distributor-side DER solutions (52 MW) and traditional distributor "wires" projects (17 MW). *Brooklyn Queens Demand Management Program, Implementation and Outreach Plan*, Filed with NYPSC on January 30, 2017, p. 4.

OPG is also concerned that distributors do not possess the information required to assess the value of a given DER implementation. To accurately compare the incremental value of a distributed generation resource against a "wires" solution, one must evaluate the cost of power supplied by the DER against the cost of power supplied by the grid. Distributors are not equipped to make this evaluation, as grid cost information is mainly confidential and controlled by the IESO, and forecasting grid requirements and costs requires a complex dispatch model. Incorrect evaluation of this metric will risk stranding transmission and generation assets. This fact further supports the need for the OEB and IESO to adopt a unified approach to innovation and the integration of DER into Ontario's electricity system.

OPG makes the following specific proposals on how the OEB could effectively encourage market-based solutions are reflected in distributors' capital planning:

1. **Identify DER Solutions in Capital Planning:** To remove bias toward conventional "wires" assets, distributors' capital plans should be required to identify all instances where a DER solution (including contracted solutions) may be appropriate. The evaluation of alternatives should be done in a way that reflects the true incremental value of the DER, as discussed above.

2. **Require Transparent, Competitive Procurement:** Where distributors and transmitters use DER or other alternatives to traditional "wires" projects, they should be required to procure those alternatives competitively through a standardized, transparent process, pursuant to clear rules.

3. **Develop an Enforcement Process:** External review of distributors' DER procurement should occur on a scheduled basis, supported by an effective enforcement process.

Other jurisdictions are developing and implementing DER procurement regimes similar to the framework OPG proposes. For example, the New York Public Service Commission ("NYPSC") has recently addressed DER identification and procurement requirements for distributors. As part of their ongoing transformation into "Distributed System Platform" providers, New York utilities were required to file a joint plan to address the tools, processes and protocols that the distributors will use to plan and operate a grid capable of dynamically managing distributed resources and supporting retail markets.[8] The NYPSC reviewed the distributors' proposals, including the requirement that they identify "non-wires alternatives" to conventional investments as part of their capital plans, and processes to ensure the competitive procurement of DER.[9]

While a detailed review of other jurisdictions' approaches is beyond the scope of these submissions, OPG recommends that the OEB's next steps include a thorough review of the criteria and processes being developed and implemented in other advanced jurisdictions.

[8] New York Public Service Commission. *Order on Distributed System Implementation Plans Filings*. Case 14-M-0101 and Case 16-M-0411, March 9, 2017, p. 2.
[9] *Ibid.*, p. 18-25.

4. Simplified Regulation

OPG generally supports Recommendation 4 and makes the following, limited comments.

OPG supports the concept of the "regulatory sandbox" approach proposed in Recommendation 4A. By reviewing innovative solutions in a collaborative forum, the OEB may be able to enable effective solutions for customers in a timely, efficient, transparent way. Innovative projects could be allowed on a pilot- or trial-basis through a "sandbox" approach.

However, the OEB should be careful to ensure that the sandbox does not become a forum by which parties may circumvent the principles discussed above (e.g., open access to information; limiting the scope of regulated monopolies) or reduce competition in the market for innovative energy solutions. OPG also recommends that the sandbox be a forum where DER proponents may advance solutions that require distributor collaboration. If the sandbox only enables innovation by distributors (and not other parties), it would not create a "transparent and level playing field."

Subject to the comments below, OPG supports Recommendations 4C and 4D, both of which aim to enhance that efficiency and speed of regulatory proceedings without compromising their effectiveness or transparency. OPG proposes that the details of any changes to the OEB's adjudicative processes should be examined closely in coordination with affected parties before implementation. OPG also proposes that any increased use of "mechanistic" regulation should also permit sufficient flexibility to address the needs of any distributor and their customers.

Conclusions

The Report is a valuable step toward creating a clear regulatory framework for innovation in Ontario's electricity system and providing certainty for those who wish to invest in the technologies that will enable that innovation. In contrast, an uncertain regulatory framework discourages innovation. Most innovative technologies require a significant up-front capital investment. Few firms, if any, would be willing to make those investments without sufficient confidence in the treatment of future revenues.

Whatever changes the OEB makes to enable innovation, all market participants will benefit from a clear understanding of those decisions and how they will be implemented. Conversely, confusion or ambiguity as to whether distributors will be permitted to engage in certain competitive activities could have a significant chilling effect on an emerging market for DER and other new technologies. Accordingly, OPG proposes that, once the OEB has established a framework to govern innovative technologies, it should clearly and definitively communicate that framework.