



July 27, 2023

Ms. Helen Guo
Manager, Distribution Policy & Compliance
Ontario Energy Board
2300 Yonge St., Suite 2700
Toronto, ON M4P 1E4

Dear Ms. Guo,

RE: Reliability and Power Quality Review (“RPQR”) Working Group Distributors’ Comments

On November 30, 2021, the Ontario Energy Board launched a comprehensive review of reliability and power quality in the Ontario electricity sector to align with the OEB’s goals, as set out in its Strategic Plan. The OEB established the Reliability and Power Quality Review Working Group (“RPQR WG”) in June 2022 to assist in developing enhanced reliability reporting with respect to Major Events, loss of supply, and outage causes. As per the OEB’s June 2022 letter¹,

The RPQR WG is also expected to assist OEB staff in developing approaches for reliability benchmarking and setting performance expectations for utility reliability.

This submission reflects the views of the electricity distributor membership on the RPQR WG, which includes Alectra Utilities Corporation, Cornerstone Hydro Electric Concepts, Elexicon Energy Inc., Entegrus Powerlines, ENWIN Utilities Ltd., Hydro One Networks Inc., Hydro Ottawa Limited, London Hydro Inc., Orangeville Hydro Limited, Toronto Hydro-Electric System Limited and the Electricity Distributors Association (together referred to as “RPQR WG distributors”). As participants of the working group, we trust that this submission will be helpful to OEB staff towards achieving the expectations set out above.

The RPQR WG distributors recognize the significant role that the electricity distribution sector will have in Ontario’s electrification and energy transition plans and are supportive of the important work being undertaken through this review. RPQR WG distributors believe that there is merit in developing new approaches for measuring and assessing reliability, providing appropriate attention to performance, and to facilitate the effectiveness of the OEB’s review and assessment of capital plans. Transparency in reliability performance is essential, and the RPQR WG

¹ Reliability and Power Quality Review, Ontario Energy Board, File # EB-2021-0307, June 28, 2022.

distributors note that reliability performance has been, and will remain, among the top priorities for local distribution companies (“LDCs”) to deliver the best possible service to customers.

Across Ontario, overall reliability performance has been consistently strong, however, there are pockets and geographies where improvements may be necessary. Customer engagement and research undertaken in support of rate applications continues to reflect that affordability and reliability are top priorities for customers.

The RPQR WG distributors are supportive of developing a consistent methodology for tracking and reporting reliability across the sector, and for setting appropriate and reasonable targets. That said, the RPQR WG distributors are unclear as to what key principles and core issues require resolving through this review. Distributors actively prioritize reliability when developing capital investment plans, and when customer concerns are raised, they are promptly investigated and addressed.

The distribution sector is adapting and evolving to facilitate DER penetration. Although distributors are eager to drive sector innovation to support customers, these opportunities present new system impacts that distributors must manage. Factors that impact reliability (i.e., location, asset conditions, localized weather, environmental conditions, availability of switches and sensors) within the traditional distribution system, will impact a bidirectional and high-DER system in novel ways. As a result, the RPQR WG distributors recommend that the OEB consider that electrification and energy transition warrant some caution in the establishment of a new Reliability Framework.

The discussion below addresses factors that the RPQR WG distributors believe are important for the establishment of a Reliability Benchmarking Framework going forward. Following that discussion, the submission concludes with alternative recommendations for the RPQR WG’s consideration.

Factors Relevant for the Establishment of Reliability Benchmarking Framework

At a high level, the RPQR WG distributors believe that customer engagement, affordability, and reasonable target setting need to be considered for the development of a Reliability Benchmarking Framework. Each of these items are addressed below.

Customer Engagement

Customer engagement undertaken by utilities in support of Distribution System Plans (“DSPs”) highlights that customers are generally satisfied with existing levels of overall system reliability. Outside of select industrial customers for whom reliability is a more pressing business concern (that can oftentimes be addressed at the individual connection level), most residential and general service customers do not see improving average reliability as a major concern, particularly in the context of additional cost. There remain opportunities to improve performance, however distributors often bring forward targeted plans or projects intended to accomplish this outcome.

