



Modernizing Regulatory Engagement to Support Innovation

Tools for Consideration in Newfoundland & Labrador

December 2025





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1. Introduction

Background

- The world is moving to reduce greenhouse gas emissions with many jurisdictions having committed to **economy-wide net zero by 2050**. Achieving this goal will require major transformations of energy systems worldwide.
- Legacy regulatory frameworks and processes around the world will be challenged by this transformation. Globally, efforts are underway to **implement regulatory innovations** that will address key barriers.
- In the Newfoundland and Labrador context, this effort means **further decarbonization of the electricity system** and enabling conditions which allow for the export of clean energy.
- This report aims to contribute to increasing the awareness on avenues to support regulatory innovation within Newfoundland and Labrador.

Innovation in Newfoundland and Labrador

Based on feedback from econext and project stakeholders, we are using the following working definition:

*Innovation is the **application of new ideas and new approaches**. Innovation can be achieved through the adoption of new and/or different processes or technologies.*

For this work, the intended **focus is on regulatory innovation**. This includes new or different processes which support increased RD&D (and, ultimately, adoption).

There have been **efforts to enhance innovation in NL**, including pilots and exploration by individual actors and explorations within the capital spending cap.

However, efforts are driven by federal and provincial funding opportunities, rather than based on a **systematic innovation agenda**. Further, there is a **range of barriers** to innovation in NL today.

NL can consider program examples from across North America to **inform its approach** to innovation.

Key Barriers to Innovation

Several key barriers exist to innovation¹ that can be categorized as cultural/organizational, regulatory, and financial. **Limited and overly formalized stakeholder collaboration is the primary barrier to innovation** in Newfoundland identified by econext.

Category	Barrier	Leading barrier
Cultural & Organizational	Formal stakeholder collaboration: Collaboration and communication amongst key stakeholders (utilities, regulators, industry) can be limited and/or overly formalized	<input checked="" type="checkbox"/>
	Regulatory capacity & knowledge constraints: Limited pool of expertise in NL on the electricity system and regulatory framework decision-making processes	<input checked="" type="checkbox"/>
	Innovation capacity & knowledge constraints: Innovation not considered a priority or viable tool/solution given other utility considerations and priorities (e.g., safety, reliability, costs, internal expertise)	
Regulatory	Capital Spending Cap: Utilities in NL have few tools to pursue innovation. For example, there is a capital spending cap where utilities must seek regulatory approval for any capital expenditure over \$750k, which limits the ability to invest in RD&D and innovation	<input checked="" type="checkbox"/>
	Pace of regulatory review: Regulatory review timelines are not conducive to innovation	
	Cost-of-service regulation: Cost-of-service regulation and cost recovery practices can disincentivize innovation. Cost must be recovered from ratepayers and innovation spending can come with increased perceived risk that can be challenging for approval.	
Financial	Limited innovation budgets: Utilities often have limited budgets dedicated to innovation (regardless of spending cap)	

Legend: Primary leading barrier in NL; Other leading barriers in NL

1. The scan focused on solutions and did not include a comprehensive, NL-focused barrier evaluation. Barriers were identified by econext, as well as from Dunsky's key resources review. Therefore, this list covers leading barriers but is not intended to be exhaustive.

Primary Barrier: **Formal Stakeholder Collaboration**

Collaboration and communication is an important preamble for innovation.

Similar to other jurisdictions, current channels in NL **require formal processes**. For example, an application proceeding includes legal and technical reviews that, by their nature, limit open discussion and the ability to pivot. These communication channels may not always be the most efficient to enable collaboration or exploration of novel ideas or projects.

Exploring informal communication opportunities (highlighted in the tools) can enable the early, uncertain discussions that supports innovation. This report is **focused on addressing this primary barrier**.



Scope & Objectives

Scope:

econext engaged Dunsky to research and synthesize potential options to further enable innovation through and within in the NL electricity regulatory frameworks.

This regulatory innovation scan covered:

- **Electricity** regulation (not other fuels)
- Solutions can be developed/applied within the **existing EUB framework / legislation** (not considering changes to current regulatory structure)

Objectives:

- **Define and compare tools** that could enable additional regulatory innovation within the NL electricity system.
- Document **example programs and processes** for each tool from jurisdictions across Canada and the U.S.

Approach

To complete the regulatory innovation scan, we leveraged external sources and internal experience, including:

- Input from econext on **current barriers**.
- **A review of research reports** and resources analyzing current trends and solutions in regulatory innovation.
- Based on research reports review and internal expertise, synthesizing the concepts into **tools**.
- For each tool, **jurisdictions were selected for review** based on Dunsky's expertise and alignment with econext's interest in Atlantic Canadian and Canadian jurisdictions.

