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# Agenda

1. Introductions and Background
2. DER Challenges in Ontario
3. Stakeholder feedback and IESO responses
4. 2021 IESO-OEB Joint Targeted Call details
5. Feedback questions

# The Grid Innovation Fund

Enables IESO to evaluate potential of novel and innovative solutions to increase electricity reliability, affordability and customer choice.

- \$9.5M/year for projects
- Open to utilities, for-profit, non-profit and institutional entities
- 230 projects funded since 2005
- Investment in projects no more than three years in length, and funds up to a specified percentage of project costs, depending on project type

# Successful Grid Innovation Fund Projects - Examples

**2019 Indoor Agriculture Targeted Call** sought demand-side solutions that addressed issues around electricity demand from the indoor agriculture sector

**York Region Non-Wires Alternative** Local Capacity Auction achieved 10 MW target (34 MW registered) in Nov 2020 with DER participating in Local Energy Auctions throughout May-October 2021 to support both local and system needs

**Freezer Temperature Modification** resulted in amendments to a provincial regulation under the Health Protection and Promotion Act, 1990, which removed the maximum freezer set-point temperature requirement (-18 °C) for frozen foods, realizing persistent electricity savings province-wide

# The Innovation Sandbox

A fast, accessible way for the OEB to support innovators interested in testing new activities, services, and business models.

- The Innovation Sandbox is designed to support companies interested in innovative projects that show clear potential for benefit to consumers
- The Sandbox is open to natural gas distributors, electricity distributors, and other energy sector entities

# The Innovation Sandbox (continued)

The Innovation Sandbox offers different types of support:

- An informal Information Service where innovators can speak to OEB staff about questions related to innovative ideas
- Customized regulatory guidance from OEB staff in relation to an innovative pilot project
- The ability for innovators to ask for temporary relief from a regulatory requirement
- Liaison for further assistance

# DER Challenges in Ontario

1. 1000 MW\* of expiring DER contracts are expected over the next decade
2. DERs are being installed by residential, commercial and industrial customers independently of distribution or bulk system needs
3. Uncertainty around the value that DERs can provide at both the wholesale market level and distribution level and the tools required to unlock that value
4. The technical and operational requirements to fully integrate DERs across the wholesale market level and distribution level are not fully known

\*Section 2.3 Exploring Expanded DER Participation in the IESO-Administered Markets - Part 2



# Problem Statement

- How do we maximize the system-wide and ratepayer value that DERs can provide to Ontario's electricity sector and its customers by reliably integrating these resources across both wholesale and distribution system levels?

# 2021 IESO-OEB Joint Targeted Call

- Outcome of requests made by stakeholders for the IESO and the OEB to collaborate on issues that cut across the mandate of both organizations and to provide one touchpoint that stakeholders can access for information and support
- The IESO and OEB are collaborating to discover (i.e., test and evaluate) how to derive value from DERs/DERAs while maintaining or improving reliability
- Leverages the expertise and financial support that the Grid Innovation Fund and OEB Innovation Sandbox can provide

# IESO June Engagement Days – Input Was Sought

IESO & OEB held a stakeholder engagement session on June 22, 2021 soliciting feedback on the following questions:

- Given the problem statement, recommendations, and opportunity presented today, what barriers to DER integration are best suited to be addressed through the joint call?
- Which kinds of projects designed to address these barriers would be expected to benefit from support available through the OEB Innovation Sandbox?

# Stakeholder Feedback from June Meeting

Feedback indicated the following items are of importance to stakeholders:

- Not only individual DERs, but DER Aggregations (DERAs) have the ability to provide Capacity, Energy, ancillary services & T-D coordination and interoperability requirements
- More strategic partnerships between distributors, aggregators and service providers are needed to successfully leverage DERs/DERAs
- There is interest in valuing the capabilities of DERs/DERAs with respect to unlocking revenue streams

# Objectives of the Joint Call

1. Demonstrate the potential for cost-effective services that DERs/DERAs can provide to consumers, distribution systems and the IESO-controlled grid to unlock ratepayer cost savings
2. Test the effectiveness of DERs/DERAs to defer or eliminate the need for traditional electricity infrastructure (e.g., poles and wires) while maintaining or improving reliability

## Objectives of the Joint Call (continued)

3. Test and demonstrate the dependability of DER/DERAs related to providing services (e.g., in the areas of real-time dispatching, telemetry, metering) for the integrated electricity system
4. Support the development of innovative arrangements that test new activities or business models where regulatory requirements may prevent or impede those arrangements from proceeding

# Project Eligibility

The IESO and OEB are interested in projects that leverage DERs/DERAs and associated technologies to provide services for the wholesale market and the distribution system while maintaining reliability and providing ratepayer value. This could include projects that test:

- Coordination between IESO real-time dispatch instructions (for energy and ancillary services) and similar instructions at the distribution level
- How to get visibility into DERs on the system for forecasting and real-time awareness (telemetry)

## Project Eligibility (continued)

- Metering, monitoring and control solutions for settlement of wholesale and distribution level services
- Innovative arrangements for project proponents to test new activities, services or business models that are not present in the current regulatory environment or contemplated by the current regulatory framework (further detail provided in appendix under Regulatory Innovation)

