October 18, 2019

Via: e-filing

Kirsten Walli
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Re: Board Consultation on Utility Remuneration and Responding to Distributed Energy Resources.

Board File Nos. EB-2018-0287, EB-2018-0288.

Dear Ms. Walli,

In response to the Ontario Energy Board's (the 'Board's') letter issued on September 26th 2019, Peak Power Inc. ('Peak') respectfully submits its comments related to the above captioned initiatives. We commend the Board for initiating these consultations and look forward to on-going engagement with the Board on issues related to Utility Remuneration and Distributed Energy Resources.

About Peak Power Inc.

Peak is a Toronto-based software company that leverages big data and artificial intelligence (AI) to optimize Distributed Energy Resources (DER) based on its market predictions. Our vision is to be the number one company globally to provide technology solutions that enable business economics to advance the transition toward a decentralized, distributed, and transactive electricity grid. Peak was founded in 2015, and in it's four short years, Peak has more than 3.7MWh of energy storage and software projects operational, and 23 MWh of energy storage software projects in development in Ontario, New York, and California.

Funded both by the federal and provincial governments of Canada, we take pride in our Canadian roots. We are proving that the lessons learned in Ontario have marketability globally, and that we can provide leadership in the economics of the new energy future. We are dedicated to effective, transparent, granular and dynamic pricing at all-levels of the energy sector and believe that a balance can be found between a desire for cost certainty by consumers and the complex factors that drive cost causation at the system-level.

As an active stakeholder within the DER technology space, we look forward to working with the OEB and the sector to develop incremental regulatory evolution that simultaneously addresses current cost-shifting issues, reflects system cost-causation, and establishes/maintains incentives for individual behavior.

For further information, please feel free to contact Peak at the information below.

Best regards,

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Comments following the Ontario Energy Board's (the 'Board's') Stakeholder Engagement Sessions on Utility Remuneration and Responding to Distributed Energy Resources ('DERs')

The Board is currently faced with the complex task of balancing interests of energy stakeholders with rate payers while the electricity system continues to evolve. The proliferation of DER's undoubtably challenges traditional paradigms to regulatory oversight. As a software company actively involved Energy Storage System (ESS) development (both stationary and mobile), we are thankful for the opportunity to provide our insights on managing this complexity. Our comments reflect our successes and roadblocks as we continue to build out our pipeline of business. We recognize the difficulty of the task being undertaken the Board and are in support of the Board's bold undertaking.

We have structured our commentary to align with the Board's foundational questions in the letter dated July 17, 2019.

What objectives should the Utility Remuneration and Responding to DERs initiative aim to achieve?

1) Legislative/Regulatory Timeliness

Given that many coordinated reforms may be needed not just from a Board perspective, but also in relation to other agencies, a formalized system for rule changes and timelines should be considered. Changes may be far reaching including regulatory and legislative changes. It will require participation of the Provincial Government, changes to the *Electricity Act*, the *Ontario Energy Board Act*, the Transmission System Code, the Distribution System Code, and many others. Other agency impacts could also include the Technical Standards & Safety Authority, the Electrical Safety Authority, Measurement Canada, Canadian Standards Association, and so on. Given the complexity involved, we recommend that the Board look to other jurisdictions where formalized processes for rule changes and timelines are currently in place. For example, Australia provides an interesting system for Rule Change Requests through the Australian Energy Market Commission.

What specific problems or issues should each initiative address?

1) Balancing Private Sector Risk

The development of Ontario's electricity system provides an interesting case study of the benefits and the costs of improper allocation of risk. On one hand, government oversight of adequate risk allocation is required to ensure appropriate investment in Ontario's electricity supply and infrastructure, and alignment with government policy objectives. On the other hand, imbalanced risk allocation has dire impacts on electricity prices. The future of DER integration requires appropriate methods to allocate risk so that private sector investors do not shy away from investment caused by political risk, but at the same time, consumers do not bear the burden or undue risk allocation to their rate base. In addition to the Board's policy expertise, the involvement of government agencies familiar with infrastructure investment and risk allocation could provide objective guidelines for ensuring an appropriate methodology moving forward.

Furthermore, DER integration considerations should also be considered in concert with changes to rate design and tariff changes. Our experience in the sector has shown us that sophisticated financial institutions and energy stakeholders are reluctant of the Ontario market due to a perception of potential changes in programs and rate design. A system to protect the interest of private sector investors from changes to

underlying project economics is needed, but at the same time, should adequately share risk instead of entirely de-risking the project at the expense of ratepayers.