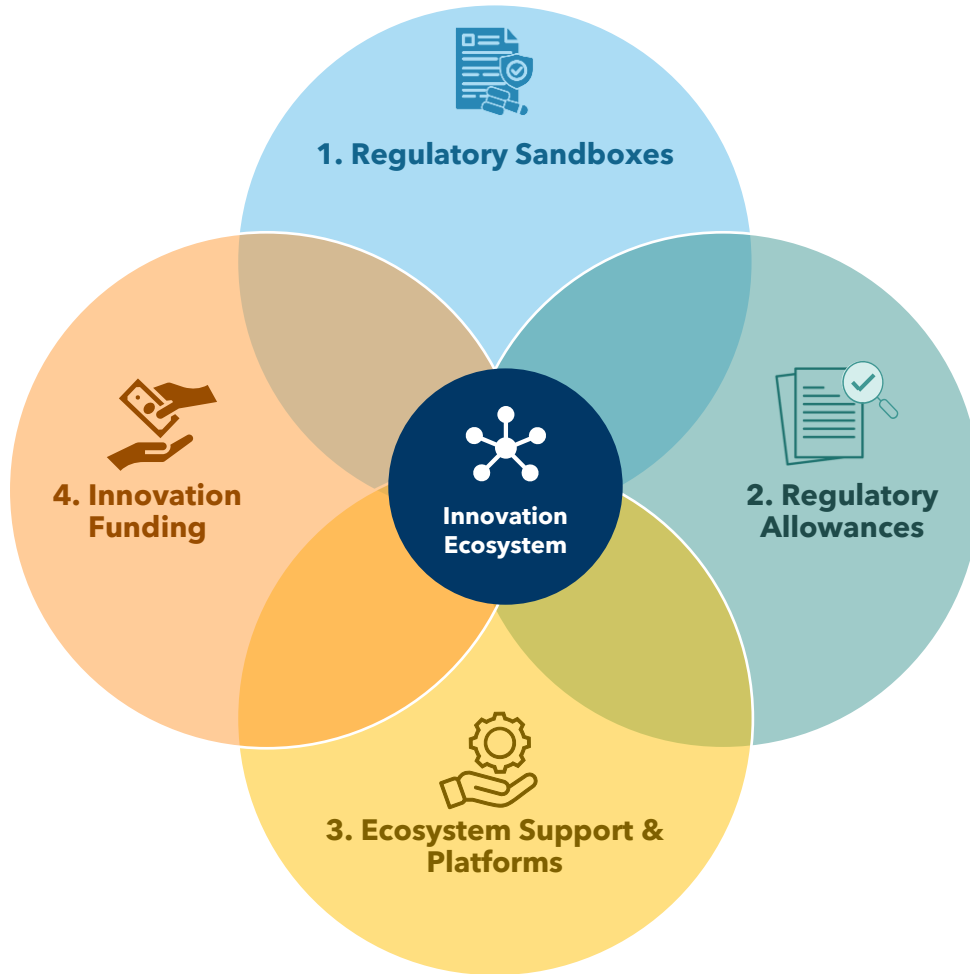
Key Resources:

- Berkeley Lab: [Regulatory Sandboxes and Other Processes to Expedite Utility Adoption of Advanced Grid Technologies](#)
- Guidehouse: [Electricity Regulation for a Customer-Centric Future](#)
- NRCan: [Navigating Barriers to Utility Investment in Grid Modernization](#)

The full list of resources reviewed in the scan is included in the Appendix.

2. Tools to Support Regulatory Innovation

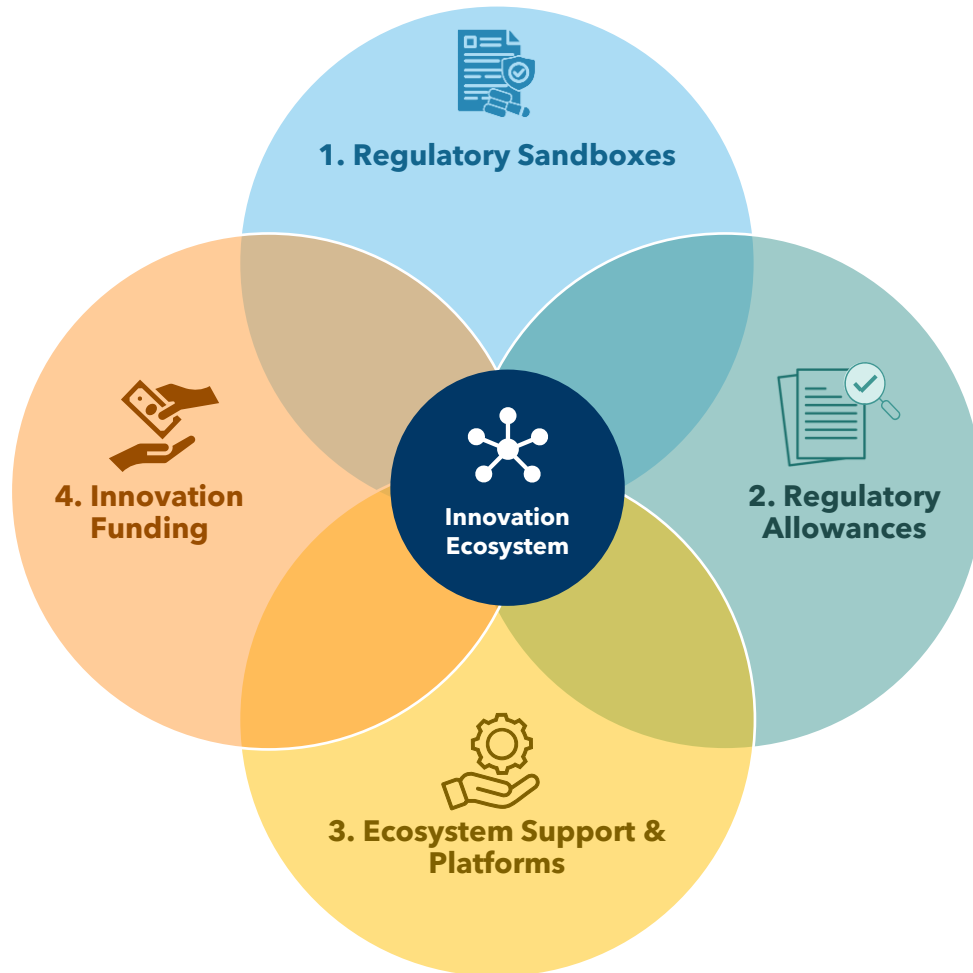
Overview of Tools



Based on our research, we identified **four tools** that summarize the efforts across jurisdictions to address barriers to innovation.

These tools are **systemizing procedural improvements**. These improvements can take a range of forms, from minor changes in existing systems or newly established programs. These tools can provide inspiration for changes, small or large, in NL.

Four Tools: At A Glance



1. Regulatory Sandboxes

A sandbox offers opportunities to collaborate informally with regulators as well as limited regulatory waivers.

2. Regulatory Allowances

Allowances are tweaks to existing processes to facilitate testing innovation.

3. Ecosystem Support and Platforms

Facilitates collaboration and information sharing amongst utilities, regulators, and innovators through dedicated platforms or physical spaces such as laboratories for testing innovations

4. Innovation Funding

Provides funding for the research, development, and demonstration of new technologies. Often includes solicitations for specific innovations

The following slides will provide a deeper overview of each tool and case study from jurisdictions reviewed. The case studies highlight potential new elements or approaches for NL.

Note: Broader regulatory system changes, such as Performance-Based Regulation (PBR) mechanisms, are outside the scope of this report. They are, however, an important tool used by many jurisdictions to facilitate innovation.