To that end, Joint Targeted Call applications must meet requirements associated with three eligibility categories: 1) Applicant eligibility 2) Project type and 3) Project category



# Applicant Eligibility

- Proposals are welcome from non-profit and for-profit incorporated entities, including but not limited to electricity distributors, electricity transmitters, technology companies, consulting firms, industry associations, educational institutions, and public sector organizations
- Funding is not provided to individuals, including incorporated individuals and sole proprietorships

## Project Type

- The IESO and OEB will be seeking projects that demonstrate strategic opportunities which are large-scale piloting of strategically important technologies, services, practices, or program approaches that cannot be effectively piloted at a smaller scale and must show the potential of scalability within the Ontario electricity landscape
- Project proposals must include a minimum of three strategic partners including the applicant

## Project Type (continued)

In addition to being strategic in scope, projects must include activities related to one or more of the following project types:

- Emerging Technology Demonstration
- Strategic Research
- Tool
- Program

Applicants are encouraged to include two or more sub-categories as part of their project scope. This is reflected in the evaluation criteria.

# Project Category

Projects proposed for the joint call must also address one of the following categories:

- System Integration
- Demand Reduction
- Efficient Electrification

# Project Funding

- The IESO will provide funding up to a maximum of 50% of project costs. Proponent and partner contributions must be at least 25% in cash to the total project value
- The minimum funding request from the IESO for any project is \$1M
- All funds and in-kind contributions must be auditable
- While other non-IESO sources of funding are encouraged, duplicate funding of IESO-supported tasks is not permitted and projects cannot receive funding from other IESO-administered programs such as the Save on Energy programs, unless approved by the IESO

# Project Evaluation Criteria

## Project will be evaluated on the following criteria:

|                                                 |           |
|-------------------------------------------------|-----------|
| Potential Impact                                | 10 points |
| Market Capability Building Impact               | 5 points  |
| Market, program or technical advance            | 10 points |
| Project Team & Partners                         | 15 points |
| Project funding                                 | 10 points |
| Project purpose and outcomes                    | 5 points  |
| Project Design                                  | 15 points |
| Wholesale Market and Distribution Participation | 15 points |
| Regulatory Innovation                           | 15 points |

# Support, Review Process & Approval

- GIF team, along with the OEB Innovation Sandbox team and any potential external subject matter experts, will form the Business and Technical Review Committee to review and score each submission.
- Applicants with highly ranked applications will be provided with the opportunity to work with the Review Committee to refine their applications to address any questions and/or feedback.
- Once questions and/or clarifications have been addressed via an updated application, the Review Committee will bring high ranking applications forward for executive approval in Q1 2022. Applicants will be notified of the outcome end of Q1 2022.

# Timelines – Next Steps

IESO & OEB Stakeholder Engagement (August 25)

Application Guideline and Proposal Template  
Posted to IESO Website (October 6)

Application Intake Window Opens (November 1 –  
November 30)

IESO & OEB Evaluate Submissions and Select  
Projects for Approval (December – February)

Successful Applicants Notified (March 2022)



# Project Support

Potential applicants are strongly encouraged to contact the Grid Innovation Fund team to discuss their project prior to completing a submission to the fund. The Grid Innovation Fund team along with the OEB Innovation Sandbox team will work with potential applicants to answer any questions related to their project.

# Feedback Questions

1. Are the criteria sufficiently clear?
2. Are there any other considerations we should include as part of the Project Evaluation Criteria when evaluating submissions? If so, what additional considerations should be included?
3. Do you have resources with flexible capacity that cannot be used today due to existing barriers? If so, how much flexible capacity is available?

Please use the feedback form found under the August 25 entry on the [Distributed Energy Resources Roadmap webpage](#) to provide feedback and send to [engagement@ieso.ca](mailto:engagement@ieso.ca) by September 16, 2021

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# Thank You

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# Appendix

# Sub-Categories that fall within Strategic Opportunities stream

|                                   |                                                                                                                                                                                                                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Emerging Technology Demonstration | Demonstration, measurement and verification of emerging technologies. The project must test a near-commercial technology in a real-world environment. Projects must have a measurement and verification component to determine cost effectiveness, electricity savings potential |
| Strategic Research                | Research study identifying barriers in metering and settlement of services provided to the wholesale market and/or distribution systems and describing solutions to overcome those barriers.                                                                                     |

## Sub-Categories that fall within Strategic Opportunities stream (continued)

|         |                                                                                                                                                                                                                                                                                                                                    |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tool    | Development and assessment of a new energy management tool or approach demonstrating grid reliability services for wholesale market and distribution services (e.g., dispatching systems, telemetry services.)                                                                                                                     |
| Program | Testing of a new program or specific program element that provides benefits to the wholesale market and distribution system The project must test the concept in a real-world environment and involve suitable partners. To determine cost-effectiveness, projects must have an evaluation, measurement and verification component |