2) DER Interconnection and Safety

Currently, behind-the-meter technologies are non-regulated in Ontario. As a result, regulations for fire safety in this emerging space have yet to be fully developed. This risk (from DER investment sector) became even more apparent in the U.S after a major Californian utility (Pacific Gas & Electric Corp.) filed for bankruptcy following lawsuits from wildfires in 2018. New York has also recently introduced a new protocol for dealing with fire safety hazards in ESS projects (UL 9540A). New York has proven to us that updates in regulations are positive, but they also create supply crunches in the sector (until suppliers of batteries catch up). Ontario is in a unique position to learn from these other jurisdictions and design a regulatory environment that puts consumer and grid safety first, but also balances the interest of the sector from a growth perspective.

3) Transmission and Distribution Benefit

Structures should be put in place to allow DER technology solutions to be rewarded not just from an electricity supply perspective, but also for casual benefits to distribution and transmission infrastructure cost avoidance. An evolution of traditional thinking for Total Resource Cost Tests and Societal Cost Tests is needed to adequately allow DER integration economics to accurately reflect the full stack of benefits being provided. This will aid in project economics and help drive evolution of true time-of-use pricing in the future. New York provides a comparative case study, where the Value of Distributed Energy Resources (VDER) mechanism traces benefits to the specific and cumulative system benefits provided.

4) Coincident Peak Impact

We acknowledge that energy storage assets depend on both the transmission and distribution networks to which they are connected to operate and look forward to the OEB's development of methods to compensate storage assets for the value they add to the system. Moreover, we would like to note that the current non-coincident peak methodology (NCP) of allocating all transmission and distribution charges does not properly account for all the factors that result in transmission and distribution costs. It is currently possible for a storage asset to simultaneously drive net benefits to the surrounding grid, while increasing the Transmission & Distribution costs for its host-meter. Future reforms must focus on aligning charges with their key drivers. For example, highest hourly usage during peak hours (I.E. 3pm-8pm in the Summer or Top 5 Peak hours). We understand that some charges may still rely on NCP as their key driver.

5) Interconnection

A system for consistency and standardization of connection guidelines and processes should be considered across all utilities. Since private sector contracts and commissioning contracts often have representation and warrants surrounding commercial operation, unexpected delays or unpredictable timelines presents a financial disincentive for supporting services due to liability. Furthermore, a standardized utility system can alleviate issues where ESS solutions are limited by interconnection issues where they are needed most (i.e. on constrained feeder lines).

6) Communication Networks

The utility communication network and SCADA requirements can add significant costs to projects that make smaller projects uneconomic. For examples, small projects (<500kW) can range from $25K-$50K, and large projects (>1,000 kW) can range from $250K – $500K. As DERs proliferate, utilities and the IESO will need visibility into operations for system planning needs. Radio communication solutions may have issues caused by interference when multiple buildings are communicating to the same tower in urban areas. Visibility concerns can be managed with reliable cellular or internet communication protocols, and requirements be adjusted based on zones and sizing. National standards could ensure ease of integration into any utility monitoring systems.

7) Access to IESO Revenue Streams

At this time, a Distributed Energy Resources are unable to contribute to needed Flexibility at the Wholesale level as the IESO's interpretation of their current rules does not allow for dual participation of sizeable Energy Storage Systems. We encourage the OEB to work with the IESO to enable DER participation under existing Dispatchable Load and Energy Limited Resource Regulations.

What principles should guide the development and selection of policy options?

1) Consistency across various OEB initiatives

The Ontario Energy Board is currently faced with the difficult role of aligning Customer Experience, Cost Causality, the Promotion of Innovation, and Utility Remuneration. To this end, at least five different rate cases are on-going that we believe to be interrelated:

- EB-2015-0043 – Board Consultation on Rate Design for Commercial and Industrial
- EB-2016-0201 – Examination of Alternative Price Designs for Global Adjustment from Class B
- EB-2018-0287 – Utility Remuneration
- EB-2018-0288 – Respond to Distributed Energy Resources (DERs)
- EB- 2019-0207 – DER Connections Review

Peak is in strong support of these initiatives. We recommend that each of these initiatives be considered collectively from the perspective of overlap and interdependencies. Additionally, representation or observance of other sector groups would also be beneficial such as the IESO's Energy Storage Advisory Group, the Market Development and Advisory Group, the Ministry's Industrial Rate Consultation, and the Ontario Energy Association/Electricity Distributors Association working group on DER interconnections.

2) **Key principles for rate design**

- *Incentivizing good system behavior:*
    - Customer costs and compensation must align with behaviors that drive short-term and long-term investments.

- *Empower least cost solutions:*
    - Utilities must be empowered to seek low cost solutions and be compensated for efficiency created at the wholesale and distributed levels.

- *Reflect the complexity of system cost causation:*

- Rate design must reflect the complex cost causation that occurs in the sector. This includes System Coincident Peak, Local Coincident Peak and Non-Coincident Peak and other allocation methodologies.

- *If deemed necessary*:
  - Isolate customers from complex mechanisms, but ensure that LDCs or others are still exposed to appropriate price signals.