Tool 1: Regulatory Sandboxes

A regulatory sandbox is a policy tool with two key features: (1) opportunities for **informal, collaborative engagement** between regulators and participants and (2) a structured environment that allows participants to **test new technologies or services under limited regulatory waivers**.

Key barriers that can be addressed



Formal stakeholder collaboration: Regulatory sandboxes typically include channels for participants to engage with regulators in an informal setting.



Lack of regulatory flexibility: Regulatory sandboxes provide limited waivers from standard rules, which allows increased flexibility to test innovative solutions and increases the speed at which innovations can be tested.



Regulatory capacity & knowledge constraints: Regulatory sandboxes help participants gain practical experience in navigating the regulatory system to test their innovations

Example programs (not exhaustive):

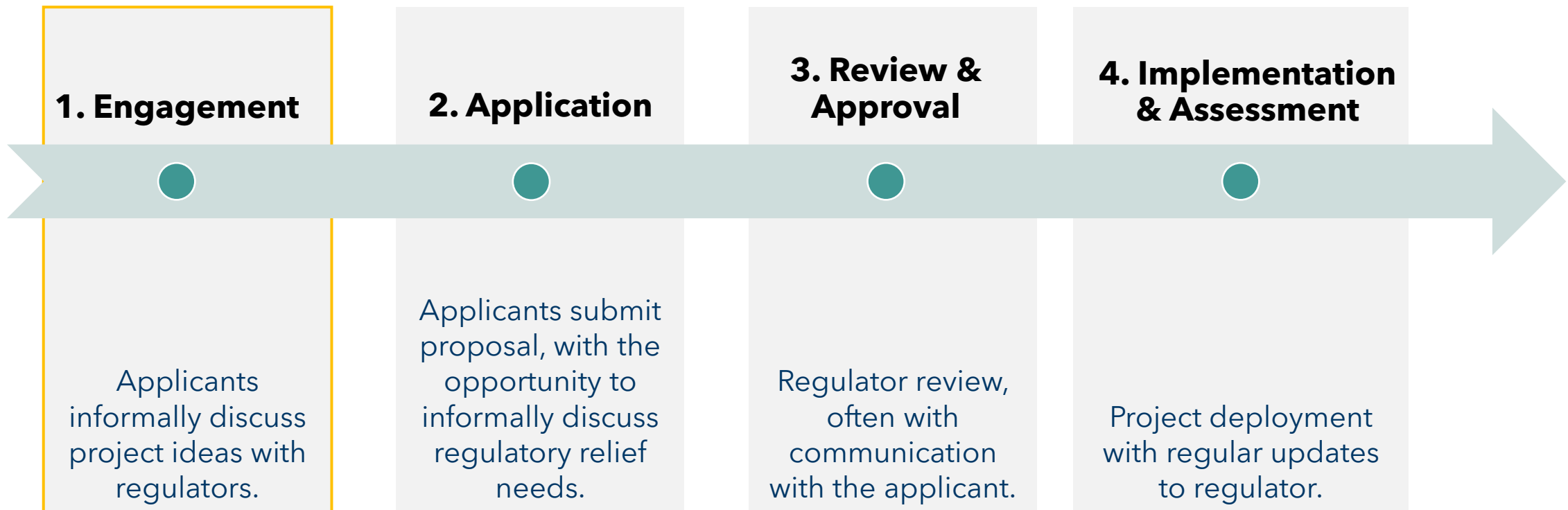
- **ON:** OEB Innovation Sandbox*
- **CT:** Innovative Energy Solutions Program*
- **NB:** NB Power Rate Design Learning Sandbox**

*Deep dive in following slides.



Regulatory Sandboxes: Typical Process

From our review, there are typically **four key stages** in regulatory sandboxes.



The engagement stage is a **new addition** to existing regulatory process that provides an **important opportunity** for early-stage, informal discussions. Communication then continues throughout to address information gaps and keep the regulator informed of project progress.

Case Study: OEB Innovation Sandbox

At a glance: OEB's Innovation Sandbox gives proponents temporary relief through a streamlined application process and provides a venue to engage in conversations with staff about innovative ideas



Type: Regulatory Sandbox

Administered by: Ontario Energy Board

Proponents: Local distribution companies (LDCs) and third-party innovators/developers

Key Services

OEB's Innovation Sandbox includes two key services:

- 1. Information Service:** Provides an avenue for innovators to directly speak to OEB staff about project ideas (at any stage of development) and how the OEB's regulations apply to innovators' ideas **[Engagement Stage]**
- 2. Project-Specific Support:** For a proposed pilot project, OEB staff can provide guidance tailored to the project and request temporary relief from a regulatory barrier (OEB only has authority to provide exemptions from OEB codes, rules, and licenses, and not statutes and regulations such as the Electricity Act) **[Application Stage]**

Other Services

The OEB also launched its **Innovation Sandbox Challenge** in 2023, which provided up to \$1.5M in funding to support six projects with themes around moving pilots to broader implementation and enhancing customers' understanding of the energy transition.

In 2021, the OEB Innovation Sandbox and IESO GIF held a **Joint Targeted Call** for projects that test the capabilities of DERs. Projects were awarded funding through GIF, and the OEB provided regulatory guidance through the Sandbox

Eligibility Criteria

Projects must: 1) Support customer value/protection; 2) Maintain or enhance reliability of electricity/natural gas systems; 3) Acknowledge net zero mandates/carbon pricing; 4) Have the potential to scale and achieve economic viability; 5) Identify an applicable regulatory barrier relevant to the OEB

Status

- **Key Services:** Most OEB inquiries come through the Information Service for funding guidance. The Sandbox has seen rising interest in DERs and grid modernization
- **Innovation Sandbox Challenge:** Six projects received a total of \$1.5M in funding, including initiatives on DER education, participation by low-income/Indigenous communities, and DSO functionality mapping.
- **Joint Targeted Call:** Seven projects were selected, five of which received regulatory support from the Sandbox. Included projects to test DER integration and load reduction opportunities
- **Innovation Sandbox 2.0:** In 2021, the OEB launched a consultation to inform the design of a renewed sandbox, resulting in several commitments to enhance its effectiveness (e.g. Sandbox Challenge, more open dialogue)



Case Study: Connecticut Innovation Energy Solutions Program

At a glance: The IES Program is a sandbox that aims to help identify, pilot, and scale innovative ideas. It provides up to \$5M per project and offers three pathways to participation: 1) Developer-lead, 2) EDC-lead, 3) Collaborative partnerships between developers and EDCs



Type: Regulatory Sandbox
Administered by: Current Energy Group (with oversight by CT PURA, the regulator)
Proponents: Electric distribution companies (EDCs), third-party innovators/developers

Program Structure

The IES program in Connecticut offers up to \$5M per project to support implementation over the course of a 12-18-month period. Selected participants collaborate with several key stakeholders, including PURA and the two largest utilities in the state (EDCs), and can be selected to deploy their solution at scale across the state (if specific criteria is met after implementation). Projects can be developer lead, EDC lead, or be collaborations between developers and EDCs.