Customer research, across a number of LDCs, consistently indicates that there is not an overwhelming customer outcry for enhanced reliability performance in the aggregate. Often, customer engagement results show a general satisfaction with performance, and indicate a sensitivity to improving performance at various levels of cost increases. The RPQR WG distributors believe this is important context that must be considered in the development of a framework to measure, monitor, and evaluate reliability performance and to establish performance targets.

Affordability

It is clear that the role of distributors will need to evolve in order to be able to facilitate electrification, and that this evolution will require support from the OEB and stakeholders. New sector initiatives should be grounded on principles of affordability, prudence, and value for money. Conversations around setting and achieving reliability targets cannot take place without adequate consideration of affordability and the necessary funding that will be required to meet established targets.

Targeted reliability capital spending can be costly. Reliability projects such as undergrounding wires are very expensive and generally benefit smaller pockets of customers in a defined area. This renders the widespread adoption of these solutions impractical and imprudent on a system wide basis. However, should unreasonable targets be set for distributors that do not consider customer engagement activities, system design, or historical asset investment strategy, the undesired (or unintended) consequence could be a significant increase to customer rates as utilities adjust their DSPs to achieve the targets.

The concept of affordability must be considered methodically and carefully as it relates to reliability performance targets. In some cases, there may be a meaningful, cost-effective improvement in reliability, and in other cases not. In recent years, some RPQR WG distributor members have filed applications with the OEB for capital funding for projects that would result in reliability improvements in specific parts of their service territories, and in most cases, intervenors and OEB staff have raised objections to these proposals, and funding was either not approved or was materially reduced. Distributors cannot be expected to meet targets, let alone be subject to penalties, without support from the OEB and stakeholders.

Simply making the targets very difficult to achieve will lead to significant investment proposals. This would escalate mounting cost pressures that already exist at a time when initiatives supporting system expansion, decarbonization, and electrification are introduced, placing upwards pressure on the cost curve. Further, while increased investment may increase the likelihood of improved performance, reliability will nevertheless continue to fluctuate annually depending on many external factors beyond the control of the utility.

Issues & Challenges with the Cohort Methodology Proposed by LEI

Recent discussions at the RPQR WG have centered on the development of a reliability performance benchmarking framework and the establishment of reliability performance expectations (targets) for distributors. In order to assess options for establishing reliability targets,

the OEB engaged London Economics International (“LEI”). LEI’s work has included a jurisdictional scan, a survey of potential approaches, and the development of recommendations for Ontario. Through this work, LEI identified five potential benchmarking approaches, as follows:

1. Self-referential with continuous improvement
2. Population median with continuous improvement
3. Population leaders with continuous improvement
4. Cohort average with continuous improvement
5. Econometric approach

While development of the framework remains a work in progress, LEI has recommended pursuing option 4, cohort average with continuous improvement. Under this method, distributors would be assigned to one of five cohorts. One of the methods LEI has explored in order to assign cohorts is to use load density (peak load/circuit km of line). The recommendation includes creating one high density cohort, and then dividing the remaining utilities equally among other cohort groups. The reliability target would then be set as the average of the three best years since 2007 within each cohort, respectively.

The RPQR WG distributors are concerned that the LEI outcomes only consider one dimension, load density, which appears to have a weak statistical significance to reliability. However, load density does not have practical significance (or operational significance) as this dimension alone does not appropriately reflect the complexity of circumstances that impact and affect reliability. Designing achievable targets that are fair to customers and consider each utility’s unique circumstances requires more insight into what differentiates reliability performance among different distributors. As such, the RPQR WG distributors consider this methodology inappropriate for designing cohorts and for establishing reliability targets, as it would produce groupings that do not provide an objective basis for meaningful comparison.

