**Submissions of Peak Power Inc. Regarding the Reform of**

**Ontario’s Long-Term Energy Planning Process**

**April 2021**

**Introduction**

Peak Power Inc. is pleased to respond to the Ministry’s posting on the Environmental Registry regarding Ontario’s long-term energy planning process.

Peak Power’s view is that the existing long-term energy planning process should be reformed to establish clearer roles for each of the Government, the IESO and the OEB, and to ensure opportunities for meaningful input by stakeholders throughout the planning process.

The preparation of a long-term energy plan is more than a “technical” exercise. It is an undertaking that touches on a broad range of issues affecting the economic and social wellbeing of the Province. Accordingly, the Government must remain engaged – especially in setting the overall goals and framework for the development of the plan.

Peak Power also recommends that the development of the next long-term plan should be coupled with a clear “roadmap” for addressing the regulatory and structural barriers that continue to impede the deployment of innovative energy technologies in Ontario.

Peak Power’s submissions are set out in more detail below.

1. **Peak Power Brings to the Consultation the Perspective of an Engaged Participant in the Ontario Energy Sector**

Peak Power is a relatively new entrant into the Ontario electricity market. The company was established in 2015 and is based in Toronto. It develops and deploys Artificial Intelligence to manage the operation of distributed energy resources (DERs) such as “smart” building systems, industrial-scale batteries, and electric vehicles (EVs).

Peak Power’s success in driving innovation in the electricity sector is reflected in a range of projects across North America, including:

* The “Peak Drive” program in Toronto, in partnership with Nissan Canada and Ontario Power Generation, which demonstrates the use of EVs as a back-up power source for the buildings in which they are parked.
* A multi-asset Virtual Power Plant that participates in the IESO’s markets and programs by aggregating and managing the electricity demand within several office towers in downtown Toronto using a set of batteries, EVs and smart building systems.
* The first Virtual Power Plant connected to the grid in Westchester County, New York, in partnership with GHG Realty and Kruger Inc.
* A storage facility in San Diego, California, in partnership with Diamond Generation Corporation (a wholly owned subsidiary of Mitsubishi Corporation) that is one of the first projects configured to provide both “behind the meter” energy management services to the client’s facilities and “in front of the meter” ancillary services to the California grid under the terms of FERC’s ground-breaking Order 841.[[1]](#footnote-1)

Projects under development include:

* The installation of smart building systems for major industrial and commercial facilities, including those owned by Lactalis Canada Inc., Dream Asset Management Corporation, and KingSett Capital Inc.
* The deployment of DERs integration systems with Oshawa Power & Utilities Corporationand Hydro One Networks Inc., with funding from the IESO Grid Innovation Fund.

This success has enabled Peak Power to attract key investors, including Osmington Inc. (the investment office of David Thomson, Chair of Thomson Reuters), Sensata Ventures (the investment arm of Sensata Technologies, a leading industrial technology company), Canadian Shield Capital (the investment arm of Hatch Ltd., a major international engineering firm), The Atmospheric Fund, Export Development Canada, and BDC Capital (the investment arm of Business Development Canada). Peak Power has also received funding from FedDev Ontario, the MaRS Investment Accelerator Fund, the Ontario Centres of Excellence, the Low Carbon Innovation Fund, and Sustainable Development Technology Canada.

Peak Power has also established a record of constructive engagement with energy regulatory agencies in Ontario and has been active in several collaborative groups, including:

* The IESO’s Energy Transformation Network of Ontario, a group of senior leaders in the energy sector working together to drive a more efficient and affordable electricity sector in Ontario.
* The OEB’s DERs Connection Working Group, established to develop recommendations regarding the processes and standards to govern the connection of DERs to electricity distribution systems.
* The MaRS Accelerating Smart Grid Adoption Across Canada, a diverse group of energy industry leaders convened virtually in the Fall of 2020 to identify the main barriers to the adoption of smart grid technologies and explore solutions to these challenges.

Peak Power’s involvement in innovative projects across North America, its success in attracting investment capital, and its ongoing engagement with other energy sector participants give it an informed perspective on the issues facing the Ministry regarding the reform of the long-term energy planning process. That perspective may be different from the perspective offered by more traditional and established players in the Ontario energy sector.