The program includes two key "Innovation Support Services":

- 1. Information Service:** Provides an avenue for innovators to directly speak to PURA staff to discuss project ideas or ask questions about the regulatory process prior to submitting their proposals. **[Engagement Stage]**
- 2. Pilot Project Regulatory Support:** Tailored guidance or assistance for more developed projects to address regulatory uncertainty or request temporary relief from regulatory barriers. **[Application Stage]**

Eligibility Criteria

Projects must pass an initial set of criteria, which includes guardrails to ensure projects do not present an inappropriate competitive advantage to EDCs, do not increase costs to ratepayers, and advance statewide decarbonization goals. Key metrics, including economic benefits, cost-effectiveness, programmatic/market gaps, and equity, are also assessed at each phase, with the assessment increasing in stringency with each phase.

Status

- This process takes two years, and the **program operates in cycles, with a new cycle initiated annually**, featuring a different theme and a new cohort of projects.
- Cycle 1 projects** are related to demand-side flexibility (DER integration, grid modernization, and DR), and seven out of 21 proposed projects were selected to advance to Phase 3
- Cycle 2 projects** are related to electrification (EVs, heat pumps) and nine out of 25 proposed projects were selected to advance to Phase 3
- Cycle 3 project** proposals were submitted in early 2025, but projects have not yet been awarded



Ecosystem Innovation Approach

- This program also includes elements of other tools highlighted in this report: ecosystem support & platform and innovation fund.



Process Within Case Studies

Within these stages, the OEB Innovation Sandbox is relatively flexible and less prescriptive. The CT IES Program is more structured, with defined requirements and implementation timelines. **Both programs begin with the Engagement stage** to enable informal back-and-forth with proponents, a new channel that is outside of traditional legal and technical processes.

Stage	 OEB Innovation Sandbox	 CT Innovation Energy Solutions Program
1. Engagement	Applicant may meet with OEB staff to have an informal conversation about ideas about a specific pilot project or any other related questions.	Applicant may meet with PURA and/or the program administrator to have an informal conversation about ideas about a specific pilot project or any other related questions.
2. Application	For specific project proposals, applicants submit a form which includes regulatory relief required and alignment with the sandbox goals. They can also discuss regulatory relief requirements directly with the OEB.	Applicants submit an initial proposal via a simplified application process, which includes a summary of the project and its benefits. They can also discuss regulatory relief requirements directly with PURA.
3. Review and Approval	OEB staff reviews and flags any additional gaps or questions, and the applicant works with the OEB to answer remaining questions. Once the final version of the proposal is received, OEB provides a written response within 185 days.	A selected group of innovators are invited to develop a more comprehensive proposal, which includes several metrics. Selected projects are then deployed based on agreed-upon scope.
4. Implementation and Assessment	Projects are implemented and information on the project may be shared on the OEB Innovation Sandbox Dashboard, staff bulletins, and annual reports.	Progress reports are submitted as project is being implemented, and periodic meetings take place with PURA. Once project is complete, a final report is submitted, and the program administrator works with PURA to decide whether the project should be identified for deployment at scale.



Tool 2: Regulatory Allowances

Regulatory allowances revise existing processes to support innovation, such as through expediting pilot reviews and adjusting project justification criteria to accommodate innovative projects.

Key barriers that can be addressed



Pace of regulatory review: Regulatory allowances expedite pilot reviews and approvals, helping to increase the speed at which innovations can be tested



Capital spending cap: Regulatory allowances could adjust how pilot projects are justified, helping innovation projects proceed despite not meeting standard capital approval constraints



Regulatory capacity & knowledge constraints: Regulatory allowances help participants gain practical experience in navigating the regulatory system to test their innovations

Example programs (not exhaustive):

- **NS:** NSUARB Innovation Justification Criteria*
- **BC:** BC Hydro Expedited Review Framework*
- **HI:** Hawaii Innovation Pilot Framework
- **MI:** MSPC Expedited Pilot Approval Process (and [Directory](#))

*Deep dive in following slides.

** Proposal is currently with the regulator under [Matter 552](#).



Case Study: NSUARB Innovation Justification Criteria

At a glance: NSUARB uses Innovation Justification Criteria to approve innovation projects that are intended to enable testing before full-scale deployment, generate valuable insights, and support the development of future business cases. A set of sub-criteria is also available under which innovation capital projects may be justified



Type: Regulatory Allowance
Administered by: Nova Scotia Energy and Regulatory Boards Tribunal
Proponents: Nova Scotia Power

Context

The NSUARB created Innovation Justification Criteria in 2018 as part of its Capital Expenditure Justification Criteria (CEJC), which is used to justify capital projects. Providing clear criteria helps utilities understand what they can propose to the regulator.

A project that falls under the Innovation Justification Criteria differs from standard capital projects, which are typically approved to address routine operational needs of the utility. In contrast, innovative projects involve new or non-traditional approaches that fall outside the scope of day-to-day utility operations.

Criteria

The Innovation Justification Criteria states that:

Innovation capital investments may be justified on the basis that they are **reasonably expected to allow for testing before deployment at scale, provide valuable data and learnings, or aid in the development of business cases.**

Innovation capital projects may also be justified under one or more of the following sub-criteria: **1) Reduce upward pressure on revenue requirement; 2) Reliability and grid stability 3) Environmental and other compliance 4) Customer experience improvements.**

The Board still requires that rigour be applied in supporting materials filed with the application for the innovation project.