Careful construction of benchmarking is critical, and such assessments must consider ‘like for like’ comparisons. Comparing utilities with vastly different service territory sizes, customer compositions, geographic development (i.e., rural or urban), distribution system configuration or age of assets can drastically impact comparability. For example, distributors with plant that was installed in the 1950s or 1960s may not be directly comparable to those with plant installed more recently, given the stark difference in the materials and standards of the installed plant. These factors alone can have a dramatic impact on operating conditions and reliability performance, and a material impact on restoration effort, time, and cost.

A given utility’s reliability performance is dependent upon a multitude of factors including asset age and asset health, system design criteria (e.g., underground vs. overhead, loop feed vs. radial, voltage levels, level of redundancy), service area topology, the percentage of urban vs. rural distribution area, the level of automation built into the system, and the historical asset investment strategy, and many other dimensions. Further, any comparison should also consider the influence of different reliability factors out of the utility’s control such as differing storm intensity and frequency, the level of tree cover, the level of private trees in the vicinity of overhead infrastructure,

along with many others. These factors vary so greatly between utilities that using any form of peer comparison to evaluate one LDC's reliability performance against the cohort cannot provide meaningful outcomes.

Furthermore, LEI's recommendation is to exclude Loss of Supply ("LOS") events but include Major Event Days ("MEDs") in measuring utility reliability performance. Given the unpredictable nature and increasing frequency and intensity of extreme weather events, including MEDs in measuring reliability performance is problematic. While the same weather event may impact a number of utilities' service territories, the intensity of a given weather event may be vastly different from one territory to another. Take for instance the derecho storm of May 2022, which made its way through a large area of the province, yet the severity of the storm differed significantly, resulting in a small number of utilities experiencing major infrastructure damage. It is therefore unfeasible to evaluate one utility's performance against another after an extreme weather event, and including MEDs in reliability performance benchmarking renders any form of peer comparison inconsequential. Moreover, safety is paramount when responding to a major event. The inclusion of MEDs in reliability targets could jeopardize or compromise safety during post-storm restoration efforts.

RPQR WG Distributor's Recommendation for Establishing Reliability Targets

As with any benchmarking exercise, it is only when the framework incorporates meaningful inputs that the framework can produce meaningful outputs that can be used to promote or incentivize improved performance. In the context of Ontario's many distributors, the diversity of factors and business conditions influencing reliability performance (both those within and those outside the utility's control) makes it difficult to create a sensible framework that would allow for meaningful comparisons between utilities. It is important to consider that diversity of factors can also exist within a utility's own service territory that can make comparison of one neighbourhood to another impractical (e.g., an overhead supplied subdivision vs an underground supplied subdivision). For these reasons as well, MEDs should not be included in reliability performance measurement and target-setting.

If the targets developed through the framework do not meaningfully reflect the circumstances of each utility, then the ability to achieve improved performance is significantly compromised. This, then, has a material impact on the distributor's incentive to drive improved performance. For example, if a utility's reliability performance exceeds the cohort target, the utility will not be incented to improve their performance, whereas if a utility's performance is significantly worse than the cohort target, it may not be economically viable to improve performance in order to meet the target.

As an alternative to the cohort model proposed, the RPQR WG distributors recommend adoption of the self-referential target-setting model. In Ontario, the operating circumstances for any utility (e.g., overhead or underground infrastructure; urban versus rural; size/density of service territory; age of assets) is significantly varied. The self-referential target setting model inherently factors in the operational circumstances of each utility, while still striving for improved performance for every single utility, not just those that are performing worse than the average cohort level. This method

sets performance targets based on the individual distributor's annual reliability metrics and ensures that LDCs maintain focus on reliability outcomes.

In its 2014 Report on distribution system reliability measures and expectations, the OEB had reached this same conclusion for the following reasons:

[...] effective performance expectations must also reflect the business conditions in a distributor's service territory. In Ontario, distributors operate under many varying business conditions that have contributed to their current reliability performance, including their historical asset investment strategy, their design criteria, age of assets, the amount of underground assets mandated by the local authority, the mix of customers, population density and localized weather events, etc.

