

Feedback Form

Small Hydro Program Design, March 2022

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To promote transparency, feedback submitted will be posted on the IESO webpage unless otherwise requested by the sender.

Following the Small Hydro Program Design Outreach Session, the Independent Electricity System Operator (IESO) is seeking feedback from stakeholders on the following discussed items. Background information related to these feedback requests can be found in the presentation, which can be accessed from the [engagement web page](#).

Please submit feedback to engagement@ieso.ca by Tuesday, April 19th. If you wish to provide confidential feedback, please mark the document "Confidential". Otherwise, to promote transparency, feedback that is not marked "Confidential" will be posted on the engagement webpage.

Small Hydro Program – Engagement Approach

Topic	Feedback
What questions or feedback do you have about the IESO’s engagement approach?	Innergex appreciates the opportunity to provide input on the Small Hydro Program and looks forwards to continuing to be involved as details are developed. We also support the IESO building consideration of assets beyond the scope of the initial Program (those with contracts expiring post-2030 and with an installed capacity over 10 MW) into this consultation. We encourage the IESO to incorporate and consider all relevant materials, case studies and information that has been provided by the Ontario Waterpower Association (OWA) in the recent past, especially as it related to the establishment of the electricity and non-electricity benefits of these facilities, so that stakeholders aren’t responsible for regenerating materials for the purpose of this engagement.

Small Hydro Program – Principles & Goals

Topic	Feedback
What questions or feedback do you have on the design goals for the program?	The IESO has proposed that the Program Design Foundation is the “Resource Adequacy Framework” and that Programs are a mechanism “to sustain investments in assets, resources and businesses that can help meet electricity and non-electricity objectives”. However, it is unclear how consideration of “non-electricity benefits” have been factored in to the design goals presented. Within the Resource Adequacy Framework, the “Long Term Commitment” is described as a mechanism to “secure resources with very long forward periods or commitments, SUCH AS new-build facilities”. As outlined further herein, capital investment in the existing waterpower assets to be included in the Small Hydro Program also requires very long forward periods or commitments and as such, concepts including contract length (>10 years) and bundled

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	contracts (capacity and energy) should be considered for the Program.
<p>What questions or feedback do you have on the principles that the design is founded on? (focus on value, promote competition, incent market-driven operations and allow for flexibility in future system operation).</p>	<p>1. Focus on value – As the province moves into a period of growing electricity system needs (per the 2022 Annual Acquisition Report), both baseload and peaking generation will have increasing value in Ontario’s electricity system, as will stability of generation, geographic diversity, ancillary benefits. The concept of “value” should also recognize the substantial non-electricity benefits that small hydro facilities provide to Ontario, including water management, stable long-term revenues for Indigenous and rural communities, and clean electricity (which is of increasing importance in the context of the federal government’s plans to regulate a national clean electricity standard and achieve net-zero emissions electricity by 2035). 2. Promote competition – Competition is but one means to achieve the IESO’s (and government’s) objective of an affordable, reliable, sustainable electricity system. This principle should also consider the value of securing perpetual assets for the long-term as a hedge against future potential upward pressure on prices. 3. Incent market-driven operations – Many small hydro facilities were designed to operate in a manner decades prior to the introduction of a market and are subject to regulatory restrictions that were specifically introduced at market opening to restrict responses to market signals in order to achieve non-electricity objectives associated with water management (environmental, public safety, etc.). The market alone is not the driver for facility operation, and should not be if Ontario wishes to preserve the multitude of benefits that small hydro facilities provide. 4. Allow for flexibility – This has been presented by the IESO as a desire to have optionality with respect to future resource acquisition and a rationale for shorter term commitments. In</p>

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	many ways, this is inconsistent with the reality of long lifespan assets and the capital investment requirements that support their continued operation.

Small Hydro Program – Design Concepts

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<p>What questions or feedback do you have relating to Design Concept #1: Capacity Payments</p>	<p>The IESO has suggested that capacity payments will be designed to sustain ongoing investment in these facilities. This would necessitate that such payments be at least equivalent to the revenues derived from current contracts, which are based on energy. It is our view that the proposed approach: 1. Adds unnecessary complexity and uncertainty (contracts based on energy are inconsistent with the history, design and operations of small hydro); 2. Does not reflect the suite of values that small hydro projects contribute to the electricity system; 3. Does not recognize that current contract structures reflect how these facilities were designed, operate and can be improved (e.g. financial incentives for upgrades, refurbishments and expansions); and 4. Does not recognize constraints on current facility operations (e.g. water flows for some facilities are controlled by Parks Canada). It is also difficult to assess the concept of capacity payments without a clear definition of how a capacity price will be determined. The IESO has suggested some multiplier of either the results of a capacity auction or mid-term RFP, with no indication of the periodicity of such determination or whether the determination would be based on nameplate or some other metric. To ensure the continued operation of small hydro facilities, a capacity payment framework would need to ensure there are limited risks to receiving the fixed capacity payment at a level consistent with the energy structure of current contracts.</p>