Status

- Smart Grid Nova Scotia (testing DERs/DERMS integration) was the first project approved under the Innovation Justification Criteria, which was recently successfully completed. The final report stated that “The innovation justification criteria has provided a clear regulatory pathway in which to realize benefits under innovation initiatives”



Case Study: BCUC Expedited Review Framework

At a glance: BCUC's Expedited Review Framework for BC Hydro's EV charging pilots uses a standardized application and evaluation form and requires BCUC approval within three weeks of application submission



Type: Regulatory Allowance
Administered by: BCUC
Proponents: BC Hydro

Framework Structure

BC Hydro's expedited review framework for public EV charging rate pilots, in collaboration with the BCUC, was approved in October 2024. The framework was proposed after the BCUC approved a \$6.5M marketing budget over 10 years to explore EV rate designs and directed BC Hydro to submit an expedited review process for such pilots. The framework follows a three-step process:

- 1. Standardized application form:** A simplified application form is submitted for each EV charging pilot, detailing project scope, key design elements, and proposed evaluation methodology
- 2. BCUC approval within three weeks:** A review of the application by the BCUC to confirm requirements of the template have been met, with a decision issued within three weeks of application submission.
- 3. Standardized evaluation form:** A standardized report will be submitted, which details project objectives, evaluation results, and planned next steps, including whether BC Hydro will apply to the BCUC for permanent approval (for which BCUC would have a chance to conduct a more in-depth review of the EV charging pilot)

BC Hydro stated in its initial proposal of the expedited review framework that its rationale for expedited review is that if approval processes are too long, the opportunity for the pilot may disappear altogether.

EV Charging Pilot Project Application Form

Overview	
Application Type	<input type="checkbox"/> New EV charging pilot project <input type="checkbox"/> Update to an approved EV charging pilot project
Pilot Name	Name of proposed EV charging pilot project
Objective	Description of hypothesis being tested and anticipated learnings and potential benefits
Time Period	Planned start date and end date
Design	
Pilot Scope	Description of proposed marketing pilot scope (e.g., specific stations, areas), Description of proposed pilot design (e.g., pricing or promotion)
Other Details	
Forecast Participation	Description of eligibility requirements (if any), target customer groups, forecast participation
Forecast Benefit and Cost Impact Breakdown	Expected benefit and estimated implementation and administration costs, if any; How the proposed design supports the stated objective
Explanation	

EV Charging Pilot Project Evaluation Report

EV Charging Pilot Project Overview	
Pilot Name	Name of proposed EV charging pilot project
Objective	Description of hypothesis being tested and anticipated learnings and potential benefits as well as an explanation of how the proposed design supports the stated objective
Evaluation	Description of how the proposed data collection, methodology and metrics will inform an evaluation of whether the stated objective has been met
Results	
Summary of pilot results:	<ul style="list-style-type: none"> Actual time period Actual scope Actual participation Revenue and cost impacts Cost impacts
Evaluation	
Summary of evaluation results:	<ul style="list-style-type: none"> Evaluation methodology and metrics Data analysis Customer feedback Effectiveness in achieving objective Any operational experience
Marketing Budget	
Pilot Spending	Summary of actual pilot spending
Cumulative Marketing Budget Spending	Tracking of cumulative marketing budget spending
Conclusion	

Status

- BC Hydro's first application through its expedited framework was submitted in June 2025, and received approval from BCUC on July 3rd



Tool 3: Ecosystem Support and Platforms

Ecosystem Support and Platforms may include technical assistance for innovation projects, dedicated platforms to facilitate collaboration among key stakeholders, and access to lab environments for testing and validating innovative solutions

Key barriers that can be addressed



Formal stakeholder collaboration: Ecosystem support and platforms can help facilitate collaboration between key ecosystem partners such as utilities, innovators, and regulators by creating structured opportunities for knowledge sharing and collaboration.



Regulatory capacity & knowledge constraints: Proponents can benefit from training, technical assistance, and hands-on experience in testing innovations. These supports can help build an understanding of how to work within the existing regulatory system.



Innovation capacity & knowledge constraints: Support offered can help proponents view innovation as a viable tool and equip them with the knowledge required to test and implement new solutions.

Example programs (not exhaustive):

- **CA:** CalTestBed*
- **NY:** NY Grid CONNECT*
- **OR:** Portland General Electric Smart Grid Test Bed
- **CA:** UCSD DERConnect
- **WA:** University of Washington Clean Energy Testbed

*Deep dive in following slides



Case Study: NY Grid CONNECT

At a glance: NYSERDA's NY Grid CONNECT follows a phased approach that includes identifying problem statements, providing funding opportunities/lab testing, and measuring outcomes for replication. Its Idea Exchange platform fosters collaboration among utilities, regulators, and market participants.



