Feedback Form

Repowering Existing Facilities – October 20, 2025

Feedback Provided by:

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Date: November 21, 2025

To promote transparency, feedback submitted will be posted on the Long Lead-Time engagement page unless otherwise requested by the sender.

☐ **Yes – there is confidential information, do not post**

✖ **No – comfortable to publish to the IESO web page**

Following the Repowering Existing Facilities engagement webinar, the Independent Electricity System Operator (IESO) is seeking feedback from stakeholders on the items discussed. The presentation and recording can be accessed from the LLT RFP Stakeholder Engagement Webpage.

Note: The IESO will accept additional materials where it may be required to support your rationale provided below. When sending additional materials please indicate if they are confidential.

Please submit feedback to engagement@ieso.ca by November 21, 2025 .

Technology-Specific Considerations

- What types of repowering are technically and economically feasible for each generation technology (e.g., hydro, wind, solar, gas)?

Boralex is supportive of evaluating a variety of repowering options depending on generation technology. For wind power generation projects, the types of repowering options that would be both technically and economically feasible are life extensions, partial repower, overhaul and/or full repower.

For clarity we would define each repowering option as:

- Life extension: Extending the remaining useful life of the asset beyond the originally stated wind turbine generator type certificate. There are significant number of scope alternatives to be considered for life time extension and dependent variables to be considered such as site specific conditions, age of asset, equipment design, to name a few.
- Partial repower: marginally increasing power production (e.g. an additional 1 MW per wind turbine generator) resulting from an increase in rotor diameter and generator output, for example. Generally, partial repower scopes do not entail electrical infrastructure changes.
- Overhaul: typical overhaul scopes are like-for-like replacements of components (e.g. main bearing, generator, blades) with the aim to increase reliability of an aging asset and prolongs the existing remaining life of the asset.
- Full repower: the complete decommissioning and replacement of a remaining asset or the replacement of the addition of a tower adapter plate with the replacement of a complete nacelle and rotor. This may include the replacement or upgrade of the existing electrical infrastructure or reinforcement of existing foundations but has often not been required in other markets but is specific to the wind turbine design and magnitude of the upgrade (e.g. 2 MW to 7 MW platform).

- For each repowering option, what is the development time (i.e. how long would it take to conduct the work and have the facility back in service?) and the life span of the resulting facility (i.e. once the work has been completed, how long would the facility be able to reliably operate)? What would be the associated increase in capacity/production capability (if any)?

Repowering is site-specific and dependent upon the repowering scope (i.e. life extension, overhaul, partial repower, full repower as summarized above). However, in general terms a facility going through repowering would still be able to remain partially operational through repowering execution. Duration is dependent upon project schedule and execution efficiency. Life extensions would be part of operation and maintenance activities and would not require the facility to go offline for an extended period of time. An overhaul would require that a facility be partially offline for a short period of time. For a full repower of a 100MW facility would require the facility to go offline 6-18 months depending on the scope of changes.

In terms of how long the facility would be able to reliably operate for, under a life extension and overhaul, a facility would be expected to operate reliably for 10 years or more. Under a full repower, the lifetime could extend to 20-30 years, depending upon wind turbine design and site-specific conditions.

Lifetime extensions and overhaul scopes are targeted at improving the operational reliability of the asset. Depending on the facility's capability to increase capacity, the incremental increase, if applicable, would be minimal and very dependent on the specific wind turbine generator characteristics. For a notable increase in capacity/production capability, this would only be possible through a full repower option and would result in potentially increasing output of 1 MW per wind turbine or greater.

- What length of contract would be required?

The contract length would depend on the type of repowering that is being done. Boralex suggests that flexible term lengths should be provided, from 5–20-year terms. 5-year increments that allow proponents/operators to choose which term length is most appropriate for their facility.

- What are the associated costs and complexities/challenges?

Repowering activities may introduce potential conflicts with existing contractual obligations during the construction phase. These conflicts could relate to scope changes, timelines, or performance requirements that were not contemplated in the original agreement. Clear guidance on how such situations will be managed—through processes or contractual amendments—would help mitigate risk and ensure compliance. Partial repower and full repower most likely would necessitate permitting amendments to the extent the upgraded scope was no longer in compliance with the originally approved permits.