# Project Categories

Projects proposed for the joint call must also address one of the following categories:

|                    |                                                                                                                                                                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Integration | System integration refers to the efficient and effective integration of DERs/DERAs into the electricity such that the DERs are able to participate in wholesale markets and also provide services to the distribution system.                                                           |
| Load Reduction     | Load reduction occurs when customers elect to switch away from using electricity to using another fuel source, such as geothermal or solar heating or cooling. Note that applications that would have a net-positive greenhouse gas emissions impact are ineligible for the joint call. |

## Project Categories (continued)

### Demand Reduction

For the purposes of this joint call, demand reduction includes the following sub-categories:

**Demand Response:** Demand response occurs when customers reduce their electricity demand at certain times, such as during peak use hours (peak clipping), or shift some of their demand to off-peak hours (peak shifting); and

**Load Shifting:** Load shifting occurs when electricity consumption is shifted to another time (typically, when load is shifted from on-peak to off-peak periods). This can be accomplished in many ways, including by making use of generation and storage assets.



## Project Categories (continued part 2)

### Efficient Electrification

Efficient Electrification: Efficient electrification occurs when customers convert to electricity as a fuel source for equipment, processes, or buildings in such a way that reduces overall consumption and/or peak demand impacts. This category excludes vehicle efficiency improvements. There may be a better way to say this but we're trying to avoid applications that specifically makes vehicles more efficient rather than learning from their capabilities should be all be electric.

Note: Heterogeneous aggregations can include a combination of the above subcategories and can also include resources that inject (e.g., storage and variable generation).

# Project Evaluation

| Category                             | Evaluation Criteria                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Potential Impact                     | Significance of ratepayer cost reduction potential                                                                                                                                      |
| Market Capability Building Impact    | The project builds the skills and knowledge required by the market to accelerate the adoption of cost-effective DER solutions to meet the needs of customers and the electricity system |
| Market, program or technical advance | The project is testing a novel approach and advances the “state of the art” in Ontario                                                                                                  |

## Project Evaluation Criteria (continued)

| Category                | Evaluation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Team & Partners | <p>The project team has the qualifications and experience required to execute a large-scale, strategic project. The project team provides evidence of appropriate partnerships, including a utility partner where appropriate. A minimum of three (3) partners (including lead applicant) have been listed and Letters of Support have been provided. Projects with a greater number of highly qualified, experienced and committed partners will be given greater points (due to the capacity building aspects that such projects offer).</p> |

## Project Evaluation Criteria (continued part 2)

| Category        | Evaluation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project funding | <p>The project has secured funding additional to the funding requested from the IESO that is required to complete the project. The overall funding proposal satisfies IESO funding requirements (minimum 25% cash contributions from lead applicant and partners towards the total project value) and appropriately allocates risk between the proponent, partners and the IESO. The lead applicant is making a cash contribution toward the project. The financial ask of the IESO is a minimum of \$1 million. The IESO's funding will not account for any more than 50% of total project costs.</p> |

## Project Evaluation Criteria (continued part 3)

| Category                     | Evaluation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project purpose and outcomes | The project outcomes are aligned with the high-level objectives of this joint call and have the potential to influence regulatory evolution and wholesale market participation. The project timeline allows for outcomes to be made available so that the IESO and OEB may use the results for future planning initiatives.                                                                                                        |
| Project design               | The project's design is reasonable and likely to meet the stated objectives. The project satisfies the criteria of section 2. The scope, work plan and scheduled tasks are contained in a clear and logical framework that supports successful completion of the project (for example, any DER assets or other resources included in the project scope have already been commissioned or will be commissioned in the near future). |

## Project Evaluation Criteria (new categories)

The following are two new criteria established for this year's targeted call:

| Category                                        | Evaluation Criteria                                                                                                                                                                                                                                                                    |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wholesale Market and Distribution Participation | The project demonstrates the prospect for mutual benefit to both the wholesale market and distribution systems and coordination between these systems. Projects that can test solutions under multiple project categories in Section 2.2 of this Guide will be awarded greater points. |

## Project Evaluation Criteria (new categories part 2)

| Category              | Evaluation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory Innovation | <p>The project includes innovative arrangements that test new activities, services or business models for project proponents that are not currently present in the current regulatory environment or contemplated in the current regulatory framework. The application identifies regulatory requirements that may prevent or impede the innovative arrangements, activities or business models being proposed. Where regulatory barriers are identified, the application identifies the Sandbox support required to address regulatory barriers to implementation.</p> |

# Regulatory Innovation

The Joint Targeted Call is interested in projects that propose innovative business models, activities, and services for the project proponents involved.

As such, Project Evaluation Criteria reflect a preference for projects which include:

- Innovative arrangements for project proponents to test new activities, services or business models that are not present in the current regulatory environment or may appear not to be accommodated or contemplated by the current regulatory framework;



## Regulatory Innovation (continued)

- Identification of regulatory requirements that might prevent or impede the innovative arrangements, activities or business models being proposed; and
- Identification of Sandbox support required to address regulatory barriers to implementation

Note: Sandbox support may include customized guidance and OEB staff assistance in pursuing temporary relief from regulatory requirements. Please note that the OEB generally cannot grant exemptions from statutes or regulations.