Type: Ecosystem Platforms

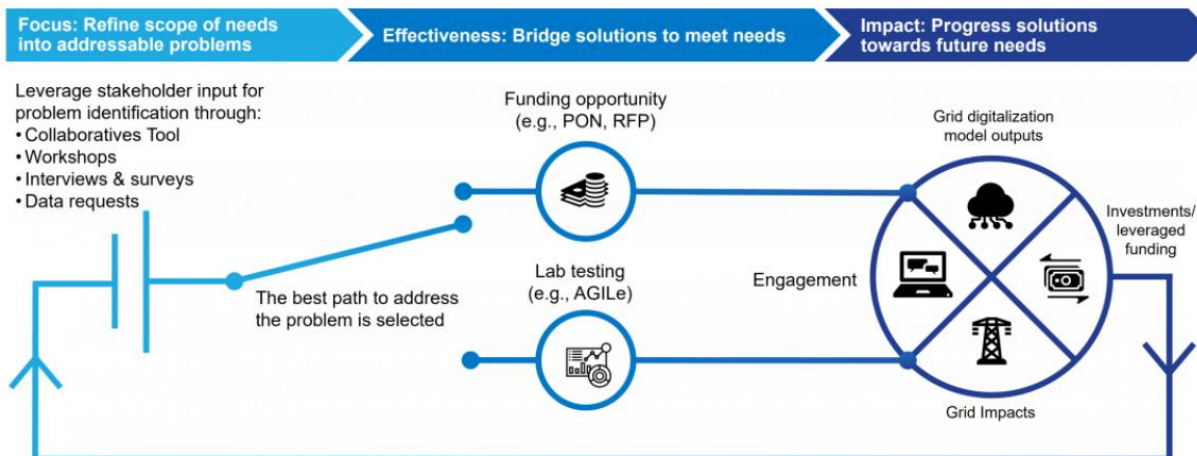
Administered by: Guidehouse/NYSERDA

Proponents: Utilities, researchers, and other stakeholders

Program Structure

NY Grid CONNECT aims to advance innovation to support five key priorities: grid stability, resilience, flexibility, storage as a grid asset, and grid-enhancing technologies. **The Idea Exchange** within NY Grid CONNECT serves as a forum for proponents to post their ideas to advance NY Grid CONNECT's goals and facilitate collaboration amongst key stakeholders.

The program follows a three phased approach: the first phase aims to identify topics and define problem statements through collaborative activities (e.g. the Idea Exchange); the second phase provides NYSERDA funding or lab testing (through NYPA's AGILe program); and the last phase aims to compile learnings and measure outcomes for replication, as well as encourage increased collaboration amongst participants.



Source: [NYSERDA](#)

Status

- Program launched 2024
- Grid CONNECT has put process into practice through exploration of barriers to DERM's deployment. Results heard from stakeholder engagement were compiled and helped inform a NYSERDA funding opportunity through its Smart Grid program



Case Study: CalTestBed

At a glance: CalTestBed offers testing vouchers to clean energy hardware innovators with technologies at TRL 5-7, enabling access to over 70 world-class testing facilities.

CalTestBed

Type: Test Bed

Administered by: New Energy Nexus

Proponents: California companies/entrepreneurs

Program Structure

Funded by the California Energy Commission (CEC) Electric Program Investment Charge (EPIC), CalTestBed provides clean energy companies and entrepreneurs up to \$300,000 for testing of technologies at one or more of 70 locations across eight University of California campuses and Lawrence Berkeley National Laboratory.

CalTestBed follows a 3-step process:

- 1. Annual Solicitation and Outreach:** Annual solicitations are held, and each application submitted is reviewed and scored by technical reviewers
- 2. Laboratory Consultation:** Applicants that advance to this stage have a consultation with an SME, campus representative, and principal investigator to develop a statement of work which includes the scope, budget, and schedule for testing. Once the CEC approves and reviews the proposed SOW, recipients can begin testing
- 3. Customer Development/Commercialization:** An annual symposium is held to connect ecosystem partners together and highlight voucher recipients. Recipients will also receive access to workshops, training, and information about other funding opportunities to help them reach commercialization and secure additional funding.

Eligibility Criteria

California-based companies with a technical readiness level (TRL) between 5-7 and that align with CEC's EPIC funding priorities. The project must focus on clean energy-focused hardware and integrated solutions; stand-alone software projects are not eligible.

Status

- Since 2019, **four cohorts have been supported totalling 63 companies**
- As of Sept 2024, 35 companies have completed testing, and of those, **60% have reported advancing their innovation by one or more TRLs**
- An estimated **300 jobs have been created and \$416M in follow-on funding** have been reported since being CalTestBed recipients
- Several types of technologies have been supported, with energy storage technologies being the most common (25 companies)



Tool 4: Innovation Fund

Innovation Funds provide funding to support the research, development, and demonstration of new technologies that help advance the jurisdiction's electricity system goals.

Key barriers that can be addressed



Limited innovation budgets: Innovation funds enable broader participation in innovation efforts by providing financial support to advance emerging technologies and can help reduce the burden on ratepayers to fund innovation projects.



Regulatory capacity & knowledge constraints: Providing financial support helps proponents gain practical experience in working within the existing regulatory system to test innovations.





Innovation capacity & knowledge constraints: Access to funding increases proponents' capacity and skills for testing and assessing new technologies.

Example programs (not exhaustive):

- **ON:** IESO Grid Innovation Fund*
- **BC:** Government of BC Innovative Clean Energy (ICE) Fund*
- **MB:** Efficiency Manitoba Innovation Fund
- **CA:** California Energy Commission EPIC Program
- **NJ:** NJEDA Clean Tech Seed Grant Program

*Deep dive in following slides

Case Studies: IESO GIF and BC ICE Fund

Program	 Grid Innovation Fund (GIF)	 Innovative Clean Energy (ICE) Fund
Proponents	Local hydro companies, technology companies, consulting firms, industry associations, educational institutions, public sector organizations	Emerging clean tech companies, universities, municipalities, First Nations
Program Description	<ul style="list-style-type: none"> The GIF aims to enhance the reliability, efficiency, and affordability of Ontario’s electricity system. It invests in projects that enable Ontario customers to manage their energy better, reduce overall system costs, and enhance reliable operations within Ontario Targeted calls for projects are periodically issued that address a specific challenge, and applications through open calls are also accepted. It invests in projects for no more than three years in length and funds a specified percentage of the total project costs. It focuses on validating technologies at a technology readiness level (TRL) of 7 or greater Funded through the Global Adjustment charge 	<ul style="list-style-type: none"> The ICE Fund aims to support the Province’s CleanBC plan, including the province’s GHG emissions reduction targets, while supporting economic development. Targeted calls are periodically issued for a set period alongside open calls. The 2025 targeted call is expected to award a total of \$5M - \$9M and is focused on projects with themes related to electrification affordability/efficiency and utility energy management. The fund focuses on projects that can clearly demonstrate how they will progress towards commercial (TRL 4 or greater) Funded through a levy on energy sales
Program Status	<ul style="list-style-type: none"> Since 2005, the GIF has provided financial support for more than 200 projects across Ontario. These projects span the areas of NWAs, enhancing forecasting and planning, electrification, infrastructure resilience, and wholesale market integration. The GIF is evaluated on a biannual basis; the most recent evaluation, completed in 2024 by Guidehouse, revealed that the program had a moderate impact on guiding the sector’s future, and a moderate impact on the growth and financial success of the funded organization 	<ul style="list-style-type: none"> Since 2008, the ICE Fund has committed over \$124M to support clean energy technologies, clean energy vehicles, R&D, and energy efficiency programs Impacts from projects in FY 2023/2024 & 2024/2025 include 145 BC jobs supported, potential GHG reductions of 342,232 ktonnes CO2eq, and 9 novel technologies being developed

3. Comparison & Key Takeaways





Qualitative Assessment Criteria

The three leading barriers to innovation, as identified by econext, were used to develop assessment criteria. The tools were then qualitatively evaluated at a high level based on their ability to address these barriers.