[...] the OEB believes that initially, approaches like regional, peer-group or province-wide baseline expectation would not be reflective of today's reality, and can be better achieved through scorecard comparisons of actual historical performance, for each distributor.²

While there have been significant changes in the sector since 2014, the underlying issues identified in the 2014 Report of the Board remain largely unchanged. The self-referential method continues to be the most appropriate methodology to benchmark utility reliability as it is the only methodology that meaningfully considers the diverse business conditions for Ontario's many varied utilities.

The self-referential target setting methodology could take different forms. As the OEB and LDCs further develop this methodology, we recommend a dead band be defined for each utility's target performance. The methodology should promote improvement, but also recognize that at some point incremental improvements become highly cost prohibitive.

While more discussion and review among all utilities is required before selecting the specific parameters for the methodology to establish targets, some demonstrative examples of the self-referential methodology might include the following:

1. Adopting previous year's performance (or apply an improvement ratio) as the target for the current year, then determining the expected step improvement to establish as the target;
2. Using the average or median of the last 5, 10, or 20 years' performance as the target for the current year, then deciding the appropriate step improvement to establish as the target;

² Ontario Energy Board, EB-2014-0189: Report of the Board: Electricity Distribution System Reliability Measures and Expectations, August 25, 2015, p.6. Accessed online at https://www.oeb.ca/sites/default/files/uploads/Report_of_the_Board_Reliability_Measures_20150825.pdf

3. Using the best of last 5, 10, or 20 years' performance as a target to obtain within five year period, then assessing the appropriate step improvement to establish as the target.

Regardless of precise methodology used, the resulting target would be a meaningful improvement relative to historical results, while still being reflective of the utility's inherent business conditions. Ultimately, the methodology selected for establishing specific targets must at some point recognize the law of diminishing returns, where the cost of marginal improvement becomes prohibitively expensive.

Penalties

The RPQR WG distributors are firmly opposed to the presumption that there is a need to implement a penalty structure as part of a reliability benchmarking framework. In our view, there is no reason to treat system reliability differently than the existing service quality measures identified in the Distribution System Code ("DSC"). The OEB has existing compliance and enforcement processes that are used to protect consumers and assess whether an electricity distributor is in compliance with its licence or other obligations.

The OEB's compliance and enforcement processes implicitly contain several essential tenets. These include a fact-finding review process where the utility has the opportunity to clarify and provide further details. This is important as the utility may have acted prudently, and in a manner entirely consistent with expectations, but as a result of unforeseen circumstances, most often outside of the utility's control, reliability issues may have arisen. These considerations do not lend themselves to the establishment of a prescribed, pre-established, one-size-fits-all penalty structure.

Under the proposed cohort-based reliability benchmarking methodology, a utility could be penalized if it fails to meet the cohort target and backslides from self-referential performance based on the average of their best three years. With this approach, the utility, no matter the level of effort it puts into improving reliability, is bound to incur penalization as targets become more difficult to achieve (since utilities would have to meet and/or exceed their best performance and cohort performance every year). The RPQR WG distributors believe that a penalty structure is not required and should not be considered.

Conclusion

The RPQR WG distributor members wish to work constructively with other RPQR WG members towards the development of an enhanced Reliability Framework. For the reasons set out above, our view is that the best way to promote enhanced, and cost-effective, performance is through an approach primarily based on the self-referential method, which also excludes MEDs. Further work can be done to shape the specific target setting methodology, but the self-referential methodology should be at the root of the proposed target setting. The self-referential methodology implicitly recognizes the wide and varied differences between utilities and the myriad of operating conditions that impact reliability. Finally, the RPQR WG distributor members do not support the inclusion of a penalty scheme associated with reliability.

If you have any questions regarding our comments, please contact the undersigned.

Sincerely,

The RPQR Working Group Distributors

Alectra Utilities Corporation

Cornerstone Hydro Electric Concepts

Elexicon Energy Inc.

Entegrus Powerlines

ENWIN Utilities Ltd.

Hydro One Networks Inc.

Hydro Ottawa Limited

London Hydro Inc.

Orangeville Hydro Limited

Toronto Hydro-Electric System Limited

Electricity Distributors Association