Repowering projects may also face constraints within the existing electrical collection system, and if necessary, and the potential removal and disposal costs of existing components, if required as part of the scope of upgrades.

- For each technology, what are the regulatory barriers they might face? What extent of repowering would trigger the need to get new permits/approvals (such as the REA)?

As per MECP's Renewable Energy Approvals (REA) process, as soon as the technology is larger (such as tower hub height resulting in an increase in blade tip height) or increases sound output (increased dBA) than originally allowed for in the facility's initial REA, a REA amendment would be triggered. An amendment opens a facility to potential appeals from an environmental review tribunal, which could lead to the REA being overturned. We ask that the IESO and MECP discuss REA amendments and repowering impacts and consider not allowing appeals to REA amendments for facilities that are going through repowering.

Full repowering likely would necessitate a new or amended REA for an existing facility. Other events that may trigger the need for new permits and approvals include increases to blade tip height, an increase in acoustic emissions (if applicable), or shadow flicker but will need to be evaluated on a case-by-case basis.

Eligibility & Contract Design

- Should there be a minimum equipment replacement percentage requirement for repowered facilities (or some other similar criteria)?

In comparison to other markets, the U.S. market uses the IRS ‘80/20’ fair market value test to qualify repowering projects for Production Tax Credits. Additionally, an improvement in annual energy production percentage (AEP) and improvement in percentage of reliability may also be considered to be a quantitative measure.

- Should there be a minimum facility age to be eligible for “full” repowering (new 20-year term)? How can the IESO best incentivize getting maximum value for ratepayers out of existing facilities?

Boralex believes that there are several factors that need to be taken into consideration when discussing when a facility is at a minimum age to be eligible for full repowering, but some of the most critical should be financial viability, operational reliability, and potential for production improvements.

In other markets, such as the U.S., tax equity and accelerated depreciation structures typically make a facility economically viable after approximately 10 years, coinciding with the expiry of the Production Tax Credit (PTC). The IESO could consider similar principles—such as aligning eligibility with financial recovery periods—to ensure repowering occurs when it delivers the greatest economic and system benefits.

- Are there any unique contractual provisions that may be required for repowered facilities relative to the current LT2 contracts?
- Should performance security or milestones differ for repowered facilities? If so, how?
- Are there technologies that could conduct phased repowering by repowering a portion of their facility while the rest of the facility continued to operate?

As mentioned previously, facilities typically continue to operate during repowering if using existing infrastructure (e.g. electrical system, foundation, tower (in whole or in part)). Sites that are decommissioned where existing turbines being taken down are typically executed in phases to allow the site to continue to partially operate.

Competition & Fairness

- Should repowered facilities seeking 20-year contracts compete directly with new builds under the LT2 RFP? Why or why not?

Boralex believes that facilities that are going through a full repower or partial repower should be able to participate in the same procurement process and compete for 20-year contracts in the LT2 RFP.

The same rated criteria existing for LT2 projects should also apply for repowered facilities as new facilities.

Alternatives to Repowering

- How likely is it that suppliers will seek to decommission facilities rather than repower for each respective technology?

This will depend on the type of technology and be heavily influenced by the age and condition of existing components. For wind turbines, their condition and annual energy production benefit will influence whether the same supplier can be used or if a new one should be considered.

- What does decommissioning look like for your technology?

This is technology and scope dependent.

LT2 Window 2 Timing Considerations

- What is the minimum viable period between revised deliverability guidance and LT2 Window 2 proposal submission?
- Is there a general concern with the timing of municipal elections with respect to the Window 2 Proposal Submission Deadline?

There is a concern about the impact of municipal elections with respect to Window 2. A certain amount of months before the election, municipal councils will not vote on major items, which would include municipal support resolutions, that could bind future councils. This period can start as early as May once nominations open and extend to just after the municipal election up to when a council is sworn in for their new term in November.

Boralex is also concerned about projects and energy becoming local election issues, spreading misinformation and generating negative public perceptions to all types of energy generation and capacity technologies, and related provincial policy. We foresee this problem occurring particularly in southern Ontario.

General Comments/Feedback