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<p>What questions or feedback do you have relating to Design Concept #2: Dispatchability</p>	<p>The approach seems to suggest that flexibility and dispatchability are equivalent. This is not the case. All existing contracts have provisions which encourage the management of water (within regulatory restrictions) to produce energy to match typical daily and weekly demand curves. While the IESO has suggested that “dispatchability” is an option, it has also been suggested that non-dispatchable facilities are of “less value”. This is not the case, particularly as the province enters a period of supply shortfall. The vast majority of small hydro facilities are run of river, with regulatory constraints to achieve non-electricity objectives. Moreover, they generally operate as “cascade” river systems, with co-dependencies between facilities and often with water management under the control of non-hydro infrastructure (MNDMNRF, Conservation Authorities, Parks Canada). Dispatching these facilities adds risk to plant operations (e.g. more frequent stops and starts), flood control, the environment and notably, public safety.</p>
<p>Is your facility currently dispatchable?</p>	<p>We are a run-of-river facility with regulatory constraints (Parks Canada) to achieve water management objectives.</p>
<p>If your facility is currently not dispatchable, is there an interest in becoming dispatchable? What would be required to become dispatchable and what are the barriers (if any)?</p>	<p>Water management requirements prevent us from being dispatchable. The addition of energy storage could allow the facility to become somewhat dispatchable, but the technology and costs of this option are not currently viable.</p>
<p>What questions or feedback do you have relating to Design Concept #3: Tranching</p>	<p>The concept of tranching, depending on design, may have merit (for example, fixed costs for smaller facilities are disproportionate). At least one current program already differentiates based on size and connection (Dx/Tx) – a concept that could be applicable to future contracts. Regardless of tranches, the Program should provide a clear base price, as small</p>

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	hydro facilities require revenue certainty to sustain investments in these perpetual assets.
What characteristics would you consider to be defining features of your operations or facilities as it relates to potential criteria for contract payments?	This is a question already included in the facility-specific form. Revenue quantity and certainty need to be preserved to maintain existing infrastructure and energy delivery.
What questions or feedback do you have relating to Design Concept #4: Investment?	Small hydro facilities are perpetual assets with long investment horizons. Capital investment planning for hydro facilities is decades long, and the concept of “end of life” is not applicable to hydro, regardless of facility age. The duration of contracts and the rates granted will have an impact on future investments in existing facilities (longer contracts will provide more guarantee for our financial partners), as well as sending a signal to those considering future investments in Ontario’s electricity system. Any type of investment mechanism (i.e., contract) needs to be designed such that it is financeable and avoids unnecessary complexity which adds risk and cost. The Program should also support facility upgrades so that the contributions of existing assets to the electricity system continue to be efficient and maximized over time.
Have you considered adding an on-site battery to your facility? If so, what stage of development are you in? Is there potential for Indigenous and/or community ownership?	This is a question already included in the facility-specific form and responses should be confidential.
Are you aware of your sustaining capital requirements over the next 5 years?	Yes we are.
Have you considered any upgrades or capital projects at your facility? If so, what stage of development are you in? Is there potential for Indigenous and/or community ownership?	This is a question already included in the facility-specific form and responses should be confidential. In general, facility upgrades should be enabled through the Program to maximize the value of existing assets, regardless of ownership structure. Current contracts include proven mechanisms for incenting and enabling facility expansion/efficiency and should be

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	<p>carried forward in the Program. Indigenous and community ownership could be enabled through price adders to recognize the non-electricity values of these facilities. Adders could be covered by the tax base to protect rate payer interests and not increase the GAM for these non-electricity benefits.</p>
<p>What questions or feedback do you have relating to Design Concept #5: Contract Length?</p>	<p>As noted previously, capital investment in the waterpower assets to be included in the Program require very long forward periods or commitments. Owners require revenue certainty now to continue to invest in these assets and ratepayers will derive greater value from longer terms. As such, long-term commitment concepts including contract length (>10 years) and bundled contracts (capacity and energy) should be considered for the Program. This approach could apply to the Program to be designed for the >10MW facilities as well. Those facilities with contracts expiring post 2030 would become eligible for new contracts on a rolling basis (i.e. in 2023, facilities with contracts expiring in 2031 would become eligible, etc.).</p>
<p>What questions or feedback do you have relating to a program review in 2026?</p>	<p>The IESO has suggested that the 2026 review is premised on consideration of the potential outcomes of the Market Renewal Program (MRP). We anticipate that the Small Hydro Program can be developed in line with the MRP given that the detailed design for that initiative is already complete, but if the outcomes of the MRP do require changes to the Small Hydro Program design, this should not impact any contracts under the Program that are already signed. Any future changes to the Small Hydro Program should include consideration of the rationale for the Program's design today, as we expect that the fundamental values that this Program is designed to support will not have changed due to the outcomes of the MRP.</p>