Criteria	Definition	Scoring		
		● Low	● Med	● High
Support Ecosystem Collaboration	Extent to which the tool supports collaboration amongst utilities, regulators, and other ecosystem partners (e.g. informal communication channels)	Minimal or no contribution to supporting collaboration	Moderately supports collaboration amongst ecosystem partners	Significantly supports collaboration amongst ecosystem partners
Improve Regulatory Capacity & Knowledge	Helps ecosystem partners (e.g. utilities) build knowledge on how to work within the regulatory system to test new technologies	Minimal or no contribution to building knowledge/capacity	Moderate contribution to building knowledge/capacity	Significant contribution to building knowledge/capacity
Enhance Regulatory Flexibility	Facilitates increased flexibility within regulatory processes (e.g. exemptions from capital spending caps) to test innovative solutions	Minimal or no flexibility introduced to existing processes	Introduces moderate flexibility to existing processes	Significantly enhances regulatory flexibility

Assessment Results

Employing a suite of tools is important to address key barriers to innovation. **Each tool addresses specific barriers, and collectively, the four tools reviewed contribute to an effective innovation ecosystem.**

	Support Ecosystem Collaboration	Improve Regulatory Capacity & Knowledge	Enhance Regulatory Flexibility
 1. Regulatory sandbox	● High	● High	● High
 2. Regulatory allowances	● Medium	● Medium	● High
 3. Ecosystem support and platforms	● High	● Medium	● Low
 4. Innovation fund	● Low	● Medium	● Low

Key Themes from Case Studies

- **To facilitate meaningful change, an innovation ecosystem is required, which contains elements of all four tools.** For example, in Ontario, innovation funding is offered through the IESO Grid Innovation Fund while the OEB Sandbox offers regulatory relief and ecosystem support.
- **Tools often overlap.** Regulatory sandboxes can include elements all four tools. For example, the Connecticut IES sandbox includes funding and ecosystem support/collaboration tools.
- **Informal communication pathways between regulators and stakeholders** can support faster implementation of innovations, accelerate learning about the energy regulatory system, and strengthen trust amongst stakeholders in the energy ecosystem.
- **In Canada, regulatory sandboxes are novel but expanding.** Ontario has an established sandbox. New Brunswick is in the process of establishing one focused on rate design.
- **Program or process design is important to meet innovation goals.** Many programs reviewed focus on specific project types or technology readiness levels. Establishing clear performance metrics is essential to support ongoing program evolution and ensure regulatory/utility goals are met.

Considerations for NL

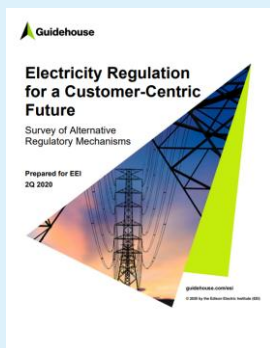
- **Creating an informal communication pathway, similar to those seen in regulatory sandboxes, could be a useful new addition to NL innovation ecosystem.** Because innovation inherently involves uncertainty, enabling early conversations allows proponents to explore opportunities before formal processes. This tool is becoming more common in Canada and may be a viable new option in Newfoundland and Labrador.
- **Adjustments to current processes can support innovation, without creating standalone programs.** Some jurisdictions are modifying current process to support innovation and new technologies. A definition expansion (as in NSUARB) or creating a simplified application form (as in BC Hydro) can offer new flexibility in existing processes.

4. Appendix

- **Resource Highlights**
- **Key Sources**



Guidehouse: Electricity Regulation for a Customer-Centric Future

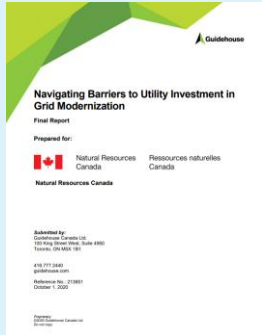


What is it?

- Report that provides a survey of alternative regulatory mechanisms that have emerged as tools to respond to evolving customer needs and expectations and changing technological, policy, and market conditions
- Includes section highlighting approaches regulatory commissions can take to foster innovation

Which tools does it include/highlight?

1. Regulatory Sandboxes: These sandboxes are effectively a limited waiver from normal regulations and requirements, allowing companies with new innovative ventures to test their products or services in a constrained and safe environment. In the electric company context, regulators could create space for electric companies to prototype and test innovative products and services while establishing common-sense guardrails to ensure customer protection
2. Innovation Fund: An innovation stimulation package that funds research, development, and demonstration of new technologies and operating and commercial arrangements at both the distribution and transmission level.
3. Processes to advance new products/service: A web-based platform that connects the electric company with technology companies or other solutions providers. This approach has been used in New York through a centrally managed online portal called NY Grid CONNECT



What is it?

- Report prepared for NRCan that examines the barriers utilities face for grid modernization investments and options to overcome these barriers through examples in jurisdictions across North America and Europe

Which tools does it include/highlight?

1. Regulatory Sandboxes: Designed to expedite traditional processes to test new ideas and business models and introduce new products/solutions to the market in a timely manner. Regulatory sandboxes are less about R&D or technical feasibility and are more focused on solution integration to the energy system to benefit all (societal benefit streams).
2. Revenue Adjustment Mechanisms (RAM): Refer to how a utility's target revenues are determined, collected, and/or adjusted over time. Focus away from historic cost and sales (like a cost-of-service approach) and attempt a more prospective approach that incentivizes and rewards cost control, but also considers value
3. Performance Mechanisms: Provide focused incentives for utilities to reach performance targets aligned with policy and customer priorities through public metrics or scorecards



What is it?