1. **Peak Power’s Experience Suggests Several Factors for Consideration by the Ministry**

Peak Power’s experience has highlighted several factors which the Ministry should consider when designing a new long-term energy planning process for Ontario:

* The development of the new plan should be coupled with a “roadmap” for addressing the regulatory and structural barriers that continue to impede deployment of innovative energy technologies in Ontario. Failure to address those barriers upfront presents the hazard that the new long-term energy plan, by default, will favour traditional solutions over new technologies that might be more cost-effective, more flexible, and more compatible with the overarching goals of the long-term plan. In that regard, FERC’s Order 2222, issued in September 2020, is particularly noteworthy.[[2]](#footnote-2) That order requires system operators – the American counterparts of the IESO - to remove the barriers preventing DERs from participating on a level playing field with more traditional assets in capacity, energy, and ancillary services markets**.** Ontario should follow FERC’s lead.
* The development of this “roadmap” would require better coordination between the OEB and the IESO regarding the rules governing the energy sector. The OEB’s work regarding the connection and remuneration of DERs at the distribution level must be “in sync” with the IESO and its work regarding the integration of DERs into the bulk power market. A good model for such a “roadmap” is the “DER Integration Roadmap and Workplan” prepared in late 2020 by the Energy Security Board, an Australian inter-governmental agency established by the Council of Australian Governments**.** [[3]](#footnote-3)
* The development of the plan will influence the way in which institutional and private sector investors view the Ontario electricity sector. Capital markets are now international in scope. Investors on both the supply and demand sides of energy markets are “hardwiring” commitments to carbon reduction into their investment strategies. For instance, under the Institutional Investors Group on Climate Change, pension funds and other asset owners with US$8.5 trillion under management have committed to “net zero by 2050”.[[4]](#footnote-4) Similarly, initiatives such as RE100 and the Renewable Energy Buyers Alliance have secured carbon reduction commitments from over 290 of the largest global corporations and professional organizations, including General Motors, Accenture, Walmart, Amazon, Honda, Google, Microsoft, and McDonald’s. Accordingly, the development of a new long-term energy plan must acknowledge these heightened expectations regarding carbon reduction and climate change.[[5]](#footnote-5)
* The scope of the plan should be comprehensive. It should extend beyond the electricity sector to reflect the role of other fuels, including natural gas and hydrogen. Peak Power notes that the development of the 2017 LTEP included a consideration of projections regarding natural gas, district heating and hydrogen. Peak Power anticipates that the integration of diverse fuel markets and technologies will accelerate over the planning period. Accordingly, a new plan should reflect this increasing integration.
* The plan should be flexible. It must be adaptable in the face of the ongoing changes within the sector. Those changes include the rapid pace of technological innovation, the integration of energy markets as noted above, changes in the relative costs of competing technologies, the heightened focus on reducing carbon emissions, the increasing need to ensure the resilience of the power system in the face of extreme weather events, changing consumer expectations in respect of price and service quality, and the changing pattern of economic development in the Province. These considerations may require periodic “course corrections” during the life of any plan.

These observations have helped shaped Peak Power’s response to the questions posed in the Ministry’s Environmental Registry posting.

1. **Peak Power’s Answers to the Questions in the Ministry’s Environmental Registry Posting**

Peak Power’s answers to the specific questions in the Ministry’s posting are set out below:

***Question 1 – How can we promote transparency, accountability and effectiveness of energy planning and decision-making under a new planning framework?***

These objectives can best be met through a process that establishes clear and appropriate roles for each of the Government, the IESO and the OEB with respect to the development of a new long-term energy plan.

The Government should be responsible and accountable for the overall design, initiation, and completion of the planning process. It must remain engaged – at the front-end, in setting the overall framework and goals for the development of the plan and, at the back end, in satisfying itself that the plan meets the needs of the Province.

The IESO should be responsible for the preparation of the plan. The IESO is the agency with the deepest expertise regarding system operations and system planning. The framework governing the planning process should ensure that the IESO consults with stakeholders throughout the preparation of the plan. Energy sector stakeholders – including generators, transmitters, distributors, consumers, aggregators, and service providers – have expertise, experience, and perspectives relevant to the development of the new plan. Active and meaningful engagement by the IESO with such stakeholders during the planning process would help to enhance the quality of the plan. It would also help to ensure confidence in both the process and the plan resulting from that process.