Small Hydro Program – Other Design Ideas

Topic	Feedback
Are there any other design ideas for the development of a Small Hydro Program that should be considered?	The current contractual frameworks for waterpower assets were deliberately and specifically designed by the IESO to reflect the values and contributions of these perpetual assets. The focus of the Small Hydro Program should be on providing value for ratepayers and ensuring a reasonable revenue stream for facilities to continue operating. Collectively, these facilities represent a small proportion of the market and an even smaller proportion of the province’s total electricity supply. Devising a complex approach to re-contracting serves neither the ratepayer, the taxpayer (i.e. water management benefits), or the facility owners and operators well.

Small Hydro Program – Challenges

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Are there challenges that you foresee in transitioning to a new contract structure? What are these challenges?	Provided that the industry’s recommendations are accepted, transition should not be an issue.
If you expect any challenges in transitioning to a new contract structure, do you have any suggestions on how the IESO can assist in the transition or reduce any anticipated barriers?	Click or tap here to enter text.

General Comments/Feedback

The OWA has provided the IESO with detailed information on “Capital Investment Planning” for waterpower facilities in previous submissions. All of the assets to be included in the initial and subsequent Program have sustaining capital requirements that extend over the next 20+ years. Ongoing capital investment in waterpower facilities over their life-span is substantial and must be planned well in advance. To properly plan for such capital investments, revenue certainty is required

for at least 15-20 years and preferably longer. In short – longer term revenue security for these perpetual assets provides the best value to the both the ratepayer and the taxpayer. The form and time frame for capital investments in waterpower facilities over their lives includes: (1) minor maintenance; (2) major maintenance such as generator rewinds, turbine refurbishments & structural repairs, upkeep of dams, spillways and other water regulating equipment linked to the non-electricity benefits of water management; (3) regulatory upgrades to conform with new regulations or best management practices such as dam safety & public safety; (4) optimization projects to restore or enhance plant efficiency & production over time; and (5) significant plant upgrades including redevelopment or expansion to ensure these plants continue to serve their communities and the province into the future.

Importantly, owners and financiers of these facilities must consider the impact of future capex in their revenue rates today in order to plan for the facility's maintenance and operation into the future. This is usually done by site owners and lenders whereby they calculate all future capital and operational expenditures and determine an amount that needs to be set aside today in a Major Maintenance Reserve account that accumulates and disperses monies based on the timing requirements of the various major maintenance items. As many facility owners have large capex items to manage, these set-aside amounts can be substantial, so a power price rate based on simply annual opex and capex would not capture those costs that are expected to occur in future years.

As noted in the Socioeconomic Report Commissioned by the Ontario Waterpower Association in 2021, "OWA's survey of power generating members forecast that investment in existing waterpower facilities over the next five years (2021-2025) could top \$2.4 billion dollars and contribution to the Consolidated Revenue Fund (CRF) in excess of \$600 million dollars. Economic modelling demonstrates that these investments are an important part of the Province of Ontario's economy. As Ontario renews its electricity market structure, designs its resource acquisition and re-acquisition framework, and prepares to improve the approach to Long Term Energy Planning, it is imperative that the investment signals and time horizons for these multi-generational assets be recognized and incorporated."

We would also highlight the importance of small hydro facilities for Indigenous and rural communities across Ontario. The development of renewable generation has in many cases been led by or in partnership with Indigenous communities as a source of stable, long-term own-source revenues where alternative options for economic development may be limited. The revenues derived from these projects are critical to the community, funding investments in education, health, social initiatives, and infrastructure, as well as providing direct employment and contracting opportunities. Critically, these are ongoing revenues that the community can rely on as opposed to the uncertainty of government supports. The economic and social benefits of these facilities extend beyond the local community as revenues from the project are spent on local goods and services. The Small Hydro Program should ensure that these benefits are preserved and that these facilities can continue to provide energy, environmental, social, and economic benefits to Ontario for the long term.