- Article that highlights how energy regulators in various provinces are encouraging innovation within their regulatory regimes

Which tools does it include/highlight?

1. Regulatory Sandboxes: In Ontario, OEB's Innovation Sandbox provides a venue to engage in conversations with OEB staff about innovative ideas, and gives proponents temporary relief by way of a streamlined, simplified application process. OEB launched a stakeholder consultation process at launched the OEB Innovation Sandbox 2.0 in Jan 2022, and as part of that released an Innovation Sandbox Challenge, providing one-time funding of \$1.5M for six projects. It also partners with IESO's Grid Innovation Fund to support pilot projects.
2. Innovation Fund: BCUC approved a ratepayer-funded \$24.5M innovation fund for FortisBC (natural gas utility) to enable cleaner and more affordable energy solutions and mitigate long-term risks through innovation.

NARUC: Regulatory Innovations Platforms for Public Utilities



What is it?

- Summarizes regulatory innovation platforms for public utilities which enable the rapid testing of new technologies and business models
- Provides overview of innovation activities in a dozen US states and the District of Columbia

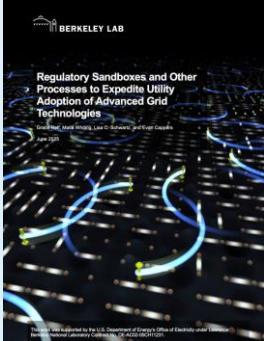
Which tools does it include/highlight?

1. Test Beds: Testing new technologies in real environments. Different ways this can be set up: The [CalTestBed](#) is funded by the California Energy Commission and provides \$16.7M in testing vouchers to clean energy innovators to use at testing facilities. [Connecticut's Test Bed Program](#) is offered by the Department of Energy & Environmental Protection and provides an opportunity to test technologies in the operations of a State agency, but funding is not provided.
2. Innovation Hubs: Providing technical support in addition to funding. [California's Energy Innovation Ecosystem](#) connects clean energy entrepreneurs with funding, training, and resources. [InnovateMass](#) provides funding and technical support

Additional Notes

Report focuses on “regulatory innovations platforms” that include three key features:

1. Public announcement of the innovations support activities, including a broad invitation for participation by anyone seriously interested in potentially viable innovations
2. At least some focus on regulatory innovation, which sometimes also includes innovation in business models for both regulated utility companies and competitive providers of innovative technologies
3. A prominent role for the utility regulatory authority in the design and implementation of trial projects intended to validate innovations



What is it?

- Report that examines the role regulatory sandboxes can play in promoting utility innovation, case studies of regulatory sandboxes implemented, and best practices for designing and implementing a sandbox

Key content in report

- Key challenges to utility innovations, which are bucketed into three categories: 1) Cost-of-service model and cost recovery; 2) Technological concerns (utilities concerned about safety/reliability rather than innovation, barriers to early replacement of technology); and 3) Education and leadership
- Key design features and best practices for implementation across scoping elements (objectives, scope, derogations, funding and cost recovery), participation requirements (program eligibility and application process), and governance
- Definition of a regulatory sandbox as “a mechanism that provides a structured environment for testing new technologies and business approaches under modified rules to increase the speed of adoption”. It also categorizes funding opportunities, pilot processes, and rate case or rulemaking under a “sandbox-type mechanism.”
- Case studies of sandbox-type mechanisms implemented across the U.S.




What is it?

- Toolkit developed to provide Canadian regulators with a guide to identify, design, and carry out regulatory experiments
- Provides practical advice for implementing a regulatory sandbox

Key content in report

- The Regulatory Experiments chapter includes practical advice on how to identify opportunities for an experiment and how to design and run an experiment
- The Regulatory Sandboxes chapter clarifies the definition of sandboxes, offers a framework to identify if “a sandbox is right for you”, and advice on how to implement a regulatory sandbox.
 - Six phases for designing and running a sandbox are described in detail: 1) Prototype your sandbox; 2) Share your design and gather feedback; 3) Establish an application process; 4) Prepare licenses and design the testing environment; 5) Start testing; 6) Exit and evaluate

Regulators' Experimentation Toolkit • Annex: Worksheets

 Is a sandbox right for you?				This tool will help you assess whether a regulatory sandbox is the right approach for addressing your regulatory challenges.		
Regulatory flexibility						
Affordances What does current legislation allow?		Constraints What doesn't current legislation allow?		What needs to change? Which constraints need to be overcome?		How could we change it? How could we overcome constraints?
Problem				Engaging stakeholders		
What is the problem? Who does it affect and how?	Why is it a problem? What is causing it?	Why does it need solving now?	How would a sandbox solve this problem?	Stakeholder (individual or category)	Needs and interests	Sandbox benefits sought
Regulatory change						
To what extent do you aim to create or revise regulations based on sandbox learnings?						

Key Sources – Case Studies

Tool	Program	Key Sources
Regulatory Sandbox	OEB Innovation Sandbox	Innovation Sandbox Annual Report OEB Innovation Handbook Innovation Sandbox 2.0 Report Joint Targeted Call Interim Report
	Connecticut Innovation Energy Solutions Program	Innovation Energy Solutions Program Design Document Innovative Energy Solutions Program Cycle 01 Innovative Energy Solutions Program Cycle 02
Regulatory Allowances	BCUC Expedited Review Framework	BC Hydro Expedited Framework Proposal BCUC Decision BC Hydro first application through Expedited Framework
	NSUARB Innovation Justification Criteria	NSUARB M09519 Board Decision
	Michigan Expedited Pilot Review <i>(While not a case study, this program recently had approvals and the sources are provided for interest.)</i>	MSPC Utility Pilot Staff Report Michigan Pilot Directory DTE Approved Pilot Review Work Plan Consumers Energy Approved Pilot Work Plan
Ecosystem support and platforms	CalTestBed	CalTestBed at a Glance 2024 CalTestBed Website
	NY Grid CONNECT	NY Grid CONNECT website
Innovation funding	IESO Grid Innovation Fund	IESO GIF Website 2024 GIF Third Party Evaluation
	BC Innovative Clean Energy Fund	2025 ICE Fund Performance Report 2025 Targeted Call for Clean Energy Innovation



Thank you!



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