The OEB should be responsible for conducting a public hearing to review the plan prepared by the IESO. The recent reorganization of the OEB, particularly the separation of the OEB’s adjudicative function from the OEB’s other regulatory and administrative functions, would ensure the independence and integrity of that review.

Peak Power suggests that the long-term planning process could be structured as follows:

Step 1 – The Government sets the Goals and Terms of Reference for the planning process.

The Government should set the Goals and Terms of Reference for the long-term energy planning process. In formulating the Goals and Terms of Reference, the Government may choose to consult with independent experts and to submit the proposed Goals and Terms of Reference to a Committee of the Legislature for comment.

Peak Power anticipates that the Terms of Reference would address matters such as:

* A requirement, in the case of the first plan, that, as a preliminary step in the development of that plan, the IESO and the OEB produce a “roadmap” for the integration of DERs at the distribution level and in the bulk power market.
* A requirement that the planning process provide for meaningful consultation with and input from stakeholders, including about matters such as the assumptions and projections underlying the plan.
* Guidance regarding the participation of indigenous communities in the development of the plan.
* The scope and period for which the plan should be developed (i.e., 20 years,30 years, etc.).
* The target regarding carbon emissions to be used by the IESO in the development of the plan.
* A requirement that, if the plan includes several scenarios, the plan specify which scenario is most likely and, accordingly, should be used to guide procurement decisions.
* The deadline for the completion of the new long-term plan.

Step 2 – The IESO prepares the long-term plan.

The IESO should be responsible and accountable for preparing a plan that meets the Goals established by Government and for doing so in a manner that is consistent with the Terms of Reference (including the requirements regarding stakeholder consultation and the production of a “roadmap” regarding DERs implementation).

Step 3 – The OEB reviews the long-term plan.

The OEB should be responsible and accountable for the review of the long-term plan prepared by the IESO. That review should be undertaken in a public proceeding with participation by eligible intervenors, subject to a reasonable deadline for completion of the review.

The scope of the OEB review should be limited to an assessment of whether the long-term plan proposed by the IESO meets the Goals and the requirements of the Terms of Reference established by Government. The role of the OEB should not be to revise the plan or to substitute its views for those of the IESO.

If the OEB, concludes that the plan meets the Goals and Terms of Reference, the plan would proceed directly to Step 4. However, if the OEB concludes that the plan does not meet the Goals or Terms of Reference in some material respect, the OEB should refer the plan back to the IESO for further consideration of the deficiencies identified by the OEB. In the event the proposed plan is referred back, the IESO should be responsible and accountable for reconsidering the plan in light of the OEB’s observations and making any changes to the plan that are warranted by that reconsideration.

Step 4 – The IESO submits the long-term plan to Government.

The IESO should submit the proposed long-term plan to Government following the OEB review and reconsideration process set out in Step 3. The IESO’s submission should explain how any matters raised by the OEB have been addressed.

After receiving the proposed long-tern plan, the Government may, within a specified period, either:

1. Send the proposed plan back to the IESO for yet further consideration of some feature of the plan by a specified date;
2. Accept the plan; or
3. Amend the plan.

Any amendment to the plan should be made by Order in Council and the Government should be required to set out the reasons for such amendment.

In the event the Government takes no action during the specified period, the plan should be deemed to have been accepted.

Step 5 – The IESO implements new resource acquisition processes aligned with both the new long-term energy plan and the corresponding “roadmap” regarding DERs integration.

Following the Government’s acceptance or amendment of the new long-term plan, the IESO should proceed to implement new resource acquisition processes (RFPs, auctions, etc.) in accordance with the new plan and the corresponding “roadmap” regarding DERs integration.

Peak Power recommends that the rules governing these new resource acquisition processes, together with other rule changes resulting from the adoption of the “roadmap”, should be reviewed by the OEB through a public proceeding like that employed at Step 3 above.

The adoption of a new long-term energy planning process along the lines of the “5 Step” process outlined above would meet the Government’s interest in transparency, accountability, and effectiveness.

***Question 2 – What overarching goals and objectives should be recognized in a renewed planning framework?***

Peak Power’s view is that the overarching goals and objectives of the long-term planning process should be as follows:

* Resource Adequacy and Reliability - To secure the resources required to meet reliably the Province’s needs over the planning period.
* Cost-Effectiveness – To achieve resource adequacy and reliability in a way that is cost-effective and recognizes the strong interest of electricity consumers in a supply of electricity that is affordable.
* Carbon Reduction – To achieve resource adequacy and reliability in a manner that is consistent with the Province’s targets regarding carbon emissions.

The pursuit of these Goals may involve trade-offs during the implementation of the plan. Peak Power anticipates that these trade-offs would be reflected in the range of the scenarios set out in the plan.

Peak Power does not take issue with any of the goals and objectives currently listed in the Electricity Act and believes that most of them could be fitted under one or other of the three overarching goals and objectives above.

***Question 3 – What respective roles should each of the Government, IESO and OEB hold in energy decision making and long-term planning?***

Please see the answer to Question 1. The Government should set the Goals and Terms of Reference for the long-term planning process, the IESO should prepare the plan having regard to those Goals and Terms of Reference, and the OEB should review the plan for consistency with the Goals and Terms of Reference.

***Question 4 – What types of decisions should be made by technical planners at the IESO and OEB?***

Please see the answer to Question 1. The IESO should prepare the long-term plan having regard to the Goals and Terms of Reference established by Government ad the OEB should review that plan for consistency with those Goals and Terms of Reference.

In addition, the OEB and IESO should prepare and implement, within their scope of their mandate, the “roadmap” for the implementation of DERs at the distribution level and in the bulk power market.

***Question 5 – What types of decisions should require Government direction or approval?***

Please see the answer to Question 1. The Government should set the Goals and Terms of Reference for the long-term planning process.

Peak Power also anticipates that Government approval would be required for any significant strategic investments (such as any new investment in nuclear facilities) and for any initiative that affects the financial obligations of the Province.

***Question 6 – Are there gaps in the IESO and OEB mandates and objectives that limit their ability to effectively lead long-term planning?***

Peak Power anticipates that amendments to both the Electricity Act and the Ontario Energy Board Act would be required to implement the new long-term planning process proposed in this submission, particularly with respect to the proposed OEB review of the plan prepared by the IESO.

***Question 7 – Should certain planning processes or decisions by the IESO, OEB, or the Government receive additional scrutiny, for example through legislative oversight or review by an expert committee?***

Appropriate scrutiny of the IESO’s proposed long-term plan should be provided through a review process at the OEB, as proposed in the answer to Question 1 above. The implementation of an additional layer of scrutiny by the Legislature or an expert committee is unnecessary and runs counter to the goal of relying more directly on the existing expert energy agencies, namely the IESO and the OEB.

However, as noted in the answer to Question 1, the Government may choose to consult with independent experts and a Committee of the Legislature regarding the formulation of the Goals and Terms of Reference at the commencement of the long-term energy planning process in Step 1.

***Question 8 - How often and in what form should Government provide policy guidance and direction to facilitate effective long-term planning?***

Peak Power suggests that the Government should provide such guidance and direction no sooner than the fourth anniversary of the acceptance of the prior long-term plan and no later than the fifth anniversary.

***Question 9 – How do we ensure effective and meaningful indigenous participation in energy sector decision-making?***

In Peak Power’s view, the Province should be guided by advice from the leaders of Ontario’s indigenous communities.

Peak Power appreciates the opportunity to share these observations and submissions with the Ministry. We would be pleased to answer any questions the Ministry may have. Please contact:

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1. FERC Order No. 841 (Issued February 18, 2018), as found at https://www.ferc.gov/media/order-no-841. [↑](#footnote-ref-1)
2. FERC Order No. 2222 (Issued September 17, 2020), as found at https://www.ferc.gov/news-events/news/ferc-opens-wholesale-markets-distributed-resources-landmark-action-breaks-down. [↑](#footnote-ref-2)
3. DER Integration Roadmap and Workplan (September 2020), as found at https://prod-energycouncil.energy.slicedtech.com.au/sites/prod.energycouncil/files/DER%20Integration%20Roadmap%20and%20Workplan.pdf. [↑](#footnote-ref-3)
4. See https://www.iigcc.org/. [↑](#footnote-ref-4)
5. See https://rebuyers.org/. [↑](#footnote-ref-5)